Dr. A.P.J. Abdul Kalam Technical University
Lucknow, Uttar Pradesh, India

In Association With
Computer Society Of India,
Lucknow Chapter

INTERNATIONAL CONFERENCE

Souvenir of the

INTERNATIONAL CONFERENCE

On

"Challenges & Opportunities for Innovation in India"

(COII - 2023)

(06th- 08th April, 2023)

Ambalika Institute of Management and Technology, Lucknow,
(AKTU College Code: 363)
Maurawan Road, Mohanlalganj, Lucknow
Uttar Pradesh Pin Code: 226301
Website: www.aimt.edu.in

INSTITUTION'S INNOVATION COUNCIL
(Ministry of Education Initiative)

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(GOVERNMENT OF INDIA)

Souvenir

Ambalika Institute
Of
Management and Technology, Lucknow (India)

(AKTU College Code: 363)

Maurawan Road, Mohanlalganj, Lucknow, Uttar Pradesh Pin Code: 226301,
Website: www.aimt.edu.in

Organized

INTERNATIONAL CONFERENCE

On

"Challenges & Opportunities for Innovation in India"

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06th-08th April, 2023

E-mail: editor.coii@ambalika.co.in

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Ambalika Institute
Of
Management and Technology, Lucknow (India)

VISION & MISSION

Vision

To nourish the students, blossom them into tomorrow's world class professionals and good human beings by inculcating the qualities of sincerity, integrity and social ethics.

Mission

1. To provide the finest infrastructure and excellent environment for the academic growth of the students to bridge the gap between academia and the demand of industry.

2. To expose students in various co- curricular activities to convert them into skilled professionals.

3. To grind very enthusiastic engineering and management student to transform him into hard working, committed, having a zeal to excel, keeping the values of devotion, concern and honesty.

4. To involve the students in extracurricular activities to make them responsible citizens.

Anandiben Patel
Governor, Uttar Pradesh

Raj Bhavan
Lucknow - 226 027

29 March, 2023

Message

I am glad to know that Ambalika Institute of Management and Technology, Lucknow is organizing an international conference on 'Challenges and Opportunities for Innovation in India (COII-2023)' on 6th and 8th April, 2023. To mark the occasion a souvenir will also be published.

Under the present day scenario when India is playing an important and leading role in world affairs, innovations are underlining feature for sustainable development. I hope this event will provide vibrant platform to academicians, industry persons, research scholars, students and delegates to share their views and shall go long way in the development of the country.

I extend my best wishes for successful publication of the souvenir and a grand success to the international conference.

(Anandiben Patel)

Telephone : 0522-2236497 Fax : 0522-2239488 Email : hgovup@gov.in Website : www.upgovernor.gov.in

Brajesh Pathak
Deputy Chief Minister

Medical Education, Medical Health &
Family Welfare, Mother and Child Welfare
Government of Uttar Pradesh
Office : Room No. 99, 100, Main Building,
Vidhan Sabha Sachivalaya
Phone : 0522-2238088 / 2213272 (Off.)

Date

Greeting Message

I am immensely happy to know that Ambalika Institute of Technology, Lucknow is organizing International Conference of Challenges & Opportunities for Innovation in India from 6th - 8th April, 2023.

India is in need of progressive and innovative ideas in technical education. The institute is giving chance to young blood to show its strength and this conference will definitely make a big difference to new and innovative ideas of all the researchers.

I appreciate the Institure for this incredible step and congratulate too for that International Conference.

My heartily wishes for a grand success of this conference.

(Brajesh Pathak)

9, Raj Bhawan Colony, Lucknow-226001. Ph.: 0522-2239999 (Resi.)

आशीष पटेल
मंत्री
प्राविधिक शिक्षा, उपभोक्ता संरक्षण
एवं वाट मांप विभाग, उ.प्र.

अ.शा.प.सं. 443 मंत्री/प्रा.शि.उ.सं.बा.मा./2023
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आवास 0522-2235211
आवास : 1-ए, माल एवेन्यू, लखनऊ
दिनांक 05/04/2023

MESSAGE

I am delighted to know that Ambalika Institute of Management and Technology, Lucknow is organizing an international conference on "Challenges and Opportunities for Innovation in India (COII-2023) " from 6th to 8th of April 2023.

Theme of the conference has gained importance looking to the present day problems facing the society. Teachers and members of faculty have to play an important role in this direction while motivating the students for innovation.

I wish success for this conference.

(Ashish Patel)

Dr. Shweta Mishra
Convener (COII-2023)
AIMT, Lucknow

Pramod Tiwari
Member of Parliament
Deputy Leader, Rajya Sabha
Member : Congress Working Committee

सत्यमेव जयते

Member
- Parliamentary Standing Committee - **Finance Ministry**
- Parliamentary Standing Commitee - **Jal Shakti Ministry**
- Parliamentary Consultative Commitee - **Home Affairs Ministry**

Date 30-03-2023

Mesage

I am very happy to learn that Ambalika Institute of Management and Technology, Lucknow is organizing an international conference on **"challenges and Opportunities for Innovation in India (COII- 2023)"** from 6th to 8th of April 2023.

Ambalika Institute of Management and Technology, Lucknow has gained an important position in area of education for technology and management in recent time.

I hope that this conference will go in long way in contributing to serve our state and nation at large.

I wish success to college management and faculty members for this whole event.

With Regards,

Yours Sincerely,

(Parmod Tiwari)

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कुलपति
Prof. Alok Kumar Rai
Vice-Chancellor

लखनऊ विश्वविद्यालय
(नैक द्वारा A++ ग्रेड प्रत्यायित)
लखनऊ–226007 (उ.प्र.) भारत
University of Lucknow
(Accredited A++ by NAAC)
Lucknow-226007 (U.P.) India

Message

We are pleased to note that Ambalika Institute of Management and Technology, Lucknow is organizing an international conference on ""Challenges and Opportunities for Innovation in India (COII -2023)" from 6th to 8th of April 2023. Innovations have gained importance for the development and growth of the country especially in present day circumstances when, sustainable development is the need of the hour. Innovations have become a matter of compulsion rather than a matter of choice. World is looking towards India to lead the world in the emerging world order.

I wish success this conference all the success and congratulate the management and members of faculty for their initiative in this direction.

My best wishes for the success of the conference.

Dated 05.04.2023

(Prof. Alok Kumar Rai)

Telephones : 0522-2740467 (O) 0522-2740462 (R) Fax : 0522-2740467 (O), 9415684935 (M), Email: vc@lkouniv.ac.in

College Code 363

AMBALIKA INSTITUTE OF MANAGEMENT & TECHNOLOGY

B. C Misra,
Chairman,
Ambalika Group

MESSAGE

I am delighted to know that the ***"International Conference on Challenges and opportunities for Innovation in India" (COII-2023)*** *which is going to be organized by our institute on 6th to 8th April 2023. As I know it has been widely accepted by whole academic world.*

There is no end to new innovations for the progress in technology for our technocrats and other innovators for making our society & nation. It will continue to evaluate challenges, to recognize new opportunities to innovate unique approach for our development.

We at Ambalika continuously strive to innovate as per best of our knowledge and we are creating world class Technocrats, Scientists, Managers and Engineers. Our Center of Excellence is a step forward in this direction. I am sure that Institute and Center of Excellence will jointly become the path breakers in the field of new innovative ideas of Science, Engineering, Technology and Management. It will establish a new teaching methodology to set new standards for others.

Further I convey my best wishes for the grand success of COII- 2023 and for the publication of souvenir on this special occasion.

B. C. Misra
Chairman
Ambalika Group

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Prof. P. K. Dwivedi, Avadh University, India

SCHEDULE OF INTERNATIONAL CONFERENCE ON OPPORTUNITIES FOR INNOVATION IN INDIA (COII-2023)
6th - 8th April 2023
Day - 1 (06-04-2023)

S.No	Timing (IST)	SESSION 1: (INAUGRAL SESSION)	
1	10:00-10:10 AM	Lamp lightning	All distinguished guest & college key persons
2	10:10-10:14 AM	Saraswati Vandana	AIMT Students
3	10:14-10:15 AM	National Anthem	AIMT Students with All Presentees
4	10:15-10:20 AM	Corporate Video	On Display
6	10:20-10:25 AM	Welcome Speech	Shri Ambika Mishra (CEO AIMT & Patron COII-2023)
7	10:25-10:35	Address by Chief Guest	Shri Brijesh Pathak (Hon'ble Deputy Chief Minister & Cabinet Minister, Medical Education, Medical Health, Family Welfare, Mother & Child Welfare, Government of UP)
8	10:35-10:45 AM	Address by Guest of Honour	Shri Ashish Singh Patel (Hon'ble Minister of Technical Education, Consumer Protection, Weights and Measures Minister, Government of UP)
9	10:45-11:00 AM	Address by Guest of Honour	Prof. Alok Kumar Rai,Hon'ble VC, AKTU, Lucknow University, India
10	11:00-11:10 AM	Address by Guest of Honour	Dr. (Retd Prof.) A K Mishra, Former HoD Computer Science department, MNNIT, Prayagraj
11:10-11:20 AM		High Tea	
Session-2: PLENARY AND KEY NOTE SESSION -1			
1	11:20-11:30 AM	Plenary Speaker Address	Prof V K Singh (Hon'ble VC, Maharaja Ganga Singh University, Bikaner)
2	11:30-12:00 PM	Keynote Speaker address	Prof. Janakarajan Ramkumar, Department of ME & Design, Indian Institute of Technology, Kanpur
3	12:00-12:30 PM	Keynote Speaker address	Dr. Mohit Gambhir, Director (Innovation), Ministry of Education's Innovation Cell, Govt. of India
4	12:30 - 1:00 PM	Keynote Speaker address (Online)	Dr Brijesh Kumar Chaurasia, Dept of Computer Science, Indian Institute of Information Technology, Lucknow
	1:00 - 1:45 PM	LUNCH	
Session-3: Technical Session-1			
1	1:45-2:15 PM	Invited Speaker address	Dr. Puneet Mishra, Computer Science Department, Lucknow University
			Session Chair/Co-chair
2	2:15-4:30 PM	Oral Presentation (CSE / IT)	Dr. Puneet Mishra, CS Dept, University of Lucknow Prof. Neeta Rastogi, CS Dept, AIMT
Day 2 (07-04-2023)			
Session-4: KEY NOTE SESSION -2			
1	09:50-10:00 AM	Welcome Speech	Dr. Ashutosh Dwivedi, Diector AIMT, Vice chairman (COII 2023)

2	10:00-10:10AM	Address by Guest of Honour	Prof. Ravindra Kumar Sinha, Hon'ble VC of Shri Mata Vaishno Devi University, Katra, J&K
3	10:10-10:20AM	Address by Guest of Honour	Dr. Sarvan Baghel, OSD, CM, UP
4	10:20-10:30AM	Plenary Speaker address	Shri Shreyansh mandloi, Oraganizing Secretary, Awadh Vigyan Bharati
5	10:30-11:00AM	Keynote Speaker address	Prof. O. P. Singh, Department of Kayachikitsa, BHU
6	11:00-11:30AM	Keynote Speaker address (Online)	Prof. Sanjay Madhevi, HOD- Department of business administration & Director of Central Placement cell, University of Lucknow
11:30-11:45 AM		High Tea	
Session-5: KEY NOTE SESSION -3			
1	11:45 -12:15 PM	Keynote Speaker address	Prof. Rajiv Manohar, Department of Physics, Lucknow University
2	12:15 -12:45 PM	Invited talk	Dr Mamta Tiwari, BHU, Department of Swasthavritta and Yoga (Preventive Medicine in Ayurveda)
3	12:45 -1:15 PM	Invited talk (Online)	Mr. Amir Raza, University of Warwick, UK
1:15-2:00 PM		LUNCH 1:00-1:45 PM	
Session-6: Technical session-2			
			Session Chair/Co-chair
1	02:00 - 4:30 PM	Oral Presentation (AS / BT / MBA / Med)	Prof. Alok Mishra, Gaya Engineering College, Gaya Prof. O. P. Singh, Department of Kayachikitsa, BHU Prof. P.K. Dwivedi, Dept of Mathematics, RMLAU
Day 3 (08-04-2023)			
Session-7 a: Technical session-3			
			Session Chair/Co-chair
1	9:30 - 11:00 PM	Oral Presentation (EE / EC / ME / CE)	Prof. Shailendra Sinha, Professor & HOD, Mechanical Engineering and Dean PG&R , Institute of Engineering & Technology, Lucknow
Session-7 b: KEY NOTE SESSION -3 and Valedictory Session			
1	10:30-10:40 AM	Welcome Speech	Dr. Ashutosh Dwivedi, Diector AIMT, Vice chairman (COII 2023)
2	10:40-10:50AM	Address by Guest of Honour	Shri Rajeshwar Singh, Member of the Uttar Pradesh Legislative Assembly
3	10:50-11:05AM	Plenary Speaker address	Prof. Manoj Dixit, (Ex. VC Avadh University, Ayodhya Department of Public Administration, University of Lucknow, Uttar Pradesh
4	11:05-11:20AM	Plenary Speaker address	Shri Vinit Goenka, Politician, Bharatiya Janata Party National Co-Convenor of IT Cell and Spokesperson for BJP Delhi Pradesh.
5	11:20-11:50 AM	Key note address (Online)	Dr. Kumar Anubhav Tiwari, Scrum Master and DSP Softwate expert, R&D Wartsila Corp, Vaasa, Finland and Ultrasound Research institute and Multimedia Engineering, Kaunas University of Technology (KUT), Kaunas, Lithuania
6	11:50 - 1:00 PM	Valedictory and vote of thanks	Dr. Shweta Mishra, Co-Convener of the Conference

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Chapter-1

Abstracts

SECTION: AS

Applied Sciences

Humanities

Biotechnology

Medicals

COII/MBA/230735

Tourism Marketing & Marketing Innovation in India

Mr. Ionut Haralambie
Marketing Executive
Commercial Department & Marketing
Embassy of India in Romania, the Republic of Moldova and Albania
haralambie_i@yahoo.com

This paper explores the business opportunities for tourism marketing via marketing innovation ideas and plan for digitalization in different sectors in India, such as: tourism, healthcare, and retail, emphasizing the importance of innovation and finding solutions that meet the needs of different types of worldwide consumers.
The power of WOM (word-of-mouth) Marketing will highlight the importance of creating engaging videos and visuals that showcase the unique attractions and culture of India, as well as the effectiveness of engaging macro, micro, and nano influencers to reach a wider audience. The paper suggests creating regional promotion videos that highlight local cuisine, landmarks, natural wonders, and traditional festivals in order to attract tourists and encourage them to explore more of what India has to offer.
The paper also proposes incorporating innovative solutions, such as augmented reality and virtual tours as a way to enhance the customers' experience and provide a more immersive view of the local culture and attractions. It also emphasizes the importance of collaboration between businesses and stakeholders in the tourism industry and to develop online platforms and marketing campaigns to easily promote India as a travel destination.
Overall, this paper provides valuable insights into the Indian market and offers practical strategies for businesses looking to expand and succeed in this growing economy.

Keywords: *Indian tourism, marketing innovation, promotion, digitalization*

COII/MBA/230736

Smart Villages: Innovative Solutions for Sustainable Rural Development

Velicu Elena Nicoleta
"Mihai Viteazul" National Intelligence Academy, Bucharest, Romania
nicoleta.velicu98@yahoo.com

The paper discusses Smart Villages as a solution to improve the lives of residents in rural areas from India, streamline administration and develop the economic environment by building on local strengths, opportunities, and the latest technologies.
It highlights the challenges faced by rural areas in India, such as access to basic amenities like clean water and electricity, and how smart villages can address these challenges using solutions like solar power and water filtration systems.
The objectives of Smart Village projects are to provide villagers with the benefits of an uplifting and modern lifestyle while preserving the values, traditions, and customs of rural communities by understanding the benefits of a sustainable and healthy lifestyle. The Smart Village projects rely on a participatory approach to develop and implement local strategies that can be funded from public and private sources. The projects include health, education, economy, sustainability, digitization, renewable energy, food, awareness, and civic engagement.

The paper also outlines the stages of implementing a smart village project, including analysis and strategy, design and development, implementation, monitoring and optimization. It discusses the benefits of implementing smart village projects, including digitization, personalization, funding, and sustainable development.
The article provides examples of smart village projects around the world, including a complete village in Innisfil, Canada, and a climate-smart village initiative in Rwanda.
Overall, Smart Villages are a promising solution for rural areas, and their implementation can provide immediate benefits for the inhabitants, the institution, and the economic environment.

Keywords: *smart village, rural development, technology, sustainability.*

COII/AS/230701

Influence of Soft Skills in the Modern Teaching

Swati Srivastava
Assistant Professor
Applied Science and Humanities
Ambalika Institute of Technology and Management, Lucknow

Education helps in the development of thought process, knowledge, ability, skills, personality and attitude. In order to enhance the overall personality of a student, so that he can deal with necessary skills of life. A teacher plays an imparting role which cannot be denied especially when one talks about the modern time of teaching. In this era a teacher is not only responsible for grooming and enlightening the student but it is a huge demand to teach soft skills in an advance and innovative manner. This helps the student to deal with interpersonal skills, emotional intelligence as well as social life, even helps one to adjust according to the need and desires of others. This not only helps to speak well to others but also in an approachable and pleasant manner, it also includes skills like negotiation, problem solving, trouble shooting, resolve conflicts, networking, effective team work and managing stress etc. At present teachers need to teach soft skills which helps the students to cope up with the personality development issues of the next generation, so they can develop a successful career in the coming future. This paper explains the influence of soft skills and the importance of this subject in the modern times. It deals with the critical need to acquire soft skills in work place.

Keywords*: conflict, interpersonal, negotiation, skills.*

COII/AS/230702

A Review on Liquid Crystals with Its Enormous Possibilities

Avneesh Kumar Singh
Associate Professor, Physics
Department of Applied Sciences. AIMT, Lucknow
Email: aksphy@gmail.com

Liquid crystals are the unique stuff those are exist in-between the liquid and solid states. Liquid crystals have unlike molecular configuration than the liquids and solids. The liquid crystalline

phase may occur either due to heating of solids (thermotropic LC) or due to dissolving an amphiphilic mesogen in a suitable solvent (lyotropic LC).There are various types of liquid crystals based on distinct internal arrangement of molecules in lattice. They acquire lots of properties of a liquid, as high fluidity, incapability to support shear, creation of droplets however they show crystalline behaviour as anisotropy in their optical, electrical, and magnetic properties. Due to its unique structure and performance it has large number of applications in various areas. This review paper discuss about the uniqueness of LCs, its types, properties and vast applications in various fields such as displays, medical, pharmaceutical industries, cosmetic industry, sensor. Application of LCs in new fields based on latest research and its remarkable potential is also discussed.

Keywords: *Liquid crystals (LCs), phases, displays, recent applications, potential area.*

COII/AS/230703

Varanasi as A Smart City: Geographical Analysis

Dr. Shashi Prakash Shukla
Guest Lecturer
Department of Geography, Jannayak Chandrashekhar University Ballia, U.P.
sshukla9087@gmail.com

Varanasi or Banaras (also known as Kashi) is one of the oldest cities in the world. Varanasi's significance in Hindu mythology is virtually undisclosed. Varanasi Nagar Nigam is currently participating in the second round of the Smart City Challenge to improve on the smart city proposals made in the first round. Varanasi, also known as the City of Light, Culture and Heritage, is currently the city with the highest potential for next selection in Uttar Pradesh. According to the guidelines of the Department of Urban Development, Government of India, the elaboration of smart city proposals is citizen-centric and the successful implementation of each city depends on citizens' responses/suggestions. Varanasi Nagar Nigam identified a vision statement that emerged from a 'Vision Workshop' held in Varanasi.

COII/AS/230704

Artificial Intelligence and Human Interaction: Exploring Potential of Sociological Research

Aishna Verma, Research Scholar,
Department of Sociology,
University of Lucknow, Lucknow
Email: aishnaverma95@gmail.com

Interaction among individuals is the pre-requisite of the human society. It is the human interaction which has remained a basis for the perpetuation of social solidarity. With the passage of every century, technological advancement is accelerating and human society is witnessing plethora of gadgets and services which is broadening the arena of human interaction globally.

However, the mode of interaction is highly digitalized vis-à-vis, real life interaction. In this scenario, Artificial Intelligence (AI) has come up as an essential element of the technological industry. Artificial intelligence is a specialization within the computer science discipline which uses symbolic representation, inference, and heuristic search strategies to attempt sophisticated tasks once thought possible only for humans. Today, AI technology is penetrating into various dimensions of society such as, in communication channels, medical facilities, military organizations, industrial development, space missions, marketing etc. With increasing integration of AI in new media technologies, devices, services to which individuals are more or less exposed to through the smart technology used by them today, it is necessary for the discipline like sociology to study its implications in everyday interactions of individual and find new meanings in the social solidarity of contemporary society. Based on the literature review and secondary data this paper seeks to understand the emerging phenomenon of AI and human interaction in everyday life with an analysis of it as an emerging dimension in social science researches particularly sociological studies.

Keywords: *Artificial intelligence, everyday life, interaction, sociological research*

COII/AS/230705

Future of Digital and Social Media Marketing

Dr. Smriti Sharma
Assistant Professor, Department of Home Science
J.D.V.M P.G. College, Kanpur

The use of the Internet and social media has changed consumer behavior and the way businesses do business. Social and digital marketing offers great opportunities for organizations through reduced costs, brand awareness and increased sales. However, significant challenges remain due to poor electronic word-of-mouth and a disruptive online presence. This article brings together the collective insights of many leading experts on issues related to digital marketing and social media. Expert understanding provides detailed information on key areas of this important subject and insight into other key areas including human intelligence, augmented reality marketing, digital content management, marketing and mobile advertising, B2B marketing, word of mouth and ethics. bridle. This research provides an important and timely contribution to researchers and researchers in the form of challenges and opportunities where we highlight the limitations of current research, define research gaps, and developing questions and strategies that can help improve digital skills. Social media marketing.

Key words: *Consumer Behavior, Digital Marketing, Social Media Marketing, Mobile advertising*.

COII/AS/230707

Fertilizers: Urea Production

Kartik Upadhaya
Btech (Chemical)

PKG Group of Institution, Madlauda , Panipat
Email:- kartikupadhyay0634@gmail.com

The paper reviews the potential and status of fertilizers technology used in India for agricultural and for industrial uses. In this paper I will explain about how urea is produced and how it is made in use. In this paper explain about what is the condition to produce the urea. This paper also explained about which equipment is used in the urea production. In this paper explain what the temperature and pressure is for urea production at good efficiency. In this paper I will explain about the production of urea by the MITSUI TOATSU process .This process is good for production of urea at a good efficiency rate. In this process the mix up of ammonia and carbon dioxide at 240 kgf pressure and 200 °C temperature. In the middle the mix up of ammonia and carbon dioxide makes the ammonium carbamate. After the making of ammonium carbamate then make the urea and water in the urea synthesis reactor. The outlet from the urea synthesis reactor is 35% urea and 65% of carbon dioxide, ammonia and ammonium carbamate.

Keyword: *Fertilizers, urea fertilizer, general description of urea, urea synthesis reactor, safety in urea plant*

COII/AS/230708

Effect on Unsteady MHD Free Convective Boundary Layer Flow Through Porous Medium Past a Moving Vertical Plate With Heat source and Chemical Reaction

Sunil Kumar Singh[1], Suresh Maithan[2], Vipul Srivastav[3]
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The purpose to the present problem is to study the unsteady effect on MHD free convective boundary layer flow through porous medium past a moving vertical plate with heat source and chemical reaction. The generating equation of free convective boundary layer flow and energy are reduced into linear differential equation by means similar transformation. I solved solution of equation using simple method and obtain various parameter are present and discussed. The velocity and temperature profile, concentration and skin friction profile are shown graphically with the help of tables.

Keywords: *Porous Medium, Convective MHD boundary layer flow, Magnetic parameter, Prandtlnumber, Specific heat of fluid, Suction parameter, Magnetic field parameter.*

COII/AS/230709

Sanshodhan Sanshaman Chikitsa to Boost up Traditional Medical Tourism in India

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Ayurveda is an ancient science of life dealing with health and health related issues. Ayurveda has its root in India and is accepted globally as a system of medicine. It has less popularity and acceptance as a main stream of treatment in India. Many factors play role for such situation, including poor involvement of technology and healthcare management principles. The principles of Ayurveda are the main treasure of it that is unique and practically applicable in present scenario. *Sanshodhan* (body purification) and *sanshaman* (Conservative treatment) *Chikitsa*, diet and lifestyle modification according to body constitution, season etc. are some of the common principles of it. Common diet and lifestyle related diseases including obesity, diabetes, psoriasis, heart disease, and cancer are found to be curable by Ayurveda. Many scientific researchers have established standard treatment protocols for many of the acute and chronic type of diseases. Main eight branches of Ayurveda are less popular among general public due to lack of spread of knowledge about them in society. Indian government has made fruitful efforts to promote Ayurveda acceptance and make it a main stream of treatment in India. Establishing a separate Ministry for Indian system of Medicine has been a milestone in this path. AYUSH visa, reimbursement of Ayurvedic medicines is also included in this series. After COVOD-19, many foreign companies have also shown interest in Ayurveda for manufacturing of medicines and establishing units for Ayurvedic treatment. Inclusion of technology and management skills in the field of Ayurveda, from drug manufacturing to patient treatment has been an important step to achieve the goal of Indian government. This paper is review for role of management and technology to establish Ayurveda treatment in India.

Key words: *Ayurveda, Sanshodhan, Sanshaman, AYUSH visa.*

COII/AS/230710

Innovation in Yoga: Boon for traditional medical tourism

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Commercialization of Yoga is a boon for promoting Indian culture and tourism. Since the ages, Yoga and Ayurveda has become part of lifestyle; both these discipline gives tremendous health benefits. Entire world is trying to adopt Yoga and in this series, World celebrates International Yoga day every year on 21st of June. This is great initiative has taken by the Government of India for promoting better health and wellbeing. Commercialization of Yoga prioritize practical way of thinking and it facilitates greater understanding of it. Yoga enhances physical, mental, social & economic wellbeing. Ancient Indian scriptures also believes that by the practicing Dharma, Artha, Kama, Moksha in a scientific manner; one can earn good enough money for livelihood. Commercialization also signifies substantial demand for Yoga, which creates the benefits of a health industry that increasingly attracts more resources, particularly financial, that can help and support the livelihoods. There are many studies been done about Yoga improvers physical,

mental, emotional and social wellbeing, one more important aspects always remains left is economic health. Economic health is an also utmost required dimension as compared to the other dimensions of life. Many changes can be seen in the Yoga industry, for an instance it is seen earlier that Yoga practice started with the Yoga mat only but nowadays it extends up to the culture of Yoga studios through the utilization of different Yoga props and accessories for Yoga practice.

Keywords: *Yoga, Commercialization, Medical tourism, Boon, International Yoga day.*

COII/AS/230711

Kota Doria textile Heritage: A Study of Innovative Products and Techniques

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Kota Doria fabric belongs to Kota district of Rajasthan and it is also a textile heritage of India. Two different fibres cotton and silk are used to make this wonderful and unique fabric.It is a world fame sari of Kota and famous for its simplicity. These are three types of yarns is mainly used for making KotaDoria i.e., cotton, silk and zari. A very beautiful square check pattern is made by mixing cotton and silk thread. This textile fabric is comfortable in summer because of its light weight in wearing. Kota Doria is a world fame sari of Kota and famous for its simplicity. Only two traditional products sarees and suits are made from this wonderful fabric and only traditional process is adopted, so presently this hand loom weavers facing a challenging task for their existence. There has also been a change in the globalization of socio-economic condition, which has affected the demand for Kota Doria sarees. Consumers always demand some new products, new technologies and new designs. Innovative products and techniques of Kota Doria fabric are mentioned in this paper.

Keyword: *cotton, silk, wonderful, unique, square, check, challenging, globalization, existence*

COII/AS/230712

Contemporary Warfare and its impacts on National Security

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This paper will examine how contemporary warfare threats the sovereignty of Nation and we can see that whole Global world has been affected through rapid evaluation of cyberspace and many countries are changing their National Security Policies for eg Indian, Russia, Ukraine etc .Therefore National Security Policies are concerned with preventing wars through logic of deterrence. Then further it will focus on how Global terrorism is arising and creating a threat to the Global World .It seems like terrorists may do as much as damage with keyboard rather than guns. Is Nationhood feeling arising or depring? Contemporary warfare is framing internal as well

as external threats which ensures setorial needs and strengthening our foreign policies which ensures sovereignty and integrity of a nation state. How and why Nations are changing their National Security Policies to ensure their independence?

Keywords*: preserve national interests and safeguard sovereignty, territorial integrity, and unity, cyber security, affection on human existence, globalization*.

COII/AS/230713

An Empirical Study towards Achieving Inclusive Education in Context to New Education Policy 2020

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Inclusive education is important in the context of the New Education policy 2020 because it aims to provide equal access to education for all students, regardless of their background or abilities. According to New Education policy inclusive education means those students with disabilities. Those from economically disadvantaged background, not those belonging to marginalized communities are not excluded from the main stream education system. New Education policy focuses on the importance of providing quality education to all students. Inclusive education is a key aspect of achieving this goal. By ensuring that every student has access to education regardless of their individual differences. Inclusive education promotes diversity, equality and social justice. Inclusive education also benefits student without disabilities as it encourages them to learn in diverse environment, enhance their empathy and understanding towards others and prepares them for the diverse workforce. The new education recognizes the importance in schools and educational institute across the country. A step towards inclusive education would be a mile stone to achieve full literacy and equal opportunities for education.

Keywords: *Inclusive education, Diversity, Social justice, learning disabilities, New education policy.*

COII/AS/230714

Impact of Soft Skills on Modern Education

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The new changes in society have given birth to new development in education. This era doesn't appreciate the people who are hard workers; moreover, it has greatly changed the system of the professional courses in the current scenario. Organizations like to hire people who are resourceful, self directed with good communication skills. This paper will focus on modern soft

skills requirements in higher education with relation to the workplace. There is a need to change both the perspective of the management gurus and academicians all around the globe.

Keywords: *education process, self directed, resourceful.*

COII/AS/230716

Study on the $a_2^- \longrightarrow \pi^+\pi^-\pi^-$ Decay Mode

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Pile-up-effect associated with PMT (photomultiplier tube) are undesirable as these would affect the detection of the particles passing through the scintillator of the counter. This effect arises due todistortion of PCS (photo cathode surface)of PMT as a result of high rate effect, presence of accidentals and background effects resulting distorted output pulses.In this paper we present some results on the analysis of $a_2^- \longrightarrow \pi^+\pi^-\pi^-$produced in$\pi^- p \longrightarrow a_2^- p$ interaction near its production threshold incident pion beam momentum p_π. The results obtained are helpful in avoiding pile-up effects and found in good agreement with those of others as compiled by Groom et al.

Key words: *Meson, Pion, Backgrounds, accidentals, high-rate effect, branching ratio..*

COII/AS/230717

Historical Perspective & New Innovations on Inventory Management Control System

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In the present paper we are going to take a look on the historical perspective and new technologies and tools used for inventory control system. In supply chain management inventory control is a challenging problem. To fulfill customer demand , companies require to have sufficient inventories in stock meanwhile these inventories have holding costs and this is frozen fund that can be lost and burdens the company's account. Therefore, the task of inventory management is to find the quantity of inventories that will fulfill the demand, avoiding overstocks. In the present paper , an attempt is made to provide an up-to-date and complete review of existing literature, concentrating on descriptions of the characteristics and types of inventory control models that have been developed by Indian as well as Foreign authors.

COII/AS/230719

Analyzing the financial impact of Merger and Amalgamation of Regional Rural Banks

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Regional rural banks were established under the provisions of an ordinance passed on 26 September 1975 and the RRB Act 1976. RRBs are key financial institutions in rural areas. Establishing RRB aims to ensure sufficient banking and credit facility for agriculture and other rural sectors. The regional rural bank was created to meet the excess demand for institutional credit in rural areas. The RRBs mobilize deposits primarily from rural/semi-urban areas and provide loans and advances to small and marginal farmers, agricultural laborers, rural artisans, and other segments of the priority sector. The objective of this paper is to examine the progress of RRBs and tries to find out whether the past performance is having any impact on the future viability of RRBs. The present study considers the entire population rather than a few RRBs and for conducting the study the entire study period of 25 years is divided into 11 years of pre-amalgamation and 14 years of post-amalgamation and tries to analyze the factors influencing the performance of RRBs. The study is analytical in nature and makes use of secondary data. Statistical tools like 't-test" and "Mann Whitney Test" with the help of SPSS software are used for analysis and interpretation purposes. The study finds that RRBs performance has significantly improved after amalgamation.

Keywords: *Regional Rural Banks, Amalgamation, rural credit, deposit mobilization, NPAs, financial performance.*

COII/AS/230720

Assessment of various heavy metals in surface water of polluted site in middle stretch of river Ganga, Kanpur UP

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The aim of the present study is to identify different types of domestic wastes, leather tanning industries effluents etc. being discharged into the river Ganga, complete physic chemical analysis of river water and sewage into the water bodies leading to the entrophic condition in the river water. Special emphasis has been given on specific role of variety of pollutants, heavy metals coming through domestic wastes and industrial effluents on the chemistry of Ganga river water.

Keywords: *Pesticides, Pharmaceuticals, Turbidity, Microbial Pollution, Heavy metals*

COII/AS/230721

Physicochemical factors of the binary components of formamide/N-methylformamide with 2 chloroethanol at different temperatures

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The pseudo-Gruneisen parameter Γ, effective Debye temperature θ_D, acoustic nonlinearity parameter *B/A*, internal pressure P_{in} and isobaric thermal expansion coefficient α have been evaluated for binary liquid mixtures of formamide (FA) and N-methylformamide (NMF) with 2-chloroethanol (2Cl-OH) at 298.15 K, 308.15 K and 318.15 K, over the entire concentration range. The excess pseudo-Gruneisen parameter ΓE, excess effective Debye temperature $\theta_E{}^D$, excess nonlinearity parameter $(B/A)^E$, excess internal pressure PE_{in} and excess isobaric thermal expansion coefficient αE were also calculated. The calculated values are reasonably satisfactory with the experimental results on sound propagation data of liquid mixtures. These physicochemical parameters play an important role in understanding of the significance of anharmonic and nonlinear behavior with regard to intermolecular interactions in the liquid mixtures.

Keywords: *Pseudo-Gruneisen parameter; Debye temperature; molecular interactions; binary liquid mixture.*

COII/AS/230723

Studies on Molecular Association in Binary Liquid Mixtures of Poly(propylene glycol) monobutyl ether340 (PPGMBE 340) with Toluene, Benzene and Benzyl alcohol form Density, Viscosity and Refractive Index Data at 293.15, 303.15 and 313.15 K

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The density (ρ), viscosity (η) and refractive index (n) for the binary mixture of Poly (propylene glycol) monobutyl ether340 (PPGMBE 340) with Toluene, Benzene and Benzyl alcohol have been measured over the entire range of composition at 293.15, 303.15, and 313.15 K. Deviation in viscosity ($\Delta\eta$), excess molar volume ($V_m{}^E$) and deviation in molar refraction ΔR_m were used to investigate the intermolecular interactions present in the mixture. Various semi-empirical mixing rules proposed by Lorentz-Lorentz (L-L), Gladstone-Dale (G-D), Wiener (W), Heller (H), Arago-Biot (A-B), Newton (N), Eykman (E) and Oster (O), refractive index was also theoretically calculated. A comparative study has been made between the experimental and theoretical values of refractive index at all the three temperatures and results have been discussed in terms of average percentage deviation (APD).

Keywords: *Intermolecular interactions, Lorentz-Lorenz (L-L), Gladstone-Dale (G-D), Arago-Biot (A-B), average percentage deviation (APD)*

COII/AS/230725

A Novel Inhibitory Kinetic Spectrophotometric Method for the Determination of Ranitidine Hydrochloride

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A kinetic spectrophotometric method for the determination of ranitidine hydrochloride, based on its inhibitory effect on Hg(II) catalyzed substitution of cyanide ion, by 4-cyanopyridine in hexacyanoferrate (II) is described. Ranitidine hydrochloride ions form strong complexes with Hg(II) catalyst which is used as the basis for its determination at trace level. The progress of reaction was monitored, spectrophotometrically, at 477nm (λ_{max} of $[Fe(CN)_5CNpy]^{3-}$, complex) under the optimum reaction conditions at: $[Fe(CN)_6^{4-}] = 5 \times 10^{-3}$ M, [4-CNpy] = 2.5×10^{-4} M, $[Hg^{2+}] = 2 \times 10^{-5}$ M, pH = 2.8 ± 0.02, I = 0.02 M (KNO_3) and temperature = 25±0.1°C. A linear relationship obtained between absorbance (measured at 477nm at different times) and inhibitor concentration, under specified conditions, has been used for the determination of [ranitidine hydrochloride] in the range of 0.2 – 2.0 × 10^{-5}M with a detection limit of 5.2×10^{-7} M. The standard deviation and percentage relative standard deviation have been calculated and reported with each datum. A most plausible mechanistic scheme has been proposed for the reaction. The values of equilibrium constants for complex formation between catalyst–inhibitor (K_{CI}), catalyst–substrate (K_s) and Michaelis–Menten constant (K_m) have been computed from the kinetic data. The influence of possible interference by major cations and anions on the determination of ranitidine hydrochloride and their limits has been investigated.

COII/AS/230726

Challenges of Presentation Skills amongst the Students of Technical Education

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Communication is considered as the most powerful and resourceful medium of exchanging of ideas, information and knowledge. It is known as one of the finest skills to be acquired for overall personality development and professional growth. It is important to present one confidently and effectively in all spheres of technical and commercial organizations. There is a strong desire to accomplish effective presentation skills in the mind of every student. It is apparent that the technical students are facing a plethora of challenges in the process of development of presentation skills. It is observed that the students have the required information and knowledge but they lack the ability of expressing and presenting themselves in business

organization in digital era. The prominent challenges experienced by the students are fear, lack of self-confidence, poor vocabulary, lack of training the organs of speech, improper body language, problems with PowerPoint presentation and lack of exposure and practice. It is essential to enhance presentation skills of the student for the purpose of achieving the dream of Skill India movement initiated by Honourable Prime Minister, Shri Narendra Modi. The problems of technical students are to be identified by preparing questionnaires through Google Forms. The teacher has to be facilitator and mentor in order to inculcate the professional communication skills and make them employable as per the needs of the industry.
This research paper is an attempt to explore various challenges experienced by the technical students and provide suitable solutions for strengthening of presentation skills.

***Key Words**: Challenges, Presentation Skills, Professional World, Personality and Employability*

COII/AS/230727

NanoScience and Nanotechnology

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Nanotechnology plays an important role in advancing the cosmeceutical formulation by improving the solubility, stability, safety, loading efciency, and dermal permeability of the active ingredients. The aim of this review is to offer a comprehensive discussion on the application of various nanomaterials in improving cosmeceutical formulations used to treat hyperpigmentation. The role of cosmetic products is evolving in our society, with their use increasingly seen as an essential contribution to personal health. This suggests the necessity of a detailed application and uses of nanoparticles (NPs) in cosmetics. The aim of the present work is to offer a critical and comprehensive review discussing the impact of exploiting nanomaterials in advanced cosmetic formulations and application of nanotechnology in cosmetics. The availability of various depigmentation active ingredients for skin hyperpigmentation disorder, none of them are completely satisfactory due to their poor permeability through the skin layer and signifcant toxicity, thereby causing severe side efects such as irritative dermatitis, itching, and skin faking. Nanotechnology has been demonstrated to improve the performance of cosmetics in a number of different ways: 1) increasing both the efficiency and dermal penetration of the active ingredient, 2) controlling drug release, 3) enhancing physical stability, 4) improving moisturizing power, and 5) providing better UV protection. Nanotechnology plays an important role in advancing the cosmeceutical formulation by improving the solubility, stability, safety, loading efciency, and dermal permeability of the active ingredients. The aim of this review is to offer a comprehensive discussion on the application of various nanomaterials in improving cosmeceutical formulations used to treat hyperpigmentation.

COII/AS/230728

Paradigms of Traditional and Digital Marketing amongst College Students and Women

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Marketing plays an important role in the development of all the business organizations. It is the process of conducting various activities in order to promote and sell products and services. It is apparent that traditional marketing is the offline marketing strategy used to sell goods and services. It basically deals with reaching to the target audience by making use of newspaper advertisements, billboards, television, and radio advertising. Traditional marketing is also known as print marketing. It is mainly dependent on print media and broadcast media. There is a possibility of delayed feedback in broadcast media. It is the vision of every business organization to achieve maximum sell and profit through marketing strategies.

Digital era has changed the perception of marketers. As people are more often getting engaged in social media applications like WhatsApp, Facebook, LinkedIn, and many others. Digital marketing is also called as 'online marketing', 'web marketing' or 'Internet marketing'. Digital marketing is promotion of products or brands through electronic media such as Facebook or WhatsApp or Telegram groups, blogs, mobile, and websites. Street shopping is the favourite part of female and youth daily life. But now a days both are directed towards e-shopping.

This research paper is an attempt to explore various dimensions of traditional and digital marketing experienced by the college students and women.

Keywords: *Traditional Marketing, Digital Marketing, E-shopping, Social Media Applications*

COII/AS/230729

Analysis of Ground Water and its impact on human health: A Case study from Gaya, Bihar.

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Purest form of natural resource of water is groundwater. In recent years number of causes gives adverse effect on its quality. In developing area (like, Gaya Bihar) quality of groundwater shows its impact on health condition of human being. Measurement of water quality on the basis of physical, biological and chemical parameters and its comparison with parameters given by WHO has been done by using scientific methods. The selected area shows a deviation of water quality in certain parameters due to various reasons like industrial waste, excess use of pesticides, improper disposal of toilet waste etc. resulting increase in related diseases for common local people. Early indications may be help authorities to plan, administered and manage their policies and decisions.

Key words: *Ground water, water quality parameters, monitoring networks, Groundwater pollution.*

COII/BT/230701

Bio-nanotechnology is the solutions for future

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Bio-nanotechnology is the term that came in the existence through the combination of various aspects of nanotechnology and biology. In this new emerging field of technology, we applied tools of nanotechnology to give effective, long term and sustainable solution for many biological problems. Bio-nanotechnology usually involved manipulation of various specific materials that ranges from micrometer (μm) to nanometer (nm) with the machinery of living beings, so that their outcomes are beneficial for the society. Outcomes can be in the terms of quantitative analytical tools that give an idea of "how does the cell act at the molecular level". Also help us to understand the mechanism of the disease and target it effectively and how we can modify ex-vivo and improvement in current laboratory techniques .As well as better drug delivery systems. The basic idea, behind the combination of two fields is to increase the effective interaction among various bio-susceptible materials and how they can be beneficial for the living beings However; bio-nanotechnology does have many potential and ethical issues associated with it. Beside that this chapter tries to cover basic techniques of biotechnology along with the principles of biology applied at nano-scale which not only allow scientist to imagine but also they can create a new healthy system that can be used for biological research and make promise with the future to give cheap and targeted drug delivery system that can be more effective and efficient.

Keywords*: nanotechnology, biology, micrometer (μm), nanometer (nm), various bio-susceptible materials, ex-vivo, delivery system.*

COII/BT/230702

Bioremediation-Remedy to clean oil spills or pollution

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Bioremediation is a process of using living organisms to degrade, transform or remove environmental contaminants such as oil spills or pollution. Bioremediation is an environmentally friendly and cost-effective technique that has been gaining increasing attention for cleaning up oil spills and pollution in recent years. Oil spills are one of the most common types of pollution that threaten the environment and marine life. The negative impacts of oil spills on the environment and wildlife can be devastating and long-lasting. Oil spills can lead to the death of marine animals; contaminate the water and soil, and cause long-term damage to ecosystems. Bioremediation offers a natural and sustainable solution for cleaning up oil spills and preventing further damage to the environment.

The process of bioremediation involves the use of microorganisms such as bacteria, fungi, and algae that can break down the oil components into harmless byproducts such as carbon dioxide and water. These microorganisms can be found naturally in the environment or can be introduced to the contaminated area. The success of bioremediation depends on several factors such as the type and amount of oil spilled the environmental conditions such as temperature, oxygen levels, and pH, and the type of microorganisms used. There are two types of bioremediation techniques that can be used to clean up oil spills:

- In-situ bioremediation and ex-situ bioremediation. In-situ bioremediation involves the use of microorganisms to degrade the oil in the same location where the spill occurred. This method is typically used in situations where it is difficult or impossible to remove the contaminated soil or water.
- Ex-situ bioremediation involves the removal of contaminated soil or water from the site and treating it in a controlled environment such as a bioreactor. This method is often used when the contamination is too severe for in-situ bioremediation to be effective.

Bioremediation has several advantages over traditional cleanup methods. First, it is a natural and sustainable method that does not involve the use of harmful chemicals or mechanical processes that can further damage the environment. Second, it is often more cost-effective than traditional cleanup methods, especially in situations where the contamination is widespread and the cleanup process is complex. Finally, bioremediation can often be completed more quickly than traditional cleanup methods, allowing the affected area to be restored to its natural state more quickly.

Bioremediation can be a promising technique for cleaning up oil spills and pollution. By using natural microorganisms to break down the contaminants, bioremediation offers a sustainable and cost-effective solution that can help prevent further damage to the environment and protect wildlife. While bioremediation is not suitable for all types of contamination, it has the potential to become a leading solution for cleaning up oil spills and pollution in the future.

***Key words**: Bioremediation, oil spills, incineration, sustainable, microorganism, bacteria, fungi, algae, pH, in-situ bioremediation and ex-situ bioremediation.*

COII/BT/230703

Application of Biotechnology in Vaccine

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Vaccines are an important part of modern medicine, helping to prevent a wide range of diseases and illnesses. Biotechnology has played a significant role in the development of vaccines, and has helped to make them more effective and efficient. Vaccines work by stimulating the body's immune system to recognize and fight off harmful pathogens, such as viruses and bacteria. They typically contain a weakened or inactive form of the pathogen, or a small piece of its genetic material, which is used to trigger an immune response. This response allows the body to produce antibodies that can recognize and neutralize the pathogen if it is encountered again in the future.

Biotechnology has helped to improve the effectiveness of vaccines by allowing researchers to manipulate and modify the genetic material of pathogens. This has led to the development of new types of vaccines, such as mRNA vaccines, which use a small piece of genetic material from the virus to trigger an immune response. mRNA vaccines have been used to develop highly effective COVID-19 vaccines. These vaccines use a small piece of genetic material from the virus that causes COVID-19 to trigger an immune response. Unlike traditional vaccines, which use a weakened or inactive form of the virus, mRNA vaccines do not contain any live virus, making them safer for people with weakened immune systems. Another example of biotechnology in vaccine development is the use of recombinant DNA technology. This involves combining the DNA of two different organisms to produce a new, hybrid DNA molecule. Recombinant DNA technology has been used to develop vaccines for diseases such as hepatitis B and HPV. Biotechnology has also helped to make vaccine production more efficient. Traditional vaccine production methods involve growing large quantities of the pathogen in culture, which can be time-consuming and expensive. Biotechnology has allowed researchers to use cell cultures to produce vaccines, which is faster and more cost-effective.

Key words: *Vaccines, Biotechnology, immune system, harmful pathogens, viruses' bacteria, mRNA vaccines recombinant DNA technology, hepatitis B and HPV.*

COII/BT/230704

Revolutionizing Biotechnology with Artificial Intelligence

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Artificial intelligence (AI) is rapidly transforming many industries, including biotechnology. With its ability to process and analyze vast amounts of data, AI is poised to revolutionize the field of biotech, unlocking new insights and discoveries that were once impossible to achieve. One of the key areas where AI is making a significant impact in biotechnology is drug discovery. Historically, the process of developing new drugs has been time-consuming and expensive, with many potential candidates failing in clinical trials. However, with the use of AI algorithms and machine learning, researchers are now able to analyze massive amounts of data on chemical compounds and their interactions with biological targets, in order to identify potential drug candidates more quickly and accurately. This has the potential to significantly speed up the drug development process, while also improving the success rate of new drugs.

Another area where AI is being used in biotech research is in the analysis of genomic data. With the rapid expansion of DNA sequencing technologies, there is now an abundance of genetic data available for analysis. However, the complexity of this data can make it difficult to identify patterns and insights that could be useful for drug development or genetic engineering. By using AI algorithms to analyze genomic data, researchers are able to identify potential targets for drug development, as well as gain insights into how different genes interact with each other to produce specific traits or diseases. AI is also being used to model complex biological systems, such as protein folding or metabolic pathways. By simulating these systems using AI models, researchers are able to gain insights into how they function and identify potential targets for drug development or genetic engineering. For example, AI algorithms have been used to identify novel enzymes that can break down plastics, which could have important applications for

reducing plastic waste and pollution. However, there are also challenges and concerns associated with the use of AI in biotech. One of the main concerns is the potential for AI algorithms to perpetuate biases or make errors that could harm patients. There are also concerns around data privacy and security, as well as the potential for AI to replace human decision-making in certain areas of biotech research. Despite these challenges, the potential benefits of AI in biotechnology are vast. With ongoing research and development, AI has the potential to transform the field of biotech, unlocking new discoveries and treatments that were once unimaginable. As such, it is important to continue to explore the responsible and ethical use of AI in biotech, while also investing in the necessary infrastructure and resources to support this rapidly evolving field.

Key words: *Artificial intelligence (AI), biotechnology, drug discovery, clinical trials AI algorithms, biological targets, DNA sequencing technologies, enzymes.*

COII/BT/230705

Application of biotechnology - Agriculture sector

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With the world population over 8 billion till now and it would be 11billion in 2024. Due to population explosion, we will need new technologies in the agriculture sectors. So, that to fulfill sufficient need has people on time and also maintained the quality also. Agricultural biotechnology, also known as Agritech, is an area of agricultural science involving the use of scientific tools and techniques, including genetic engineering, molecular markers, molecular diagnostics, vaccines, and tissue culture, to modify living organisms: plants, animals, and microorganisms. Using tissue culture technique, unlimited numbers of plants are being propagated from a single plant possessing the desired characteristics. Bio-technology can also be used to utilize the ability of nitrogen fixing bacteria like *rhizobium azobaster*, *Clostridium* and blue-green algae. Biotechnology methods can be used for development of hybrid seeds which are capable of performing better than previous one.

The applications of biotechnology in food include areas like efficient storage by eliminating pests and rodents, pest control which include the use of biological control agents, attractants, increasing nutritive value of food, enhancement of flavor, single cell protein for human consumption, fermented foods though enzyme engineering i.e. wine, beer etc. Development of tests for detection of food contaminating micro organisms and toxins. Agricultural biotechnology has the potential to advance crop productivity production enhancement and improve food security at global level.

Keywords: *Agricultural biotechnology, genetic engineering, molecular markers, molecular diagnostics, vaccines, and tissue culture etc.*

Chapter-2

Abstracts

SECTION: CSE/IT

Computer Science and Engineering

Information Technology

COII/CSE_IT/230701

Detection of Early Stages of Parkinson's Disease: A Comprehensive Review

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Parkinson's disease (PD) is one of the most common neurodegenerative diseases. PD is a progressive neurological disorder associated with motor and non-motor features. According to a study, India has 7 million elders afflicted with Parkinson's by 2021.There are no set of specific tests that exist to diagnose PD. A neurologist generally reviews symptoms and relevant medical history of the patient to either rule out the possibility of PD or suggest therapies/measures to cope with it.PD severely effects quality of life of a PD patient. Early detection and treatment can help to relieve the symptoms of PD.Traditional diagnostic approaches may suffer from subjectivity as they rely on the evaluation of movements that are sometimes subtle to human eyes and therefore difficult to classify, leading to possible misclassification. Early non-motor symptoms of PD may be mild and can be caused by many other conditions and thus may be skipped by patient and they may not report them to physician. Therefore, these symptoms are often overlooked, making diagnosis of PD at an early stage challenging. To address these difficulties and to refine the diagnosis and assessment procedures of PD, machine learning methods have been implemented for the classification of PD and healthy controls. In recent years, the number of publications on the application of machine learning to the diagnosis of PD has increased. Although previous studies have reviewed the use of machine learning in the diagnosis and assessment of PD. In this study, we conducted a literature review of studies published until February 08, 2023, using the PubMed and IEEE Xplore databases. Papers from last five years were extracted and are includedfor relevant information in this review, with an investigation of their aims, sources of data, types of data, machine learning methods and associated outcomes. These studies demonstrate a high potential for adaptation of machine learning methods and novel biomarkers in clinical decision making, leading to increasingly systematic, informed diagnosis of PD. This study will serve as state-of-the-art study for researchers working in this domain.

Keywords*: Parkinson's Disease (PD), Early-stage detection, Machine learning*

COII/CSE_IT/230702

Fuzzy knowledge-based System using Genetic Algorithm

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Fuzzy rules and various fuzzy membership functions are typically retrieved in knowledge-driven or data-driven methods in most GIS research studies. The approaches chosen will determine how

accurate and high-quality the landslide danger maps will be. In order to enhance the accuracy and dependability of these maps, it is therefore required to further refine existing techniques. This research paper gives brief information about fuzzy logic-based systems, their applications pros and cons, and fuzzy logic implementation using genetic algorithms. It describes different methodologies of genetic algorithms and their implementations.

***Keywords**: - Fuzzy logic, Genetic algorithms, fuzzy membership, accuracy*

COII/CSE_IT/230703

An Overview of Machine Learning Algorithms for Disease Diagnostic

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In Disease Diagnosis acknowledgment of examples is so significant for recognizing the illness precisely. AI is the field which is utilized for building the models that can anticipate the yield dependent on the inputs which are connected dependent on the past information. Sickness distinguishing proof is the most essential errand for treating any ailment. Order calculations are utilized for ordering the infection. There are a few order calculations and dimensionality decrease calculations utilized. AI enables the PCs to learn without being altered remotely. By utilizing the Order Algorithm a speculation can be chosen from the arrangement of choices the best fits a lot of perceptions. AI is utilized for the high dimensional and the multi-dimensional information. Tasteful and programmed calculations can be created utilizing Machine Learning.

***Keywords-** Machine Learning, Machine Le*

COII/CSE_IT/230704

Plant Disease Detection and its Health Monitoring

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It is well known that agriculture plays a vital role in the country's economy but now-a-days insects or some other natural calamities has become major challenge for these crops or plants, which are getting infected by diseases that can't be recognize by our naked eyes. But these unidentified and undiscovered diseases have major impact on the productivity of the agriculture. The study reported here is about the use drones to monitor a plant's health and identify any diseases that it may have, in order to have better cultivation, that may add to the growth of economy of our country. We have developed a CNN model using Keras, Tensor Flow, or PyTorch. Performance of the model is evaluated by using appropriate evaluation metrics, such as precision, recall, and F1 score. Complete study and analysis of the implementation and application is reported in this paper.

***Key words**: Drone, Arduino, CNN model, Keras, TensorFlow, PyTorch, etc*

COII/CSE_IT/230705

A review of SLA framework for Cloud Computing

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This paper presents a comprehensive review of Service Level Agreement (SLA) frameworks for cloud computing. SLAs have become an essential tool for ensuring the quality and reliability of cloud based services and applications. In this review, we examine the different types of SLAs and their key components and features including performance metrics, service level objectives and penalty mechanisms. We provide a comparative analysis of major provider centric and customer centric SLA frameworks highlighting their strengths and limitations. We also discuss the challenges of SLA management and enforcement including monitoring reporting and penalties. Furthermore, we explore emerging trends and developments in SLA frameworks such as the use of machine learning and artificial intelligence. Our review emphasizes the importance of SLA frameworks in supporting cloud service provider and users, underscores the need for standardized and interoperable SLA frameworks. We conclude with recommendations for future research and practice in this field including the need for comprehensive SLA frameworks that take into account the full range of cloud services and applications.

COII/CSE_IT/230706

Evolution of Enterprise Data Warehouse in Business Intelligence

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As of now data warehouse tool played a vital role in dealing with business scenarios and maintaining sets of key values via decision and deliberate more effectively. The more extensible understanding of this will be reviewed by a case study of business scenario and efficiently using an ETL tool Informatica to analyse the sets of records and providing a business justification on it. Therefore, this review paper will be divided into multiple segments in which the the vary first task will be to state an architecture of enterprise datawarehouse system and it's underlying applications. Along with this we will use set if transformations to have a clear view of data sets taken for case study. Thus, business intelligence will be justified and enhance the business development within an organization. Most importantly, few of the crux can be sorted out from the huge and unsorted database with clear view and understanding towards stakeholders point of

view. Over the years, there were counts of automation happened in building up data to meet the requirements in accordance with business sets. At last, this thesis provides an overview of the evolution of enterprise datawarehouse in business intelligence,an ultimate future trending technology leading towards an effective and efficient business management.

Keywords : *Enterprise data warehouse, business intelligence, ETL and Informatica*

COII/CSE_IT/230707

A Critical Review on Heart Disease Prediction System based on Machine Learning Algorithms

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The prevalence of heart disease is progressively rising today and is leading to a high death rate. Additionally, as technology, high computing devices, and smart health devices continue to advance and generate massive amounts of data daily, researchers have been able to use a variety of machine learning algorithms to predict the likelihood of developing heart-related diseases with increasing accuracy. The paper presents an in-depth review of the application of machine learning algorithms used for heart disease prediction systems from last 8 years. The paper reviews various research studies, which employed machine learning algorithms for the diagnosis and prediction of heart diseases. The review is focused on the comparative analysis of different algorithms used for the prediction of heart disease, including support vector machine, decision trees, artificial neural networks, and logistic regression and many more. The paper also discusses the dataset used in these studies, feature selection, and evaluation metrics. The review highlights the advantages and limitations of each algorithm and identifies gaps in the research. Overall, the paper provides a comprehensive analysis of the recent advancements in heart disease prediction using machine learning algorithms, which could assist researchers and medical practitioners in selecting the appropriate algorithm for heart disease prediction.

Keywords: *Heart Disease, Support Vector Machine, Decision Tree, ANN and logistic Regression.*

COII/CSE_IT/230708

Network Security

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Network security is a critical aspect of modern information technology, as it plays a vital role in protecting sensitive data and ensuring the integrity of communication networks. This abstract provides an overview of network security, including its definition, importance, and challenges. Network security refers to the set of technologies, processes, and policies designed to safeguard computer networks from unauthorized access, data theft, and other malicious activities. It encompasses various aspects such as encryption, firewalls, intrusion detection systems, and

access control mechanisms. The importance of network security cannot be overstated, as cyber-attacks have become increasingly sophisticated and frequent in recent years. These attacks can cause significant financial losses, damage to reputation, and even put human lives at risk in critical infrastructure systems. Even if the sender and receiver are able to authenticate each other, they also want to insure that the content of their communication is not altered, either maliciously or by accident, in transmission. Extensions to the check summing techniques that we encountered in reliable transport and data link protocols. However, network security also presents several challenges, including the complexity of modern networks, the need for constant updates and monitoring, and the difficulty of balancing security with usability and convenience for end-users. Despite these challenges, organizations must prioritize network security to protect their sensitive information and maintain their operations' continuity. Implementing a comprehensive network security strategy can help mitigate risks and safeguard against potential threats, providing peace of mind and confidence in the safety of critical systems. Network security includes a wide range of technologies and techniques, such as firewalls, encryption, intrusion detection and prevention systems, virtual private networks (VPNs), and access control mechanisms. These technologies are used to secure network communication, prevent data leakage, and ensure the confidentiality, integrity, and availability of network resources. In summary, network security is a critical component of any organization's overall cyber security strategy, and it plays a vital role in safeguarding the confidentiality, integrity, and availability of network resources and data.

COII/CSE_IT/230709

A Review of Object Detection Algorithms Based On Deep Learning

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With the rise of facial detection, autonomous vehicles, smart video surveillance, and various people-counting applications, the demand for fast and accurate object detection systems is also rising day by day. Object detection or target detection has become an important research hotspot in past years and is being widely used in various applications. The main aim is to quickly identify and locate a large number of objects in an image or a video. This article presents a review of object detection algorithms. Firstly, computer vision and object detection are summarized and introduced. Then, some commonly used deep learning methods, R-CNN, Fast R-CNN, Faster R-CNN, R-FCN, SSD and YOLO are selected for analysis and introduction. At the end of the article, various applications and challenges of object detection algorithms are also discussed.

COII/CSE_IT/230710

Technical Challenges to Automated Detection of Toxic Language

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Online platforms are increasingly being used as communication tools. Despite the obvious benefits of expanded content sharing, disturbing toxic communication, such as cyber bullying and harassment, has developed during the past ten years. However, because it is multifaceted and context-dependent, online toxicity can be challenging to spot as, these identification techniques show a reliance on extremely provocative phrases, such slurs and profanity. Due to the importance of the issue, research into the automatic detection of abusive language has grown and advanced. Since exposure to online toxicity can have significant social implications, reliable models and algorithms are required for recognising and evaluating such communication throughout the expansive and growing realm of social media. We comprehensively characterise the conceptual traits of conflictual online languages in this paper, and also discuss the technical challenges in automatic detection of toxicity.

Keywords: *toxic content, hate speech, machine learning, natural language processing, cyber bullying, offensive language.*

COII/CSE_IT/230711

Internet of Things (IoT) Based Smart Environments: Security Risks and Solutions

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Several advantages, such as comfort, convenience, energy efficiency, safety, automation, and service quality, are offered to users of smart environments. One of the extensively utilised technologies in smart environments is the Internet of Things (IoT). Security issues in IoT-based systems and devices are the source of many security attacks and threats, which might impact applications used in smart environments. Security is therefore one of the most crucial challenges in any IoT-based smart environment or region. The four layers of the IoT architecture for smart environments' four layers are highlighted in this article along with the primary security concerns and solutions. It also examines a few of the most recent methods for guaranteeing data security in apps for smart settings.

Keywords: *Internet of Things (IoT), Smart Environmental, RFID, Security Threats, Blockchain.*

COII/CSE_IT/230712

Machine Learning Techniques for Analyzing Social Media Behavior

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There are a many of websites for interpersonal communication in the modern era, including Facebook, Twitter, Instagram, microblogs, Wikipedia, in addition to Web-based data and applications, like tweets and posting different views and opinions on various topics, issues, and events in many applications, as well as different domains like business, economy, politics, sociology, etc., which are the result of providing enormous opportunities for studying and examining human viewpoints. The goal of sentiment analysis is to classify data into positive, negative, or neutral categories and identify a speaker's or writer's opinion towards specific events or themes. The data for this research was gathered, pre-processed, and evaluated. Following that, groups of people were created using machine learning and deep learning methods. Neural networks and other machine learning techniques were used to analyze the data from users' social networks, with the K-means grouping algorithm being used to group users by preferences.

Keywords: *Sentiment Analysis, Machine Learning, K-means, Clustering, Pre-Processed*

COII/CSE_IT/230713

Empirical Study of Artificial Intelligence of Things (AIoT)

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The Internet of Things (IoT) is a system of interconnected gadgets with built-in sensors that may produce or gather enormous volumes of data. Artificial intelligence may then be used to analyses the data and solve issues or make judgments. On the other hand, as connected devices become more prevalent, a vast amount of data is produced that must be evaluated in order to yield actionable insights. The new degree of processing capacity at the edge enables near real-time insight from data gathered, aiding in making data-driven decisions, by transferring data back and forth to servers and other smart computing operations. A new paradigm called Artificial Intelligence of Things (AIoT) focuses on solutions that harness the processing capacity of Internet of Things (IoT) gadgets to make use of AI in system operations. The phrase Artificial Intelligence of Things (AIoT), which combines the well-known acronyms Internet of Things (IoT) and Artificial Intelligence, has lately acquired popularity (AI). In this study, we perform an empirical evaluation of the environment, challenges, and potential applications of artificial intelligence (AI) for Internet of Things (IoT)in the real world.

Keywords: *Internet of Things (IoT), Artificial Intelligence of Things (AIoT), Devices, Sensors. Artificial Intelligence (AI).*

COII/CSE_IT/230714

Machine Learning-Based Crowd Behavior Analysis

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Several study fields have investigated human behavior analysis (e.g. sociology, psychology, computer science). Understanding the actions of its members in an automated way remains a challenging problem, despite advances in sensor systems, machine learning, and deep learning. This article's objective, given the subject's breadth, is to assess the state of the art, with a focus on machine learning and object tracking as sensor systems for artificial intelligence techniques. A research comparing the degree of generalization in terms of activity duration is also lacking in the literature. This paper provides an overview of machine learning-based methods and approaches for categorizing group behavior in picture sequences. The evaluation takes into account both the size of the group and the varying levels of comprehension.

Keywords: *Human Behavior Analysis, Motion Analysis, Machine Learning, Crowd Analysis, Computer Vision.*

COII/CSE_IT/230715

A Novel Method for Identifying Hand Gestures

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The importance and use of artificial intelligence are growing as the twenty-first century progresses. Recognition of hand gestures, which is related, is developing to bring technology closer to the real world. With improvements in computer vision, hand gesture recognition is now widely used in robot control, intelligent furniture, gaming, and other applications. Hand gestures carry a multitude of information. With the advent of better PC vision calculations and advancements in human computer interface, hand gesture detection is becoming more and more crucial. Interfaces that can identify human body movement and connect it to useful information are highly desired. Calculations for image division are essential for choosing motion shapes and directions. Visual nonverbal hand gestures are used to convey information. This data may be recognized using a number of techniques, including electrical, glove, marker, and others. This study looks at a number of hand gesture strategies, such as loading gesture photos and identifying and localizing contours. To create the best feature vector, it additionally employs PCA and

Tropical Convolutional Neural Networks (TCNNs).

Keywords: *Neural Network, RBF Kernel, SVM, Hand Gesture, Tropical Convolutional Neural Networks (TCNNs).*

COII/CSE_IT/230716

Phishing URL Detection Using a Neural Network Improved by a Genetic Algorithm

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On the Internet, there are many different types of scams. Anybody can experience an assault when using the internet. Criminals are becoming more and more prepared to utilize social engineering as a tactic to unfairly get sensitive data by preying on human weaknesses. These hackers use the social engineering method known as phishing. It is used to collect personal data so that identity thieves may take people's identities secretly. The basis of a successful attack is these thieves' capacity for persuasion. In this study, data mining is employed as a fundamental method to acquire, map, and model components that would result in the automatic identification of phishing Websites. In this sense, it is presumable that the patterns already present in a URL allow for differentiation between the legitimate link for pages, and the discovery of these patterns will serve to model a successful classification method, for which the attributes found in the database "phishing web" that correspond to these patterns will be used. Algorithms that were taken from the literature and improve record classification will be examined concurrently. Eventually, a model with the maximum degree of precision is given; it consists of a neural network classifier that has been genetically improved.

Keywords: *Neural Network (NN), Optimization, Genetic Algorithm, Phishing URL, Feature Extraction.*

COII/CSE_IT/230717

Using Novel Local Binary Pattern Histogram (LBPH) Methods for Face Matching

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-In the modern world, using facial recognition to distinguish oneself from others is a frequent biometric practise. Systems for facial recognition must thus be quick and precise enough to function in real time. Face naming's goal is to identify each face's proper name from a collection of pictures where each picture contains a variety of faces and is tied to a few names in the appropriate description.With social web portals and social networks, where other users may tag and comment on the images, web users are encouraged to upload their photos online. Social media platforms are used by many people to share their photos and posts. While many of the tags on these posts and images include correct names, many do not, making it challenging for an unidentified person to understand the names. A face recognition system based on the Local Binary Patterns Histogram method is suggested in this study. It makes a dimly illuminated image more helpful since it can tell apart front and side faces. Such a facial recognition system might be employed for a range of tasks, such as crowd and airport monitoring, private security, etc.

Keywords: *Face Matching, Local Binary Pattern Histogram(LBPH),Feature Extraction, Classification, Texture Descriptor.*

COII/CSE_IT/230718

Making Smart Places Smarter by Using Internet of Things (IoT) Devices

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Internet of Things (IoT) is evolving into a cutting-edge technology as internet usage increases.The Internet of Things (IoT) is a sort of "universal worldwide network" that joins various items like smartphones, laptops, notepads, etc.The Internet of Things (IoT) is a cleverly interwoven system that communicates with other machines, environments, objects, and networks. It consists of intelligent machines that use RFID and sensor network technologies.People use email, webpages, and other online tools in every business, but in many nations, data can be transmitted between mobile devices and the internet using simpler, quicker, and less expensive methods. This paper's primary goal is to provide a comprehensive analysis of the Internet of Things (IoT) and all its uses, including in the fields of health, municipal planning, business, transportation, and smart buildings. Researchers who want to conduct study on the Internet of Things can also benefit from this paper.

Keywords: *Internet of Things (IoT), Smart Environmental, RFID, BigData,Sensor Network.*

COII/CSE_IT/230719

"I-Vote" Android Application for Internet-Voting

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Internet voting has become a very important and popular topic in today's time. Because in many countries like Estonia, Switzerland, UK, France, Spain etc are used internet voting for his government elections. Internet voting system have gained popularity and have been used for government election in other countries. And it is totally paper less voting. But in our country even today voting is done through electronics machines and paper, which is very difficult for peoples. Using electronics machines and paper voting occur many problems and crimes, such as long queues for voting, time wasted in voting, maximum paper wastage, health problems, vote theft, voting machine errors, etc. It discusses how to reduce these problems and crimes, and how to provide better security and privacy for a better election. This case study discussed how these technologies can be integrated and used to develop an application that provides better functionality and helps reduce crime in our society Several existing and new application models were explained. Through this application, we are trying to solve the problem that people are facing. This application is totally paperless and user friendly.

Keywords*: Block chain, Android application, Web application, Cloud computing*

COII/CSE_IT/230720

IOT and AI in Healthcare Systems- Case Study

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The Internet of Things (IoT) and Artificial intelligence (AI) are two of the fastest-growing technologies in the world. The integration of both the technologies has tremendous prospects in smart healthcare system. The advancement of AI in the form of deep learning brought a revolution in automatic classification and detection systems. Next-generation wireless communications such as 5G networking brought speed and the seamless transmission of data. With the convergence of all these technologies, the smart healthcare sector is currently booming. Particularly during the post-COVID-19 pandemic, the necessity of smart healthcare has come to light more than ever before.

The idea is based on transforming the healthcare sector by increasing its efficiency, lowering costs, and putting the focus back on a better patient care system. Implementing IoT and AI for healthcare monitoring systems require a deep understanding of different frameworks . These frameworks occur in the form of underlying technologies, devices, systems, models, designs, use cases, and applications. The IoT-based Health monitoring system mainly employs both AI and machine learning (ML) by gathering different records and datasets.

On the other hand, ML methods are broadly used to create analytic representations and are incorporated into clinical decision support systems and diverse healthcare service forms. After carefully examining each factor in clinical decision support systems, a unique treatment, lifestyle advice, and care strategy are proposed to patients. The technology used are to support healthcare applications and analyze activities, body temperature, heart rate, blood glucose, etc. This paper provides a survey that focuses on the identification of the most relevant health Internet of things (H-IoT) applications with AI and Machine Learning emerging technologies.

Keywords: *Internet of Things, AI, Healthcare System, Machine learning*

COII/CSE_IT/230721

Importance of Software Testing in the Process of Software Development

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Software Testing is the process to check whether the software is defect- free or not. It is the process of verification and validation of software service or application by checking whether it is meeting the user requirements and what all is implemented as per the characteristics. Software testing plays a vital role in the process of developing a high quality software. Testing is necessary because we all make mistakes. Some of those mistakes are unimportant but some of them are expensive and dangerous. Therefore, there is a need to check everything that we produce. Hence, this paper presents an introduction to Software Testing and its importance with strong exemplary illustrations. It not only provides a vivid account of the need, objectives and principles of testing but also summarises traits of an excellent Software tester. At last, this paper includes a comparative study of present scenario of software testing with regard to testing in early days. Moreover, this paper focuses on "Why to test" not How to test, so that the need of carrying out Software testing can be crystal clear in a more effective manner.

COII/CSE_IT/230722

Adoption of Green Computing in Indian IT Industry

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Green computing is the new approach of design, develop and use of sustainable computing system with minimal or no hazard to environment. One of the early initiatives was energy labeling program of Environmental Protection Agency (EPA) USA in 1992. Energy star labeling program aimed to promote energy efficiency in computing hardware and other type of appliances. Green computing strategies include Reduce, Recycle and Reuse (RRR) of available computing infrastructure. Organizations that employ green computing deploy energy efficient

servers, CPUs, peripherals and power systems. They also focus on reducing resource usages and e –waste .European countries and USA has adopted various strategies to design and develop eco friendly computing hardware and software systems. However we need to study the trends of green computing adoption in Indian IT Industry. This research paper aims to study trends of green computing in India.

Keywords: *Green Computing, carbon footprint, e-waste, data centers, EPA.*

COII/CSE_IT/230723

Performance Enhancement of Emotion Detection Using Text From Wassa Data-Set

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Nowadays, text devices are the primary means of communication and interactions. Extracting emotions from text has become a crucial research area in Natural Language Processing due to its practical utilities in Human-Computer Interaction, recommendation systems, online education, data mining, and more. However, one of the challenges in emotion extraction from text is irrelevant feature extraction, which can lead to mis-prediction of emotions. To overcome this issue, this project proposes an Emotion Detection Model that extracts emotions at the sentence level. To create a well-balanced dataset, we add a neutral class to a benchmark dataset consisting of four emotions (fear, sadness, joy, and anger). We then investigate the use of Support Vector Machine (SVM) and Bidirectional Encoder Representations from Transformers (BERT) for emotion recognition on this extended dataset. Our proposed ensemble model, which combines the two models, achieves a state-of-the-art accuracy of 0.91 on emotion recognition in tweets. These findings show the effectiveness of our approach and its potential for improving emotion detection in various applications.

COII/CSE_IT/230724

Spam Ham Mail Detection Using Machine Learning Algorithm

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Nowadays, everyone wants to save time and cost, thus sending and receiving emails has become the most common tool for business communication, all of us send and receive some type of emails based on our daily activities. But using this tool people spread some unwanted information called Spam. To get rid of it, a lot of algorithms has been developed for its classification into ham & spam, still none of the proposed algorithms give more accurate results. In this paper, Machine Learning algorithm implemented and get the efficient result from the algorithm. In the process, feature construction and feature selection are applied over the dataset to extract relevant features. After that classification algorithms are applied and best classifier is obtained based on the error rate, precision and recall value for the individual algorithm.

COII/CSE_IT/230725

Review of Driver Behavior Monitoring Using Tools of Deep Learning and Fuzzy Inferencing

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Driving in busy highways and roads is becoming complex and challenging, as more cars are hitting the roads. Safe driving requires attentive drivers, quality perception of the environment, awareness of the situation, and critical decision making to react properly in emergency situations. This paper provides an overview on driver safety monitoring systems. We study various driver sources of inattention while providing a comprehensive taxonomy. Then, different safety systems that tackle driver inattention are reported. Furthermore in this review paper, we present the new generation of driver monitoring systems within the context of Internet of Cars. Thus, we introduce the concept of integrated safety, where smart cars collect information from the driver, the car, the road, and, most importantly, the surrounding cars to build an efficient environment for the driver. We conclude by highlighting issues and emerging trends envisioned by the research community.

Keywords: *driving, accidents, emerging trends, Internet of Cars, monitoring systems.*

COII/CSE_IT/230726

Breast Cancer Ascertain Using the CNN Algorithm

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One of the most intricate bodily functions is the brain, which is primarily made up of billions of neurons. Breast cancer is a tissue development that appears in the breast and spreads to a location where it shouldn't. The study uses an open-source dataset from Kaggle to evaluate breast cancer. The collection also includes photographs, and each image has a unique colour scheme and size. All vibrant pictures are transformed into grayscale images with 256*256 pixels. The information is then split into 20% for assessment and 80% for training. The suggested CNN model is assessed using the ROC Curve, Confusion Matrix, and Accuracy Curve. It was found that, when compared to the existing models, the suggested approach achieved greater accuracy.

Keywords: *Breast Cancer, Convolutional Neural Network (CNN), Magnetic Resonance Imaging (MRI), Segmentation, Computed Tomography(CT).*

COII/CSE_IT/230727

The Role of Online Tracking Systems in the Healthcare System

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The Internet and various smart sensing devices used in the healthcare industry have advanced technology that offers workable and practical solutions in a variety of private and public groups around the globe. In order to increase remote monitoring's personalization and accuracy through device interconnection, these studies seek to apply the Internet of Things (IoT) and Machine Learning ideas to remote monitoring. The goal of this study is to examine various health tracking systems that are used to measure a patient's heart rate, blood pressure, pulse, body temperature, rate of respiration, amount of liquids consumed, and physiological data displayed through facial and mental expressions. Data is gathered using the wireless sensor in order to create a health tracking device. The data is ultimately integrated using the Internet of Things for processing, linking, and computing to achieve real-time tracking.

Keywords: *Internet of Things (IoT), Remote Monitoring, Medical Internet of Things (MIoT), Sensors, Healthcare Devices, Smart Healthcare.*

COII/CSE_IT/230728

Analysis and Prognostication of Crowd Behaviour Based on Machine Learning

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It is well known that crowd behaviour can predict the possible outcomes of a gathering. If events like uprisings, mass lynchings, traffic jams, mishaps, stampedes, etc. could be foreseen in advance, crowd control could become incredibly effective. In this article, we present a novel method for anticipating mob behaviour that makes use of multicolumn convolutional neural networks (MCNN).The input picture is first processed, and its characteristics are extracted. The crowd's estimated population is then determined, and picture cropping is done. We retrieve low level features for each portion of the picture. We then create density images of the image's items. The collected features and their item density maps are then linearly mapped using our technique. Lastly, we use the MCNN algorithm to estimate and count the crowd. We have tested our algorithm on real data for the Shanghai Techdataset.

Keywords: *Image Pre-Processing, Crowd Analysis, Abnormal Activity Detection, Feature Extraction, Machine Learning, Shanghai Tech Dataset.*

COII/CSE_IT/230729

Challenges and Opportunities of Cloud-Based MIS for SMEs: A Systematic Review and Future Research Scope

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Several companies, mainly government agencies, have implemented management information systems. They are particularly suitable for large projects with high complexity. As a result of the effective implementation of cloud-based management information systems, most companies, especially in developing countries like India can concentrate on their core tasks. This study focuses on a systematic approach evaluation of many studies that have examined management information systems with cloud use computer technologies. A systematic evaluation of management journals and business processes is conducted to achieve the aim of the study. The results are analyzed and evaluated in order to understand the basic operation of information systems, their applications in management and adoption Cloud-based MIS. The results of the evaluation were compiled and summarized in a common conclusion on using cloud-based MIS for our current research. The results show a structural focus on cloud-based management information systems in small and medium-sized companies. Medium-sized companies, a range of corporations, mostly government and industrial giants. As a result, the application of cloud-based MIS in management processes is examined and highlighted this research work. From related literature research, various advantages and uses of cloud-based technology MIS are compiled in Outsourcing and Management.

Keywords: *cloud computing, technology, security, challenges & opportunities, MIS*

COII/CSE_IT/230730

Design and Providing the Security Environment on Wireless Mobile Communication System: A Review

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Wireless networks are vulnerable to a number of attacks, including jamming and eavesdropping, due to their shared and broadcast nature. In order to assist both attack and defense strategies, machine learning (ML) provides automated means to learn from and adapt to wireless communication characteristics that are difficult to capture by humanly developed features and models. This article discusses the goal, setting, and variety of research projects that combine

machine learning with wireless security. The research directions surveyed in the context of applying ML for wireless security serve as the inspiration for a roadmap that is presented to support research activities in this area. This roadmap contains emerging adversarial ML techniques in the wireless realm as well as ML-based attack and defense solutions.

Keywords: *Wireless security, machine learning, adversarial machine learning, attack, defense.*

COII/CSE_IT/230731

The Rise of Agile Software Development: A Comparative Analysis of Traditional & Agile Approaches in Meeting User Needs & Increasing Efficiency

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Noticeable development of a variety of softwares has been observed in the last few decades in the software domain. This has led to many companies adopting the agile process to form the development cycle taking inputs from what the users need and the demand of the hour. It can be stated without a doubt that dependency on software has been constantly increasing and knows no bounds in future. Of course, efficiency is the key criteria in this process and a variety of techniques and models are proposed for the same. Agile being the latest model used, this paper distinguishes between the traditional approaches and agile model. Trending themes and methodologies in this regard have been emphasised on in this paper. Along with it, discussion on practical implementation of agile model and how the end product affects the productivity has also been done.

Keywords*: Software domain, Agile Model, Methodologies, Efficiency.*

COII/CSE_IT/230732

A Comparative Study of Different Types of comparison Based Sorting Algorithms in Design & Analysis of Algorithm

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In various applied areas of computer science, such as record applications, networks, and artificial intelligence, there are numerous well-known issues. The sorting algorithm has these fundamental operations and issues. Research on the sorting problem has been very active. The various types of comparison are presented in this paper. Based sorting techniques include the Traveling Salesman Problem, the N-Queen Problem, the Bubble Sort, Radix Sort, the Insertion Sort, the Counting Sort, the Quick Sort, and the Merge Sort. Each algorithm uses a distinct format to solve a particular sorting problem. This paper thoroughly examines each of the eight algorithms'

operation, as well as their benefits and drawbacks, comparing them according to a number of factors, including time and space complexity.

Keywords: *Artificial Intelligence, Sorting Algorithm, Merge sort, Time & Space Complexity.*

COII/CSE_IT/230733

Blockchain Application in Healthcare domain: Industry 5.0 perspective

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Blockchain is one of the next digital technologies that Industry 4.0 involves advances with.Both small and large businesses can benefit from incorporating blockchain to increase confidentiality, integrity, security, privacy, and data openness. Modern manufacturing techniques that enable manufacturers to hit their target more quickly are combined to form Industry 5.0.Various industrial verticals like healthcare, smart agriculture, drones, smart grids, and supply chain production ecosystems are anticipated to benefit from Industry 5.0.To synergize and secure BC Technology's industrial perimeters trusted and secure data communication is essential. Due to its intrinsic capacity to provide immutability, chronology, and suitability in industrial systems, blockchain (BC) is a preferred option as a security enabler for Industry 5.0 ecosystems. In a fully growing distributed economy as part of Industry 5.0, the usage of distributed apps can revolutionize and simplify complicated system tasks and establish new substructures. With greater flexibility and freedom for patients and their data, blockchain technologies have the immense potential to improve healthcare and resolve current security, privacy, and interoperability challenges. A ground-breaking study on Blockchain's role as a security enabler in Industry 5.0 is presented in this article.

Keyword: *Industry 4.0, Industry 5.0, Blockchain, security.*

COII/CSE_IT/230734

Application of Artificial Intelligence in Modern Education Systems

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In the modern-day educational system, the involvement of AI (Artificial Intelligence) has had an amazing impact. Academic aims can now be accomplished and better regulated owing to the rapid adoption of AI in teaching and learning. Using AI, an in depth analysis of each student's learning level has been made possible. This inquiry paves way for an open judgment of the learner's understanding in specific domains. AI will enable learners across all domains to catch up with difficult concepts in plenty of time. The AI based inquiry would also suggest contents with fundamental or simple examples to the learners in order to enhance their ability in the topics that they find difficult to grasp. This paper explores the use of this novel technology in teaching and learning. It also analyzes the implications of modern technology in aiding the modern day learners. By reaping the collective benefits of modern day technologies, the upcoming educational world is planting firm feet with AI as its backbone.

Keywords: *Artificial Intelligence, Education, Implications*

COII/CSE_IT/230735

The Study on Forecasting the Stock Price Moments through Machine Learning and Opinion Extraction Using Big Data

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Forecasting the movement of the stock market or share market price is an important and effective activity. This can result in significant profits from analytical decisions. This prediction is difficult because data availability and types are highly volatile. The price movement is also influenced by daily news and sentiments, as well as market trends. The data sources are highly categorized, necessitating the use of cutting-edge tools and techniques to process it for analysis. All of these factors make it extremely difficult for investors to profit from the market. To address this issue, various prediction theories based on various indicators and parameters have been proposed. This paper highlights the review of such statistical models, which include ML algorithms, calculation methods, and performance parameters, that are currently assisting in predicting share market price movements. Even after such extensive efforts, today's stock market prediction techniques have many limitations.

Keywords: *stock market. Price prediction, big data, machine learning, opinion extraction*

COII/CSE_IT/230736

Metaverse Ecosystem

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The goal of the Metaverse Ecosystem initiative is to combine blockchain and the metaverse, two of today's most innovative and quickly developing technologies. This initiative investigates novel possibilities for the production and trade of digital assets in the metaverse that may result from the integration of these technologies. The project intends to enable frictionless transactions within the metaverse network by using ERC721 NFT's digital assets and ERC20 tokens. The project's main goal is to create a network that makes use of blockchain technology's decentralized character to facilitate safe and open exchanges of digital assets within the metaverse. Users of the platform will be able to purchase, sell, and exchange distinctive assets such as virtual homes, gameplay goods, and other digital assets. ERC721 NFTs will make it possible to create unique digital properties that are simple to verify and validate. ERC20 tokens will also be investigated as a possible medium of trade in the metaverse as part of the initiative. Users will be able to make purchases and carry out deals within the network using these tokens, resulting in the creation of a quick and effective payment system. In the metaverse, the initiative seeks to establish a self-sustaining ecosystem where users can produce, trade, and profit from digital assets. The

Metaverse Ecosystem project's overall goal is to develop a strong and safe network for the exchange of digital assets in order to maximize the potential of blockchain and metaverse technologies.

Keywords: *Metaverse, ERC721 NFT's, Digital Assets, Blockchain, Ecosystem.*

COII/CSE_IT/230737

Spread the Joy

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The project is built on cutting-edge technologies, including HTML, CSS, PHP, BOOTSTRAP, and others. This initiative, which is essentially NGO-based, aids the underprivileged in leading a standard existence. This project's primary goal is to provide the poor with food, clothing, shelter, and presumably a good education in order to meet their fundamental needs. This project differs from the customary NGO-based initiatives in many respects because it includes a chatbot. (AI chatbot). Therefore, the chatbot is very helpful for those who truly want to help the impoverished; in the chatbot, they can debate ways to improve NGO processes so that more people can gain from them. Our initiative also includes a payment method, allowing anyone to contribute money with ease. Additionally, it includes a voice function that is typically not included in the most recent NGO initiatives. Therefore, our initiative contributes to a nation's income growing. The government is unable to provide its benefits to all those who are impoverished for a number of factors, including a lack of resources, a lack of means, or misconduct. NGOs frequently intervene and help to reduce poverty. Through our initiative, we hope to increase access to good healthcare, safe shelter, and pure drinking water. NGOs assist the populace and work to promote the concepts of independence and skill development. NGOs also educate the public about various helpful government programs and initiatives that the general public is typically ignorant of.

Keywords: *Chatbot, HTML, CSS, PHP, BOOTSTRAP, NGO*

COII/CSE_IT/230738

Face Recognition Attendance System

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Taking attendance is one of the most crucial duties that must be completed on a daily basis in colleges, institutions, organizations, schools, and workplaces. Most of the time, it is done

mechanically, like addressing someone by name or by roll number. This project's primary objective is to develop a Face Recognition-based attendance system that will streamline the currently laborious process. Both the criteria for time management and the prerequisites for modernizing the way attendance is managed are satisfied by this initiative. The student's information, including name, roll number, class, sec, and photos, is stored on this gadget, which is placed in the classroom. Open CV is used to retrieve the pictures. The pupil can approach the device before the start of the relevant lesson, and it will start taking photos and comparing them to the appropriate dataset. Face image database administration, face identification video monitoring, and human computer interaction all rely heavily on face detection (human). The visage(s) in the images most frequently play a minor role in human facial detection apps. Therefore, the process of identifying human faces can be significantly sped up by initially segmenting images into areas that contain "non-face" items and areas that might contain "face" candidates. The majority of facial recognition methods currently in use make assumptions that limit their applicability to certain circumstances. In the presence of scale variation, variation in lighting, variation in skin colors, complicated backdrops, etc., existing face recognition methods perform poorly. An image or video that was recorded using a digital camera can be used to recognize, track, identify, or validate human faces using a computer program called facial recognition. Even though there has been significant advancement in the field of facial detection and recognition for security, identification, and attendance purposes, there are still problems that prevent the technology from being as accurate as a person.

Keywords: *Python, OpenCV, Face Detection, Image, Machine Learning.*

COII/CSE_IT/230739

Smart Healthcare: Predictive Diagnosis Using Machine Learning Algorithms

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The use of machine learning algorithms in healthcare has the potential to revolutionize the way medical diagnoses are made. By analyzing large datasets of patient information, machine learning algorithms can identify patterns and make predictions that are beyond the capacity of human doctors. In this research, we explore the application of machine learning algorithms for predictive diagnosis in smart healthcare. Specifically, we investigate the performance of different machine learning algorithms, including support vector machines (SVM), random forest (RF), and deep learning (DL) models, in predicting the likelihood of various medical conditions based on patient data.

We collected a large dataset of electronic health records (EHRs) from a major hospital, containing medical histories of patients with various conditions. The dataset was preprocessed and cleaned, and features were extracted using domain knowledge and feature engineering techniques. We then trained and evaluated several machine learning models on the dataset, using metrics such as accuracy, precision, recall, and F1 score..

Keywords: *Machine learning, Smart healthcare, Predictive diagnosis, Electronic health records (HER, Support vector machines (SVM),Random forest (RF),Deep learning (DL),Feature engineering Accuracy, Precision, Recall, F1 score, Clinical decision support systems, Patient outcomes.*

COII/CSE_IT/230740

Biometric Authentication Techniques for Secure Identity Verification

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In recent years, biometric authentication has become an increasingly popular method for secure identity verification. Biometric authentication techniques use unique physiological or behavioral characteristics, such as fingerprints, iris patterns, and facial recognition, to verify the identity of an individual. Biometric authentication has been widely adopted in various applications, including access control, e-commerce, banking, and government services.
This research aims to investigate the different biometric authentication techniques for secure identity verification. The study will use a literature review approach to identify the key types of biometric authentication techniques, their advantages and limitations, and their applications in various sectors. The research will also analyze the challenges associated with the implementation of biometric authentication techniques, such as data privacy and security concerns.

Keywords: *Biometric authentication, Identity verification, Physiological characteristics, Behavioral characteristics, Access control, Data privacy, Security concerns, Cyber security, E-commerce, Banking, Government services, User convenience, Ethical considerations, Identity management.*

COII/CSE_IT/230741

Career Counseling Chatbot

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To develop a Career Guidance Chatbot which will make career advice a smooth and easy process for students. Chatbot will evaluate the users interest based on a questionnaire and will suggest appropriate Career option to the student. The purpose of a career guidance bot is to conduct a counseling conversation between a human and a machine. The bot helps the users/students who will opt for SSC, HSC, and undergraduate to select their field of interest that would be best for them to build up their future. The system enables the user to explore various existing career

options and their scope. This project plans to revolutionize the world from traditional career counseling to digital career counseling.

Keywords: *Career Guidance, Naive Bayes, Counseling, Chatbot.*

COII/CSE_IT/230742

Lane Line Detection

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A crucial element of both self-driving automobiles and computer vision in general is lane line identification. To reduce the risk of entering another lane and to specify the route for self-driving automobiles, this idea is employed. In this project, real-time lane line detection will be accomplished using technologies like artificial intelligence and machine learning. We'll accomplish this using the OpenCV library and computer vision principles. We must look for the white lines on either side of the road in order to identify it as a lane. The objective of this project is to develop a straightforward image pipeline (take a video frame as input, do some action, and then return a changed version of the frame) that enables lane line detection under straightforward circumstances, such as sunny weather, high visibility, the absence of any vehicles, and just straight lanes.

Keywords: *Python, OpenCV, Detection, Lanes, Machine Learning.*

COII/CSE_IT/230743

ShrubItt- An E-Commerce Website

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An online e-commerce system's goal is to automate the current manual system with the aid of computerized hardware and comprehensive computer software, meeting their requirements in order to store their important data for a longer period of time with simple access and manipulation. The necessary tools and software are readily accessible and simple to use. As previously mentioned, online e-commerce systems have the potential to produce quick, private, reliable, and error-free administration systems. It can help the user focus on their other tasks rather than document keeping so they can better accomplish their goals. Consequently, it will aid the organization in making better use of its resources. The company can keep computerized data updated without making duplicate inputs. This implies that in order to access the information, one does not need to be sidetracked by irrelevant information. The goal is to automate its current manual method using computerized hardware and comprehensive computer software, meeting their requirements, in order to store their precious information for an extended length of time

with simple access and manipulation. The initiative essentially outlines how to manage for excellent performance and improved client services.

Keywords: *HTML, CSS, Bootstrap, E-commerce, Java Script, jQuery, Python.*

COII/CSE_IT/230744

Attendance Management using Face Mask Detection

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In modern culture, facial recognition is becoming increasingly prevalent. In the area of security, it has achieved significant advancements. It is a highly useful tool that may assist law enforcement in identifying criminals, and software providers are utilizing the technology to make it easier for people to access the technology. Building an attendance system that tracks employee presence, time-in, and time-out using facial recognition is the goal of this project. It addresses topics including face alignment, detection, and identification as well as the creation of a web application to support the system's numerous use cases, including the registration of new workers, the insertion of images to the training dataset, the reading of attendance statistics, etc. The goal of this project is to effectively replace outdated manual attendance methods. It is applicable to businesses, institutions, and other settings where security is crucial.

Keywords: *Python, OpenCV, Facial Recognition, Image, Machine Learning.*

COII/CSE_IT/230745

DietXpert

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As your own dietitian and nutritionist, DietXpert is an effective machine learning software for Android that helps you keep track of your total diet and activity. This application's major goal is to give users and clients a simple approach to completely understand their health, which is sadly quite challenging for them owing to their hectic daily lives. To maintain your health through diet, this machine learning application will ask you similar questions on your device, just like the doctor would. You must provide answers to all of these questions before the machine learning application can advise you on what to eat and what to avoid. The proposed personalized diet planning approach not only translates nutrient recommendation but also accept feedbacks from users to fine-tune their meal plan according to their health. The guidelines generated by

DietXpert are expected to potentially improve the overall health & reduce the risk of chronic diseases of individuals.

Keywords: *MongoDB, Android, Nutrient, Kotlin, Diet Planning.*

COII/CSE_IT/230746

E- Study Corner

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These days the professional education environment is challenging and changing quickly. Industry expectations are overly ambitious, and in order to meet them, one must continually advance their level of expertise in their particular profession. The important strategies for overcoming the aforementioned difficulties are strong topic knowledge, acquaintance with facts from the actual world, and familiarity with current problems and their solutions. This website serves as a communication link for college students from various areas and institutions. Because we plan to employ new technology to manage our interaction with users, the E-study Corner system that we have proposed is a website.

Keywords: *HTML, Bootstrap, Education, Java Script, jQuery, Ajax.*

COII/CSE_IT/230748

Predicting Student Performance Using Machine Learning: A Study of Learning Analytics Techniques

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This study investigates the use of machine learning techniques in predicting student performance in higher education. The focus of the research is on learning analytics techniques that utilize student data such as academic records, demographic information, and social interactions. The objective of the research is to develop predictive models that can accurately predict student performance, which can help educators identify at-risk students and provide them with appropriate support.

The study involves a comprehensive review of the literature on learning analytics and machine learning, followed by the analysis of a dataset containing student records and performance data from a university. The dataset is preprocessed, and relevant features are extracted and transformed to develop predictive models.

Keywords: *machine learning, learning analytics, predictive modeling, student performance, higher education, at-risk students, academic records, demographic information, social interactions, logistic regression, decision trees, support vector machines, accuracy, precision, recall, F1 score, educational outcomes, data-driven insights, teaching and learning practices, intervention.*

COII/CSE_IT/230749

A Review of Plant Disease Identification Methods

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The creation of agricultural goods is essential to the nation's economic growth. For the production of various products, farmers have many options. But any farming product can be harmed by plant disease. The development of information technology can be used to identify and spot agricultural diseases in real time. To assess farm output, raise market value, and uphold quality standards, plant diseases must be classified. There are some drawbacks in the suggested and developed systems, despite the fact that many prominent scholars have offered their ideas for creating such systems. Using image acquisition, image pre-processing, image segmentation, feature extraction, and classification, the study offers in-depth talks on plant diseases, disease detection systems, and disease classification.

Key Words: *Plant Diseases, Image Processing, Classification, Feature Extraction.*

COII/CSE_IT/230750

Sentiment Analysis in Robots for Healthcare

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The main idea of the research paper is spread overthree principal themes: an introduction to the topic with an analysis of current systems of healthcare; methodology and approach to the solution; and a discussion on the effects and future of the mechanism. We open with information on service encounters and the growth of technology in healthcare service over the decades. Next, the methodology implemented in the proposal is discussed with a brief overview of the technology, algorithm, and data set. Frequently mentioned formulas and terms are explained to the reader for a clear and proper understanding of the topic. We finally conclude with a

discussion on the various diverse areas of impact of the technology, its scope, and a curtain call on the entire work by summarizing and critiquing everything so far.

Keywords: *Healthcare, Robots, Sentiment Analysis, Emotion Recognition, Artificial Intelligence*

COII/CSE_IT/230752

Cyber-Security Vulnerabilities with small scale banking partners

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Cyber-security is a vital point of discussion of researches and findings. It is none other than humans who are prone to risks and vulnerabilities due to our ignorance to the areas of vulnerabilities. Cyber-attacks mainly include the damage to the customer's information and attacks such as spyware, spoofing, phishing, DDOS, DOS are included and many more. The attacks were increased during the time period of COVID-19 i.e., pandemic because digitization is increasing day by day whereas cyber-security techniques are still the same. This paper includes the risks that are caused because of small scale banking partners (also known as third party vendors) which can be intentional or un-intentional. How they are made aware of the problem before-hand so that they avoid the hazardous situations.
(One of the most vulnerable cyber-attacks)

Keyword: *cyber-security, THIRD-PARTY vendors, Banking system*

COII/CSE_IT/230753

Machine learning Algorithms

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With the growing popularity of the Internet, more and more apps are being integrated into websites that can be accessed directly through the network. This has attracted an attacker who uses phishing websites to gain access to computer systems. To identify a phishing assault, several strategies have been presented. However, there is still opportunity for progress in the fight against phishing. We compared the outcomes of many machine learning approaches for predicting phishing websites in this article. The random forest ensemble machine learning algorithm is used in this study, which uses phishing website cases. The algorithm is improved by combining domain knowledge with feature selection based on feature importance score and Pearson correlation coefficient. We have compared the performance of the model using 3 algorithms and the best prediction performance is achieved by Gradient Boosting, followed by Random Forest and Decision Tree. These algorithmic models capture the trends from various cases of phishing with over R-square, Root Mean Square Error, and Mean Absolute Error, in each case. In all experiment, we find Random calculated Correlation coefficient 0.9317, Mean

absolute error 0.0822, Root mean squared error 0.1825, Relative absolute error 16.4381%, Root relative squared error 36.4876%. Analysis (Test Set= 30%), Random calculated Correlation coefficient 0.9816,Mean absolute error 0.0751, Root mean squared error 0.1126, Relative absolute error 14.4138%,Root relative squared error 46.2762%. Finally we concluded Random Forest classifier performs better results compare to other classifier.

Keyword: *algorithm, Machine learning, classifier*

COII/CSE_IT/230754

The Impact of Social Media On Mental Health

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The use of social media has increased rapidly over the past decade, particularly among younger generations. While social media provides many benefits, including social connection and information sharing, there is growing concern about its impact on mental health. This paper provides a comprehensive review of the research on the impact of social media on mental health. The review includes studies on social media use and depression, anxiety, stress, self-esteem, body image, and sleep quality. The findings suggest that social media use can have both positive and negative effects on mental health, depending on the type and frequency of use. The paper concludes with recommendations for future research and strategies to mitigate the negative impact of social media on mental health.

Keywords: *social media, mental health, depression, anxiety, stress, self-esteem, body image, sleep quality.*

COII/CSE_IT/230755

Cyber Security in Smart Cities

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Increasing pressures on city's resources and citizen's failing quality of life has given rise to concept of smart cities in recent times . Smart cities are strategically administered ecosystems where traditional means of managing the same are replaced by better technological as well socio-cultural interventions. Technological frameworks had aimed at on data enabled administration. By 2024, 44% of total budget spending will split across different smart cities components and thus, leaving them extremely underfunded and vulnerable to cyber-attack. Cyber attack on smart cities provides larger attack surface for hacker due to its high interconnectedness. In this study we wish to outline different scenarios in which smart cities under cyber-attacks leaves the lives of its citizens and it long term sustainability .goals in danger. We highlight the key reasons that

exposes the ecosystem to financial as well as social losses because of the aforesaid. Finally, we discuss measures to mitigate few of the scenarios.

Keywords: *smart city, DDoS, cyber-attack, cyber security*

COII/CSE_IT/230756

Discord Clone V2

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Based entirely on MERN Stack Technology, this undertaking. It handles the Realtime messaging features for a variety of different kinds of activities taking place in our application as well as the Realtime details of video chatting in big groups or team members. Additionally, it maintains a record of all the data pertaining to the team members and users who use this application to complete duties. This application has incorporated a few minor AI models that aid in more efficient job completion. It includes Google search api, AI conversation models, and AI picture rendering models. It is the Docker Hub website's containerized programme. Docker offers the programme a wide range of functionalities for sharing, testing, and upgrading. Additionally, it has a disc feature for uploading media files to the server, aiding in proper data management.

Keywords: *HTML, CSS, Bootstrap, ANTD UI, Java Script, jQuery, MongoDB.*

Chapter-3

Abstracts

SECTION: MBA

Business Administration

COII/MBA/230701

Capital budgeting as a tool of Management Decision Making: A case study of National Investment Bank Limited

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Sound financial management and decision making on capital investment are critical to company survival and long term success. With this truth affirmed by the global financial crisis, this study sets out to examine the capital budgeting tool at National Investment Bank (NIB) in Ghana, adapted for management decision. It establishes the various capital budgeting technique used by NIB in undertaking investment projects and how these decisions affects the firm's value, project and growth rate. As methodology, the study adopts both primary and secondary sources which are further analysed with the use of correlation analysis. The findings reveal that there is a positive relationship between the variables and their effects are significant. The study concludes that the Discounted Payback Period, Accounting Rate of Return in order to maximize the firm's value among other that NIB should educate and train their staff on the various capital budgeting tools and the formation of knowledgeable team that will evaluate projects using the capital budgeting tools due to its irreversibility nature, huge investment outlay and its long term effects.

Keywords*: Capital budgeting, Techniques, Cash flow, Investment, Decision making, Ghana.*

COII/MBA/230702

Role of Professional Communication in Human Resource Management: Old and Current Practices

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Human Resource management is a process in which management and employees work together to accomplish the goals of the organization. It is a system which ensures that all the objectives are achieved successfully by removing obstacles and by increasing productivity. HR managers play essential role in this system. Earlier HR managers used to indulge in the works like recruiting, planning and other traditional works and the professional communication was done in a very conventional way. Either communication was done through letters or through the employee meetings when they all were available at the same place but now in the modern era, the role of HR managers have become more challenging. At the time of globalization, HR managers have adopted new technologies like E-mail, Metaverse, Social media platforms, voice chats, google forms and video conferencing etc. to make their professional communication more effective and more productive. Not only these current practices are being helpful to work faster

and better but also they are being very useful to build good relationships in and out of the organization. With the help of these advanced means of professional communication, HR professionals are accomplishing several challenging tasks.

Key Words: *HR managers, professional communication, productivity, organization, virtual, good communication skill*.

COII/MBA/230703

Role of Search Engine Optimization in Digital Marketing

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-The Application of Search Engine Optimization in Digital Marketing 1. Abstract With various showcasing procedures accessible for organizations, it is very difficult to perceive which specific system is best for the business. Prior to putting resources into the advertising spending plan, associations must completely explore each accessible showcasing methodology on the lookout. Nonetheless, Search Engine Optimization (SEO) is one of the potential web showcasing applications, which upgrades an association's site and its internet based presence, both off-page and on-page to help its positioning inside web indexes, for example, google web search tool. Search engine optimization is a high level method for making the site simpler to sort and more straightforward to find for the clients. It assists the client with tracking down a specific business among a large number of different organizations. Reports propose that around 14 billion online pursuits happen consistently. These figures recommend areas of strength for the of SEO on web advertising. As the site positions higher in the web-based web crawlers, it will ultimately get a more prominent number of snaps from the clients. Consequently, the more taps the site gets, the more noteworthy number of people will imagine the site, in this manner, expanding the possibilities of online clients to track down the help or a result of their advantage. Nonetheless, the business incomes and change rate completely increment, as the site positions higher in the web search tool. The principal objective of this article is to completely study the meaning of SEO, and its effect on web advertising. To achieve this objective different examination studies will be thought about that will assist with deciding the significance of SEO in the ongoing web-promoting, world. While Section II mirrors an exhaustive foundation of SEO and its effect on web promoting, Segment III gives an extensive survey of writing from past investigations, Section IV shows a procedure for further developing SEO, and Section V will incorporate the outcomes and conversation of the examination point. Finally, in Section VI a few ends are given, while specific suggestions are too given appropriately.

COII/MBA/230704

A Study of Tourism Marketing With Special Reference of Indian Economy

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India is a nation with a vast selection of tourism items. Regarding food, music, dances, festivals, climate, ecology, flora and fauna, etc., each region of India is distinctive and distinct from the others. In India, the North East, coastal areas of the Bay of Bengal, Arabian Sea, and Indian Ocean, deserts of Thar, Himalayan states, plains of Deccan and central India, etc. provide completely different tourism experiences. This study focuses on assessing the necessity for marketing India as a tourist destination. This study compares the performance of India's tourist industry to that of other major countries in the globe (in general) and Asia-Pacific (in particular). Thus, we may infer that the marketing and promotion initiatives increased the performance of the Indian tourism business. Yet, India is still unable to use its full tourism potential. Comparing India's performance in tourism to that of the world's other major tourist destinations, India lags well behind. When it comes to tourism, several smaller and less developed nations fare better than India. Therefore, there is a pressing need to enhance marketing and promotional efforts and eliminate tourism obstacles such as infrastructure, bad condition of airports and pilots, hotels, security, and hygiene.

Keywords: *Himalayan states, marketing, infrastructure, destinations.*

COII/MBA/230705

Why is Neuromarketing a Necessity of Present Time?

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In today's environment traditional marketing research methods fail to detain the subconscious means that influence how people respond to any form of convincing message. Neuromarketing tools assemble brain data that can objectively explain critical neurological methods subjects cannot self-report. Basically it provides unique insights about how we understand, feel, engage, and ultimately become persuaded by a message.
Many newspaper articles have since predicted that 'neuromarketing' will change the advertising industry in the coming years. This article will help to readers to understand why anyone creating and interesting persuasive messages should consider using a neuromarketing model. Surveys, interviews, or focus groups do not help to explain the neurophysiologic mechanisms underlying consumer behavior. Yet, the subconscious and

preconscious (The preconscious can also refer to information available for cognitive processing but that currently lies outside conscious awareness) functional circuits of the brain are indispensable to explain our reactions to most marketing stimuli. That is one of the key reasons; neuroscientific methods can produce unique approaching compared to today's traditional research methods – a fact that is now extensively accepted by marketing and advertising researchers around the globe.

Keywords: *neuroscience, neuromarketing, cognitive response, neurophysiology, subconscious reaction.*

COII/MBA/230709

Managerial Challenges & Linking Innovations in Entrepreneurship

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The establishment and development of Small and Medium Enterprises is a resourceful input leading to the rapid development of economic and social prospects. A motivated SME's sector establishes a strong foundation to increase the standard of living and reduce poverty. There must be a rigorous and continuous need to improve the factors that furnish a affable entrepreneurial climate to exceed major obstacles. Maintaining technology, business and knowledge as buzzwords, the rapid advancements in the streams of science and technology are leading towards knowledge entrepreneurs and technology driven enterprises. The social and economic indicators has influenced in the abrupt development of Indian economy setting a bright future in country's education and GDP statistics. Knowledge based industries are likely to acquire maximum prominence facilitating support to SME by the government in the next decade. The major essence is to focus Human Resource Development support with the establishment of appropriate mechanisms towards Technology Business Incubators in the era of globalization.

Keywords: *Incubators, entrepreneurship, venture capital.*

COII/MBA/2307010

An Analytical Study of Indian Agriculture Crop Production and Export With Reference To Wheat

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Agriculture is an important sector in India. It is indispensible for the sustenance and growth of the Indian economy. On an average, about 70% of the households and 10% of the urban population is dependent on agriculture as their source of livelihood. Today, India is a major supplier of several agricultural commodities like tea, coffee, rice, spices, oil meals, fresh fruits, fresh vegetables, meat and its preparations and marine products to the international market.
India is a large producer of several agricultural products. In terms of quantity of production, India is the top producer in the world in milk, and second largest in wheat and rice. Agricultural production is prone to several risks which affect both producers and consumers.

In order to enhance investment and achieve a sustained increase in production, coherent and integrated long-term strategies and policies are required to reduce risk aversion and build flexibility among Indian rural producers.
There is a need to provide remunerative prices for farmers in order to increase the incomes of farmers. In this research paper my objective is to study the major agriculture crops production , export and import of agriculture crop wheat . I will also does there analytical study of the major agriculture crop Wheat.

COII/MBA/2307011

Emerging Trends in Banking

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The banking sector is in a transitional mode towards a vibrant global market and sophisticated information technology. Due to this changing scenario, banks are paying more attention to expanding their activities from just lending and borrowing to other ends like, insurance merchant banking, leasing, electronic banking etc. Even though these changes were expected after the nationalization of banks in 1969, it was noticed that it had only slow and steady progress necessitating a total revamping of the banking sector. Various reform measures were taken to strengthen the foundation of the system by improving asset quality, enhancing capital and improving profitability along with structural changes in the system. During this transition, banks have seen fierce competition, risk, and revolutionary changes forcing them to take immediate steps to retain market share, redress the grievances of customers as fast as possible buy maintaining good ambience, rendering courteous services to customers with the help of latest technological innovations and products.
The flexibility of e-banking offers unprecedented opportunities for the bank to reach out to its customers. With the rapid expansion of the Internet facilities, e-banking is all set to play a very important role in the 21st century. Banks have to deal with the sophisticated clientele with the help of latest technology like e-banking. Lack of coordination and cyber crimes encroaching. E-banking if taken in the right way by banks and customers would take the economy to its best and make it a boon to customers
Introduction and/or development of information technology will not only affect the banking system of our country but the entire banking system of the world. It is high time to advise and train the banking personnel on the acquisition, installation and use of the information technology. Though there was a cry against the introduction of information technology, it is better to adopt it to face the stiff competition from the ever-dynamic foreign counterpart. As the banks become more sophisticated, the benefits of information technology will grow into leaps and bounds. Further research may be conducted on the feasibility of the introduction of home banking, mobile ATM, office banking, phone banking edger payment system and so on.

COII/MBA/2307012

Marketing Strategy with Special Reference to Mahindra

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Marketing Strategy represent a key element of success for organisation. Marketing Strategy adopted by Mahindra is very effective. Executing an effective Marketing Strategy is just as important as conceptualizing and creating it. The objective of the study is to gather information about Marketing Strategy and provide suggestion in Improving the Marketing Strategies and company sale and profitability. Through Marketing Strategy Implementation firms employ scarce resources through marketing capabilities in order to attain the set goals and target. Secondary research is conducted to understand the full impact and implication of the industry, to review and critique the industry norms and reports, on which certain issues shall be selected. Sample plan and Sample size were made to the market. Strategies were made by knowing about the competitors and Situational Analysis and STP Analysis is done before implementing the strategy. The Analysis uncovers two distinct but related features to marketing strategy content: Marketing Strategy decision and Marketing Strategy implementation. The report also suggest that there is a relationship of marketing strategy and marketing mix element on organisational performance. Now, Mahindra has good market share in the state of UK for the SUV segment and company is offering good services which is reflected on the satisfaction of the customers. The originality and value of the review lies in the fact that Marketing Strategy has been analysed both in term of its outcome and as a process that does yield satisfactory result without effective implementation.

COII/MBA/2307014

The Significance of Social Media and Digital Marketing in Affecting Generation Y's Perceptions in India

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Nowadays, using social media and digital marketing to promote a brand and carry out a marketing campaign is becoming a strategic instrument. As we move away from the era of mass or conventional media, marketers may watch brands' competitors and have more quantifiable campaign results by leveraging social media and digital marketing. These online activities are used to create brand reputation, learn what consumers think of the product, and, most crucially, are specifically catered to generation Y. The study is of a descriptive kind. Nir Eyal's The Hook Canvas Model in Marketing was employed in the study. The goal of the study is to determine why social media and digital marketing are important for current branding and marketing campaigns, as well as what the best practises are. The description is based on an explanation of

how social media and digital marketing are used, particularly for Generation Y nowadays. It also describes The Hook Canvas Model by Nir Eyal for the most recent social media and digital marketing craze. Secondary data from interviews, observations, and library research were all utilised in the study. Three stages of data analysis, including reduction, presentation, and conclusion drawing, were performed. The study's findings demonstrate the importance of social media and digital marketing campaigns for measuring results as well as for spreading brand awareness and engaging consumers. By engaging in these types of marketing activities (digitally), as opposed to merely engaging in traditional marketing activities, it is possible to track the behaviour of customers or even future customers in advance and measure the effectiveness of each campaign.

Keywords: *Social media, Digital marketing, Consumer Behavior, Online branding, Millennial, Generation Y.*

COII/MBA/2307015

Just in time manufacturing in automotive industry

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Just in Time manufacturing is a philosophy of manufacturing based on planned elimination of waste and continuous improvement of productivity. It encompasses the successful execution of all manufacturing activities required to produce a final product, from design engineering to delivery and including all states of conversion from raw material onward. Just-in-time (JIT) as a philosophy is good in most environments, including India. Its core philosophy is identifying and eliminating waste and continuous improvement. This is important in a country like ours where resources are scarce. There are auto component companies in India that have excelled in implementing the JIT concept. In this research paper we are discussing about how the just in time technology helps the automotive industry in production process and its benefits in the production process. This paper also identifies the problems faced by automotive industries by just in time manufacturing. The objective of the research paper is to find out the the advantages and the problems of the just in time technique of production.
Outcome of the study-Proper utilization of resources, elimination of wastage of material, good manufacturing etc.

Keywords: *Manufacturing, Improvement, Automation, Production.*

COII/MBA/2307016

A Literature Review of Strategic Human Resource Management

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Strategic human resource management (SHRM) has been studied for over the last 30 years and is highly recognized for its impact to the organizational performance. Nevertheless the mechanism

of its impact still remains in the discussion within the field. This paper is focused on the systematic review of literature on theories of SHRM. The objective is to present the literature review of SHRM studies by explaining the meanings and identifying the variables and their relationship related to SHRM. The conclusion from review shows that variables used in various studies are business strategy, human resource management system, human resource outcomes and organizational performance. The human resource outcomes are found to be the mechanism, which mediates the human resource management system – organizational performance linkage.

Keywords: *Strategic, Human Resource Management; Business Strategy; Organizational Performance;*

COII/MBA/2307017

Challenges and opportunities faced by innovative entrepreneurs in India

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When scarce resources are organized and used effectively and innovatively it leads to the overall development of the country. The process of effectively and innovatively organization of scarce resources is Entrepreneurship. Entrepreneurship plays a significant role in the development of any economy. Entrepreneurship leads to employment-generating opportunities, rural development, technological development, national income, industrialization, export promotion, etc. In India, a large number of small, medium, and large entrepreneurs contribute to the process of economic development, and every entrepreneur has some challenges and opportunities. This paper aims to analyze the challenges and opportunities faced by innovative entrepreneurs in India.

Keywords: *Innovation, entrepreneur, challenges, opportunities*

COII/MBA/2307018

Impact of HR policies on Employees retention

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Human Resource policies are created to achieve the organizational goals. These policies define the path which describes or explains all points related to employees of an organization. Nowadays, employees easily join the organization or they have that much potential which leads them to clear interviews but it is tough to retain the employees. The retention rate is going to decrease year by year. It's important to take care of their satisfaction level at their workplace .The motive of this research paper is to highlight the factors or HR policies that put an impact on the retention of employees in the education sector. The factors like Promotion, increment, training and reward policy cover under this paper. The research paper covers the data from the employees of the Higher Education Sector which consist of the MBA Department .Nearly 100

employees fill the questionnaire. Furthermore, put focus on the policies that are in favor of employees and which are not. How much this has an impact on the working of employees in the organization. Retention of employees is also responsible for the growth and stability of organization in the market. So it is necessary that HR policies must be generated in such a manner which leads to attracting more talented employees in the organization and retaining the old employees. The finding of this research paper conclude that employees are highly satisfied when they get according to their work and get promotion on the basis on work and experience.

COII/MBA/2307019

The Importance of Marketing in Organizational Success

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Marketing is the life blood of any organization without which the organization would perish. In order for the organization to succeed it is imperative to have a strong marketing base. Many successful organizations spend a considerable amount on marketing in order to increase their revenues and their brand equity. The concept of marketing is neither complicated nor original. 'The customer is always right' is a view that has been noticed since the Industrial Revolution. Marketing acknowledges consumer choices and this has evolved as a management science. Though the subject of marketing first evolved in the USA in the early 1950s, the implementation of marketing techniques were applied much earlier in Europe. Marketing is an organizational philosophy which is applicable to almost every organization, be it a profit making organization or not - for- profit we have to comprehend the very basics of marketing and the role it plays in organizational success. Marketing is key to survival in the competitive market place without which the organization would perish.

Successful companies have a strong foundation of marketing which is the key to their revenues and their brand equity. Successful companies have a strong foundation of marketing which is the key to their revenues and their brand equity.

Keywords: *Marketing, Brand Equity, Organization*

COII/MBA/2307020

A Comparative Analysis of Royalty Payments on Intellectual Property Rights:-In Different Sector in India

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Intellectual Property Royalties' are the payment or compensation given to licensor or lessor made by licensee in context of usage of their creation. Royalty is the kind of monetary appreciation given to person which provides growth in individual and gives the new avenue in the nation's development. India has increased the number of IPR in form of patents, copyrights, design etc and initiates the culture of creativity and innovation. IPR royalty is the payment for

the use of intangible assets. As of 2022, the leading country for the best intellectual property environment was the United States with an overall score of 95.48 points, international Intellectual Property Index 2022, by country. With this context need arise to pace up India as per global standards of IPRindex.

The objective behind this study is to make comparative analysis of royalty payments made by Indian Companies over the period of 10 years from 2012-2022 among lessor & comparison of revenue in patents, design, trademarks, geographical indication with different variable, that is, net sales, cost of production, capital employed, profit and exports, in percentage terms.

The study also covers the economic analysis of various IPR like patents, trademarks and copy rights with context of 11 sectors like Auto Ancillary, Auto Mobile, Agro Chemicals, Electronics, Engineering, FMCG, Health Care, IT Soft Hard ware, Media, Pharmaceuticals, Trading. The outcome of this study depicts the sectors possess the more intellectual property right royalties, that indicates their level of growth in that particular sector and gradually moving towards global standards & it finds the various deviation faced by sector which needs to be improvised.

Keywords: *Intellectual Property Rights, Royalty, IPIindex, sectors*

COII/MBA/2307021

A Study on Opportunities and Challenges of Digital Marketing during and Post Covid 19 in India

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Digital Marketing can be defined as the use digital methods and digital channels to reach the potential customer for the promotion of a service or product. Digital marketing involves the use of social media, email marketing, online shopping, etc. which promote the product or service on the various platforms. Digital marketing became more popular among the customers during the phase of Covid era where it was required of people to stay at home and not come in contact with the others. The customers also started making use of online platforms of buying the groceries and the essentials required in the day to day basis.

The study focuses on the impact on Digital marketing during the Covid era and also discuss the development of digital marketing in the post Covid era. Further, the present paper studies the implications of digital marketing in the modern world along with the difference between traditional marketing and digital marketing and the present stage of digital marketing in India. Moreover, the paper focuses on the importance of Digital marketing in the buying process. At last, the study finds the challenges faced in digital marketing in the post Covid era.

Keywords: *Digital Marketing, traditional Marketing, email marketing, Social media, Covid era*

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COII/MBA/2307022

Performance Evaluation of Selected Equity Mutual Funds in India

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A mutual fund represents a vehicle for collective investment into which investors invest their money accordance with stated objectives. In this paper, the performance evaluation of Indian mutual funds is carried out through the Daily closing NAV of different schemes from 1January 2010 to 31 December 2022. The performance evaluation of selected mutual funds is carried out through risk-return analysis, Treynor's ratio, Sharpe's ratio, and Jensen's measure. The source of data is an association of mutual funds in India. The result suggests that most of the mutual funds given positive returns during the study period. Overall it can be concluded that a mutual fund is the finest investment avenue in the capital market.

Keywords: *Mutual fund, Sharpe and Treynor's Ratio, Risk & Return*

COII/MBA/2307023

An empirical investigation in green supply chain management practices in Indian MSMEs

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Despite recent growth in GSCM study, there is still no widely accepted justification for why green practices should be implemented in supply chain management in light of both internal and external pressures. Only to the degree that they participated as suppliers, distributors, and other types of business partners have these MSMEs been involved in such green supply chain practices. This paper studies green supply chain management practices in Indian micro, small, and medium-sized businesses using empirical evidences. This study supports and validates the fact that external stakeholders put substantial pressure on Indian MSMEs to adopt GSCM practices. On-the-job training is one internal pressure that pushes MSMEs in India to implement GSCM practices. Additionally, it has been proven that internal constraints completely mediate the relationship between external pressures and GSCM adoption.

Keywords: *GSCM, GSCM practices, MSME, Supply Chain.*

COII/MBA/2307024

The Impact of Destination Management on Sustainable Tourism Development

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The tourism industry has become a major contributor to the global economy, with millions of people traveling to various destinations each year. Tourism management plays a critical role in the sustainable development of destinations, ensuring that economic, environmental, and social factors are considered in planning and implementation.
This research aims to investigate the impact of destination management on sustainable tourism development. The study will use a qualitative research approach, including interviews, surveys, and case studies of successful destination management practices. The research will focus on identifying the key elements of effective destination management and how they contribute to sustainable tourism development.

Keywords: *tourism management, sustainable tourism development, destination management, economic factors, environmental factors, social factors, qualitative research, case studies, effective destination management, tourism practices, local communities, natural resources, cultural heritage.*

COII/MBA/2307026

Herbal Toothpaste

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Nowadays, the products offered contains chemicals in it which is harmful for the society as well as for the environment. After understanding all this we develop a product which is natural and gives a solution for many of the problems which are being faced by the society nowadays which is related to the ORAL Health, Our Product "Herbal TOOTHPASTE"offers a single product which fulfils the all rounder protection for our mouth and also it is economical. It has been delivered a quality to the Consumer of both URBAN and RURAL areas.The best thing is that our products main ingredient is "ALUM" which is anti-bacterial, anti-fungal and anticeptic and also use other natural herbs and barks like CLOVE, TULSI, HALDI. The product has been easily accepted by the Indians, as they believe in natural/ ayurvedic products-Our product offers Fresh Breath, Strong Teeth, Healthy GUM, GUM TIGHTENING, PROTECTION from Bacteria, relief from sensitivity, cures wounds and pyria.

COII/MBA/2307027

Strategies for Improving the Production of Ready-To-Wear Garment in Clothing Industries

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Commercial enterprise producing a particular product. Industry is also the term for the manufacture of goods using machinery in factories. Clothing is produced in clothing industry. Clothing industry is a factory where materials of clothing are made for consumption.

The production of clothing continues to be one of the driving forces of industrialization in the developing world. Clothing industry is thus one of the industries that employed the greatest percentage of workers both globally and locally (United States Bureau of Labour and Statistics, 2009). Clothing industries contribute to employment in developed as well as in developing countries particularly in regions where paid employment may be difficult to find like Nigeria. The Nigeria clothing industry can generate more than 600,000 employments if properly harnessed with appropriate techniques and innovations (Longeron, 2009). These clothing industries are involved in the production of garments. Garments are physical matter intended for a body (Bjork, 2011). Garments can be defined by its role in revealing or resisting ethnic, professional, class-based, or political identities, or in screening off or establishing a sense of individuality (Bergstrom, 2011). Garments are article of clothing use in cover the body. It can be used as an outer cover or outward appearance like dresses, suits, pants and so on. Garments can be produced at home or in the industry as ready-to-wear. Ready-to-wear are garments that are mass produced opposite of custom made. However, custom made garments are item of clothing made according to individual purchaser specification. Ready-to-wear garments often abbreviated RTW, is the term for factory-made clothing, sold in finished condition. They are in standardized sizes as distinct from made to measure or bespoke. Made to measure or bespoke garments are tailored to a particular person's frame (Nathania, 2011).

Our learnings outcomes from our research is that and we will provide these ways-

- Validation &testing techniques.
- Manual &automatic testing methods.
- Insights of overloading problems/defects.

The fashion industry from an 'operational' and 'manufacturing 'perspective, we can see how managerial decisions regarding a company's competitiveness start from creating a profitable value chain.

COII/MBA/2307028

Smart Vehicle Parking Application

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Smart vehicle parking apps are mobile applications that leverage advanced technology to help drivers find and reserve parking spaces in real-time. These apps typically use a combination of GPS, sensors, data analytics, and cloud computing to provide accurate and up-to-date information on available parking spots, pricing, and location. They also allow users to make reservations, pay for parking, and receive notifications when their parking time is running out. One of the primary benefits of smart vehicle parking apps is that they can help reduce traffic congestion and improve the overall parking experience for drivers. By providing real-time information on available parking spots, these apps can help drivers find parking more quickly and avoid circling around looking for a spot. This, in turn, can reduce traffic congestion and help improve air quality, as drivers spend less time idling in traffic. Another benefit of smart vehicle parking apps is that they can help increase revenue for parking lot owners and managers. By providing valuable insights into customer behaviour, such as peak usage times and parking

duration, these apps can help parking lot operators optimize their operations and pricing strategies. For example, they can adjust pricing based on demand or offer discounts during off-peak hours to encourage more usage.

Smart vehicle parking apps can also benefit local governments by helping them manage parking more efficiently. By providing data on parking usage and demand, they can help cities and municipalities make more informed decisions about parking infrastructure and policies. For example, they can use this data to identify areas with high parking demand and invest in more parking infrastructure in those areas. Some smart vehicle parking apps also include features that can improve safety and security. For example, some apps allow users to report suspicious activity or safety concerns in parking lots. Others may include features such as security cameras or emergency buttons that can be used to summon help in case of an emergency. In summary, smart vehicle parking apps are a powerful tool for improving the parking experience for drivers, increasing revenue for parking lot operators, and helping local governments manage parking more efficiently. By leveraging advanced technology such as GPS, sensors, data analytics, and cloud computing, these apps can provide real-time information on available parking spots, pricing, and location, as well as other features that improve safety and security.

COII/MBA/2307029

Warehouse Management System

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Warehouse management is the process of efficiently controlling the movement and storage of goods within a warehouse. It is crucial for companies to optimise their warehouse operations to ensure timely delivery of products and services. Warehouses are a vital component of the logistics industry, acting as a hub for storage and distribution of goods. A warehouse is typically designed to accommodate large quantities of goods, which are then managed through various processes such as receiving, storing, picking, and shipping. Effective warehouse management requires the use of advanced technology, such as warehouse management systems (WMS) and automated material handling systems. WMS enables the tracking of inventory in real-time, streamlining inventory management, and reducing errors. Automated material handling systems, such as conveyor systems and robotic picking systems, improve efficiency, reduce labour costs, and increase accuracy.

In conclusion, warehouses are essential for businesses to effectively manage their supply chain and ensure timely delivery of products. Effective warehouse management requires a combination of technology, processes, and skilled labour to optimise operations and improve overall business efficiency.

COII/MBA/2307030

Bibliometric Analysis of Indian Trade during and after Covid-19

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Covid-19 devastated the lives of people all over the world. India was not intact from its effects. This paper analyses the studies related to Indian trade and Covid-19 from 2020 to 2023 by using the bibliometric analysis technique of VOSviewer software. We searched the keyword "Indian trade" on the Science Direct website and found 1896 articles on social science. The minimum five-word five keywords association shows that India was networked mostly with Covid19, food security and sustainability, climate change, and gender. In co-authorship analysis, on the parameter of the minimum number of documents as four, only 13 authors met the criterion. Among these authors, only four authors have connections and thus a total of 11 clusters were formed. This shows that most of the research papers are independent of one another. The paper is limited to the research papers available with Science Direct.

Keywords: *Indian trade, VOSviwer, Bibliometric analysis, Covid-19.*

COII/MBA/2307031

Globalization of Financial Markets and Indian Investors – A Trend Analysis

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The term globalization of financial market refers to the integration of financial markets into an international financial market because of which entities now no longer depend on their domestic markets to raise funds nor the investors in a country limited to the financial assets issued in their domestic market. The world has drawn closer by the incredible developments in instant communication and advancement of computer technology. Globalization and liberalization have become the key factors of the world markets in goods, services, technology, labour and capital. Globalization has resulted in grater interconnectedness among markets around the world and increased communication and awareness of business opportunities across the four corners of the globe. More investors can access new investment opportunities and study new markets at a greater distance than before. Countries with positive relations between them are able to increasingly unify their economies through increased investment and trade.

Globalization has influenced international investing, making it easier than even before historically for market participants to invest in companies, industries or other financial instruments abroad. The global financial markets include the market for foreign exchange, the euro-currency of related money markets, he international capital markets, notably the Eurobond and global equity markets, the commodity market and last but not the least the markets for forward contracts, options, swaps and other derivatives. For investors, these opportunities present a wider range of investment options and new ways to profit. Investment in global markets is

possible for the investors through stock purchasing as most brokerage firms are able to access international stock markets and provide their clients with opportunity to purchase shares in companies around the world. Market participants can buy stocks, mutual funds, exchange traded funds (ETFs) or American Depository Receipts (ADRs) to gain access to the shares of internationally based companies.

COII/MBA/2307032

A Study of Postgraduate Business Administration Students on Their Use of Online Resources

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Internet and other electronic resources have quickly become one of the most sought-after sources of knowledge among academics, scholars, instructors, professionals and students in recent years. The purpose of this research was to determine whether or not students pursuing a master's degree in Business Administration at Savitribai Phule Pune University in Pune City, India, feel it necessary to make use of the Internet and electronic resources, as well as whether or not they do so already. A total of 100 MBA students were asked to fill out a structured questionnaire, and 87 of them (or 87percent) answered to the survey. The current analysis provides some insight into the many ways in which MBA students make use of the internet and electronic resources. The findings of the investigation reveal that approximately one third of the student population has been using the internet for an extended period of time and all of them are familiar with the various applications that Internet technology can facilitate. The results showed that more than half of the students questioned had a strong belief that management study would be severely impacted without the use of the internet and electronic resources.

Keywords: *Internet, Electronic, Resources, Students*

COII/MBA/2307033

Role of e-commerce in the marketing field

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E-commerce is a new technique for advertising in the marketing department. E-commerce has impacted not only products but also the service department. E-commerce has a wide range that is applicable in sales, advertising, and approach to new and existing customers. After the coming of e-commerce, that is important for maximizing sales but the traditional style of marketing has not been ignored completely. on one hand, what has impacted a lot on the new market, that is influencing not only the advertisement and sales of products and services but that has changed confidence of shareholders, through e-commerce companies can update themselves on regular basis. But e-commerce has not only a positive impact on the market but that has lots of disadvantages Marketers cannot figure out the exact impact of online advertisement, and they cannot figure out the exact prospective customers. E-commerce impacts many dimensions like the confidence of shareholders, creditors, lenders, and so on. through the assistance of technology, we can figure out an approximate number of prospective customers and use

technology if we are trying perpetually to attract prospective customers so we can convert prospective customers into ultimate customers. E-commerce is very useful nowadays to confront its competitors. so overall this is very significant for all fields of marketers but this is not only major for marketers and companies but also significant for customers. Customers can easily compare any product with many companies.

Keywords: *E-commerce, online marketing shareholders, customers.*

Chapter-4

Abstracts

SECTION: ME

Mechanical Engineering

COII/ME/230701

Additive Manufacturing Technologies

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Additive manufacturing (AM) is a rapidly developing manufacturing technology that is revolutionizing the way products are designed and manufactured. This paper provides an overview of the current state of AM technologies and the advances that have been made in the field in the past few years. The paper discusses the different types of AM technologies and their respective advantages and disadvantages. It also discusses the various materials and processes used in AM, as well as the potential applications and limitations of AM. Finally, the paper provides an outlook for the future of additive manufacturing and its potential to revolutionize the manufacturing industry.

***Keywords**: Manufacturing AM Technologies, Advantages / Disadvantages, Materials / Processes, Applications / Limitations, Future Outlook.*

COII/ME/230702

Automation Technologies and Their Impact on Mechanical Engineering

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Automation technologies have had a profound impact on the field of mechanical engineering. Automation technologies allow mechanical engineers to design and build machines that are more efficient, reliable, and cost-effective. Automation technologies also enable mechanical engineers to reduce the time and cost associated with the design, development, and production of mechanical components and systems. This paper will discuss the various automation technologies available, their impact on mechanical engineering, and the potential benefits of incorporating automation technologies into mechanical engineering projects. Additionally, this paper will discuss the challenges associated with the implementation of automation technologies and the potential solutions to these challenges. Finally, this paper will discuss the future of automation technologies in mechanical engineering and the potential implications for the field.

***Keywords:** Automation Technologies, Mechanical Engineering, Design, Development, Production, Benefits, Challenges, Solutions, Future Implications.*

COII/ME/230703

The Application of Computerized Fluid Dynamics in Fluid Mechanics Research

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This paper aims to discuss the application of computerized fluid dynamics (CFD) in fluid mechanics. CFD is a powerful tool that can be used to simulate the behavior of fluids in a variety of applications, from aerodynamics to biomedical engineering. The paper will discuss the advantages of CFD, its limitations, and the various methods used to solve fluid mechanics problems. It will also provide an overview of the current state of CFD research and its potential applications in the future. Finally, the paper will discuss the challenges associated with the use of CFD in fluid mechanics and the potential solutions to these challenges.

Keywords: *computerized fluid dynamics, CFD, fluid mechanics, aerodynamics, biomedical engineering, current state of CFD research, potential applications*

COII/ME/230704

Recent Advancements in Body in White: A Review

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Weight reduction of a vehicle is very important and highly demanding nowadays and leads to better fuel economy with reduced carbon emissions. Lightweight design of the vehicle can be achieved by the use of lightweight materials possessing high strength to weight ratio like advanced high strength grade steel, aluminium alloys and carbon fibred composites which may replace the conventional steels without sacrificing the crash worthiness of the vehicle. Joining of different parts in body in white can be done through mechanical joining processes like laser welding, diffusion bonding, riveting, clinching, self-piercing, etc. Aerodynamics is another key aspect which helps in increasing fuel economy by better designing with the help of Finite Element Analysis on software like ANSYS, LS DYNA, etc.

Keywords: *Body in white, Crash worthiness, Aerodynamics, Advanced high strength steels, Finite Element Analysis.*

COII/ME/230705

Finite Element Based Vibration and Stability Analysis of Functionally Graded Rotating Shaft System Under Thermal Environment

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The present work deals with the study of vibration and stability analyses of functionally graded (FG) spinning shaft system under thermal environment using three nodded beam element based on Timoshenko beam theory (TBT). Temperature field is assumed to be a uniform distribution over the shaft surface and varied in radial direction only. Material properties are assumed to be temperature dependent and graded in radial direction according to power law gradation and exponential law gradation respectively. In the present analysis, the mixture of Aluminum Oxide (Al2O3) and Stainless Steel (SUS304) is considered as FG material where metal contain (SUS304) is decreasing towards the outer diameter of shaft. The FG shafts are modeled as a Timoshenko beam by mounting discrete isotropic rigid disks on it and supported by flexible bearings that are modeled with viscous dampers and springs. Based on first order shear deformation (FOSD) beam theory with transverse shear deformation, rotary inertia, gyroscopic effect, strain and kinetic energy of shafts are derived by adopting three-dimensional constitutive relations of material. The derivation of governing equation of motion is obtained using Hamilton's principle and solutions are obtained by three-node finite element (FE) with four degrees of freedom (DOF) per node. . In this work the effects of both internal viscous and hysteretic damping have also been incorporated in the finite element model. A complete code has been developed using MATLAB program and validated with the existing results available in literatures. The analysis of numerical results reveals that temperature field and power law gradient index have a significance role on the materials properties (such as Young modulus, Poisson ratio, modulus of rigidity, coefficient of thermal expansion etc.) of FG shaft. Various results have also been obtained such as Campbell diagram, stability speed limit (SLS), damping ratio and time responses for FG shaft due unbalance masses and also compared with conventional steel shaft. It has been found that the responses of the FG spinning shaft are significantly influenced by radial thickness, power law gradient index and internal (viscous and hysteretic) damping and temperature dependent material properties. The obtained results also show that the advantages of FG shaft over conventional steel shaft

Keywords: *Power law gradient index; Functionally graded shaft; Temperature dependent material properties; Viscous and hysteretic damping; Rotor-Bearing-shaft system; Finite element method; Campbell diagram; Damping ratio; stability speed limit (SLS).*

COII/ME/230707

Ergonomics and Industry 4.0- Future Perspectives

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The Fourth Industrial Revolution has knocked on the Door of Our World, with the passage of time, there has been a lot of change in way of things are made and worked in the industry. Earlier it used to take a lot of time to make any item in industry and the laborers also took a lot. Human safety and human comfort were also ignored in the industry earlier. The quality of the goods which were made in the industry is also not very good in earlier stages in industry. But when the industrial revolution first arrived in Europe, things started to change very quickly. The way of working changed completely and the use of new machines started increasing continuously, which made maximum production possible with minimum labors. During production, the work which was almost impossible to be done by humans, machines started doing it easily and loss of human life also started decreasing in industries. Going forward, more industrial revolutions came in the industries, which completely changed the way of production and working in the industry. Robotics arm and artificial intelligence started working in the industry, for which the demand for engineers and educated people increased in the industry. Competition among industries also increased a lot and everyone started giving place to advance and new technology in the industry. Human comfort started getting more attention which led to a new term in the industry which we know as ergonomics. If there is no human comfort while working in the industry, then its physiological effect also falls on the human being, which increases the chances of accident in the industry. In this paper, we will learn about Industrial Revolution 4.0, how it gives importance to ergonomics consideration for human comfort and how it makes friendly relation between man and machine . There is a continuous change in the way of working in the industry, which gives more benefit in less time, new methods are also good from the point of view of safety and in the future there is a need to change the way of work to improve the science and technology. Usual manufacturing processes are being done by robotics which saves labor cost and brings accuracy in work.

Keywords: *Industry 4.0, Process planning, Ergonomics, Lean manufacturing, Scheduling.*

COII/ME/230708

Water withdrawal mechanism from the under-ground for constructional work without any external source

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Infrastructure endeavors are one of the main means of livelihood for most of the people in our country. Road network, residential and industrial buildings, bridges, etc. Construction and manufacturing activities are key to assess the degree of development of the region. From a holistic perspective, solid non-metallic works are one of the most popular events happening around the day and night to reflect the development of a nation/region. First, there are some constraints in terms of resources such as electricity, labor etc., at certain places and times. Fixing

the constructed structure is an important aspect regarding strength and durability. In some remote locations, the actual event is hampered by the lack of electrical equipment, the unpreparedness of human labor for continuous strenuous operations, etc. Access to groundwater depends on fuel sources such as gasoline, diesel, etc. Rising fuel prices are also holding back construction activities. The presence of electricity, from a temporal and spatial point of view, imposes certain restrictions. It is not always appropriate to incorporate conventional abstraction methods for various purposes such as irrigation, treatment for newly built structures etc. Thus, a method was designed and developed to enhance the physical non-metallic structural/construction performance, particularly to increase the water content. The developed mechanism is quite simple, easy to handle and with some entertaining experience. Apart from ordinary persons, it also includes people such as women, persons with disabilities; Weak people etc. to run the function. Events like construction of buildings, providing water to curing purpose. are the main functions of this designed model. High mechanical advantage, energy utilization value, efficiency leverage are some of technical features of the developed model.

COII/ME/230710

The Impact of Artificial Intelligence on Society: A Comprehensive Analysis

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This paper provides a comprehensive analysis of the impact of artificial intelligence (AI) on society. It begins by providing a brief overview of AI and its current applications and then examines the potential implications of AI on different aspects of society, such as employment, education, healthcare, and the economy. It also looks at the ethical considerations associated with AI, such as privacy, safety, and fairness. Finally, it discusses the potential for AI to be used for social good and how it can be regulated to ensure that it is used responsibly. The paper concludes by summarizing the key findings and suggesting further research.

***Keywords**: Artificial Intelligence (AI), Employment, Education, Healthcare, Economy, Privacy, Safety, Fairness, Social Good, Regulation.*

COII/ME/230711

How Aluminium Alloys Revolutionize Small Drones: Exploring the Incredible Benefits of using aluminium alloy in micro drone Frames

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The multicopter drone has an increasing role in development of different sectors & everyday life. The piloting ease, mechanical simplicity, less fuel consumption & autonomous flights are the

main reasons for drone diffusion for professional use. In upcoming near future micro size medium range drone will be very useful for product delivery, surveillance, topography & videography. Manufactures use lots of 3D printed as well as plastic moulded frames for drones of this category with compromising strength of material and durability. They also use carbon fibre to overcome these issues but end up making very expensive drones which can't be commercialise till an extend. Use of aluminium can solve all problems of drone chassis but it is avoided because it transmits vibration easily which effects the working of sensors like accelerometer, magnetometer and gyroscope. If we focus enough on controlling vibrations using shock absorbers, washers and anti-vibration glass fibres, aluminium can revolutionise the production methods & materials of micro size medium range drone frame.

Keywords: *Micro, multicopter, drone, aluminium frame,*

COII/ME/230712

Autonomous Electric Car with 3 Ways Charging

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This research paper proposed an autonomous electric vehicle (AEV) system is an autonomous and efficient transportation solution that combines advanced technologies in autonomous driving, electric propulsion, and energy management to provide a safe, comfortable, and environmentally friendly transportation solution. It generates electricity by combining solar panels and wind turbines, which is then utilised to charge the vehicle's battery. The car is outfitted with sensors, cameras, and powerful algorithms to enable self-driving in a variety of conditions. The charging infrastructure comprises both stationary and mobile charging solutions, with the control system optimising the AEV fleet's energy management and routing using data analytics and machine learning approaches. The results suggest that the vehicle can attain a high level of autonomy while decreasing its carbon footprint.

COII/ME/230713

Study of the deformation behaviour of the billet and tooling design on AA5083 using equal channel angular pressing

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Equal channel angular pressing is a relatively new technology for deforming materials to extremely high plastic strains while causing no net change in the shape of the billet. The approach can be used to is critical to comprehend the deformation behaviour within the die, as well as its link to tooling arrangement and friction conditions. These was investigated using scribed grids, simple finite element modelling, and microstructural data. It has been discovered that the achieved strain is sensitive to die angle, friction conditions, and the application of a back-pressure, which has a significant impact on the microstructure and strain inhomogeneity within the processed billet. It has been discovered that the achieved strain is sensitive to die angle, friction conditions, and the application of a back-pressure, which has a significant impact on the microstructure and strain inhomogeneity within the processed billet. The optimal processing conditions appear to be obtained when the die corner is sharp, the friction is low, and the back-pressure is restricting. Despite rising shear strain in each extrusion cycle, the method maintains the shape of the billet. For each alloy, the values of the 0.3% proof stress and ultimate tensile stress increase significantly, but the elongations to failure decrease. Using a finite element modelling technique, the impacts of material constitutive behaviour, tooling design, and friction conditions on metal flow, stress fields, and the tendency for tensile fracture during equal channel angular pressing were determined. According to the FEM results, the most uniform flow was obtained during the ECAP of a strain-hardening material with low strain-rate sensitivity in tooling with a sharp inner corner radius. The ECAP of materials with various constitutive behaviours or tools with a radiused front leg demonstrated some degree of flow non-uniformity, even away from the extrusion's head and tail. Tooling design and material qualities were also projected to have a significant impact on tensile stresses and thus tensile damage during ECAP. When comparing at the same total stresses, the hardness and microstructure evolution are equal either using the multi-pass facility or repeatedly pressing samples through a typical die featuring a single shearing plane.

Keywords: *ECAP; SPD; AA5083; Back Pressure; Plastic straining; Ultrafine grain size*

COII/ME/230714

Performance characterization of cocklebur biodiesel with nano particles on a four-stroke diesel engine

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Xanthium strumarium, commonly known as cocklebur, is a plant species that has been explored for its potential use as a biodiesel feedstock. The plant produced a significant amount of oil, which can be extracted and converted into biodiesel. The nanoparticles use in this study are titanium oxide ($Ti0_2$). The objective of the study is to characterize the performance of cocklebur biodiesel with nanoparticles with four stroke diesel engine. Specially, we aim to evaluate effects of nanoparticles additives on engine performance, emission, and combustion characteristics. The increasing demand for energy and the negative environmental impact of conventionalfossil fuels have led to an increased interest in alternative energy sources such as biofuels. Biodiesel, a renewable and sustainable alternative to fossil fuels, has gained much attention due to its numerous environmental benefits. However, biodiesel has some drawbacks, including lower

combustion efficiency and higher emissions of certain pollutants compared to fossil fuels. The effect of nanoparticles on the performance and emissions characteristics of cocklebur biodiesel on a four-stroke diesel engine. The addition of metallic nanoparticles such as silver, copper, and iron oxide to the fuel. The performance and emissions characteristics will be evaluated based on various engine parameters, including brake power, torque, specific fuel consumption, and exhaust emission such as NOx, CO, and particulate matter.

COII/ME/230715

Reducing Weight of Mechanical Component Using Topology Optimization

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In the current age of technological advancement, every manufacturing organization strives to focus on lowering production costs and reducing component weight while maintaining the necessary performance characteristics. By selecting a more effective structural configuration and optimizing the structure's shape and topology, the material and energy can be saved. To achieve weight reduction through topology optimization, the finite element based software such as ANSYS/MSC NASTRAN is used; it analyzes the load-bearing capacity of a component and simulates the effects of different material distributions and geometries. The software then generates a design that minimizes the material usage while satisfying performance criteria such as stress, deformation, and stiffness. Topology optimization is a technique used in engineering design to find the optimal shape and layout of mechanical components while satisfying certain performance requirements. The goal of topology optimization is to minimize the weight of a component while ensuring that it remains structurally sound and able to perform its intended function. The present work shows how the weight of the mechanical component is reduced using topology optimization. Further the optimized designs are tested on FE (finite element) based platforms that approve the interchangebility of designs.

Key Words: *Weight minimization, Topology optimization, finite element analysis, von-mises stress, deformation.*

COII/ME/230716

Fabrication and Characterization ofthe Composite Al6082/Mg AZ3lB by the Friction Stir Additive Manufacturing

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Friction Stir Additive Manufacturing (FSAM) technology is one of the emerging additive manufacturing methods that make use solid-state of the concept of solid-state state friction stir processing to produce multilayer structures by joining individual layers one at a time.A fundamental prerequisite for constructing massive machinery, equipment, and other structures is joining two metals or alloys. This research work completed the different processes parameter, increases the hardness of the developed composite material and improves the quality of the composite after adding the reinforcement, after examining the microstructure properties of the developed composite mixing the reinforcement was very well, which means showing less porosity, and high strength. Additionally, the FSAM process's present state and potential future application in a variety of engineering fields, as well as anticipated future developments, are thoroughly examined.

Keywords: -*Metal Matrix Composite, Composite Material, Friction Stir Additive Manufacturing, Tensile Strength, Hardness.*

COII/ME/230717

Design, Development & Fabrication of Green Lift

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In the existing system the new design is used f or converting unutilized mechanical energy into electrical energy and it is compactly fitted into headroom. This new design is specific to the regenerate the electrical energy from mechanical energy of the lift which is stored in battery and it will use whenever the light is off This design is easily compile with the existing system this design content two rolling part and a reciprocating part which is used to convert circular motion into reciprocating motion and vice versa. The lift is moving up and down that's the mechanical energy converts that's specific system into electrical energy.

Keyword: *Electrical Energy, Reciprocating, Rolling.*

COII/ME/230718

Smart Interior Door Lock

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The essence of our project "Smart Door Lock" is that we have to protect our valuables from being stolen or looted. As soon as we go out somewhere leaving many valuables kept at home, office, shop, hospital etc. and lock the locks from outside with the key, then the risk of theft increases a lot. Because, today's thieves have become very smart, either by making a duplicate key of the lock or by breaking the lock, they easily enter your house and steal. So to avoid the danger of any such theft, our team together has created such a smart door lock system, in which we will be able to lock and unlock the door from inside as soon as we press the button from our mobile.

COII/ME/230719

Design & Fabrication of Automatic Wall Painting Robot

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The primary aim of the project is to design, develop and implement semi automatic Wall Painting Machine which helps to achieve low cost painting equipment and safety. The painting chemicals can cause hazards to the human painters such as eye and respiratory system problems. Also the nature of painting procedure that requires repeated work and hand rising makes it boring, time and effort consuming. When construction workers and machine are properly integrated in building tasks, the whole construction process can be better managed and savings in human labor and timing are obtained as aconsequence.

COII/ME/230720

A review of recent advancements in CAD/CAM software for manufacturing processes

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Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM) software have revolutionized the manufacturing industry by improving the accuracy and efficiency of manufacturing processes. In recent years, there have been significant advancements in CAD/CAM software that have further improved the quality and speed of manufacturing processes. This paper presents a review of recent advancements in CAD/CAM software for manufacturing processes. We discuss the latest trends in CAD/CAM software and their impact on the manufacturing industry.

Keywords*: Computer-Aided Design, Computer-Aided Manufacturing, CAD/CAM software, manufacturing industry, advancements, quality, speed, trends, impact.*

COII/ME/230721

Theoretical Analysis of Triple Slope Solar Still (TSSS) Integrated with Glass-Glass PV Module

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In present scenario fresh water demand is increasing due to rapid rise in world population. In order to meet the global demand of potable water various new techniques are developed, one of which is solar distillation. Solar still uses solar energy for water purification, which is non-conventional source of energy. This paper discuss about the modelling and analysis of a triple slope solar still (TSSS). In present work, solar still model is fabricate with Fibre Reinforced Plastic (basin and north wall) and acrylic sheet (east, west and south walls) to increase the heat input and hourly yield. The slope on which glass-glass PV-module is mounted ensures that solar radiation incident outside the solar cell area is being transmitted through glass of PV module. This collectively enhances the water temperature and temperature difference between water and glass surface. Thus, the yield production is improved. Theoretical model is developed and analyzed for the modified design of solar still.

Keywords: *Triple Slope Solar Still (TSSS), Fibre Reinforced Plastic (FRP), Glass-Glass PV Module.*

COII/ME/230723

Experimental Investigation and Parametric Optimization of Plain Turning of Aluminium Alloy

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In machining process, there are various parameters involved. Some challenges that the engineers come across are to find out the optimal parameters for the desired product quality and to maximize the performance of manufacturing using the available resources. In today's manufacturing industry, special attention is given to dimensional accuracy, material removal rate, surface finish and hardness of material.

The surface quality is an important parameter to evaluate the productivity of machine tools as well as machined components. Surface roughness is used as the critical quality indicator for the machined surface. The quality of the work piece (either roughness or dimension) are greatly influenced by the cutting conditions, tool geometry, tool material, machining process, chip formation, work piece material, tool wear and vibration during cutting. Extensive effort has been done to observe the critical parameters which affect the surface roughness. This work aims optimization study of process parameters for material removal rate, surface roughness using Taguchi approach. The tool selected for this experimental study is HSS tool and the work piece is of Aluminum Alloy. The parameters selected for the present study are cutting speed, feed rate

and depth of cut while the performance measures are material removal rate and surface roughness.

Keywords: material removal rate, surface finish, hardness, Taguchi approach

COII/ME/230724

A Review on Sustainable Development through Renewable Resources

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As a developing nation India has exceptionally large demand for energy to fuel its flourish economy and developmental needs. However, the country has always been committed to look for more alternative energy sources for sustainable development. Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Therefore, renewable energy resources promoting clean energy resources and making efforts to deal with climate change. The overwhelming use of natural resources has resulted in their depletion causing damage to overall sustainable development of the environment. Eventually, the focus shifted from natural resources to sustainable alternative forms of energy production which can be created through the use of renewable energy resources such as tide, wind, water, heat and other forms of biomass which are non-depleting in nature. This paper has established an idea about different renewable energy application through sustainable development.

Key words: *Renewable, Sustainable Development, Fossil Fuel, Clean Energy.*

COII/ME/230725

Next Generation Manufacturing: 4D-Printing Technology & its application

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3D printing has been recall as a emerging technology for future advanced manufacturing systems. This advanced technology have a great potential to change everything from our daily lives to the overall economy. In this reference 3D printing technology is similar to 4D printing technology; 4D printing technology adds the fourth temporal dimension to 3D printing. The fourth dimension in 4D printing refers to the ability for material objects to change form and function with time. Inducement such as temperature, pressure, humidity, water, wind, pH and light.4D printing is a relatively new advance in printing process and multi-materials. In this Paper, we review the recent research on 4D printing, its application and difference between 3D printing and 4D printing.

Key words: *4D printing, 3D printing, smart materials, applications.*

COII/ME/230726

Wall Climibing Glass Cleaner Robot

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The robot could then be utilized to carry rescue tools or to do some other work instead of human. The main motive of glass climbing robot is to climb and move on glass surface. To achieve this purpose efficient attachment and detachment is an important aspect. This type of robot can take place of humans to carry out hazardous work such as cleaning of glass.

COII/ME/230727

Dynamic Plate Response under a Soft Projectile Impact

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The experimental investigation of dynamic behavior of metal plates (mild steel) when a flat end projectile is made to impact are studied. The analysis is done by using the software DIC (Digital Image Correlation). 3-D deflection and full field surface deformation were analyzed. Projectile made of Teflon of 15mm diameter and length 25 mm were used in this study. The projectile was made to impact on the specimen plate using a gas gun. The velocity of impact was in the range of 90-250 m/s. A photo-diode arrangement was used to measure the impact velocity and data acquisition system was used to change the analog signal to digital signal. Two high speed cameras were used to analyze the images by using the software DIC.

Keywords: *Digital image correlation; displacement measurement; numerical simulation; stress–strain comparison; speckle pattern*

COII/ME/230728

Investigating the Effect of Process Parameters on Material Removal Rate and Surface Roughness in Wire-EDM of EN-31 Material using Brass Wire Electrode

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Material Removal Rate in WEDM, The rate of material removal from the workpiece is known as material removal rate. Some material is melted and then evaporated according to process

parameters of electrical discharge machine during machining. The material removal rate is calculated by dividing the workpiece weight loss (in grams) to the product of the density of the workpiece (gm/cc) and the machining time. Higher the material removal rate higher is the productivity. Hence it is most desirable to increase the material removal rate. It is also known as wire cut EDM and wire cutting. A very high electric spark produce with a very small gap maintained between the work piece and a thin single metal wire, usually, brass is fed through the work piece, submerged in a tank of dielectric fluid, typically deionizer water.

Principle of WEDMDue to the advancement of mechanical industry, the demands for alloy materials with high hardness, impact resistance and toughness are increasing. The Wire-EDM machine is specialized in cutting complex contours that are difficult cut using traditional cutting methods. Wire-EDM is a non-contact non-conventional process that produces high quality product that is difficult to achieve by using of conventional processes. The present study on Wire EDM performed on EN-31 using brass wire as electrode is conducted to establish the influence of process parameters on material removal rate and surface roughness. The experimental results concluded that both material removal rate and surface roughness are mainly influenced by the peak current. Pulse on time was least influencing parameter for surface roughness. Voltage was the second most influencing parameter for surface roughness. It was also observed that larger craters were obtained at higher current.

Keywords: *MRR, EN-31 Material, Dielectric fluid, Wire EDM machine.*

COII/ME/230729

Spokeless Wheel

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This paper proposes the design and development of a unique Spokeless wheel that is integrated with a bicycle. The cyclist will pedal to propel the spokeless wheel forward. The spokeless wheel will contain sixteen bearings that will roll over the flat rim's surface. Another advantage of this approach is that it comes with a very helpful stopping mechanism. The goal of the project is to combine the best of traditional bicycles and modern spokeless wheels. In previous designs, two ball bearings were placed into each screw-bolt assembly; however, only one bearing is employed in this project. On the wheel plate, the reare six center screw-bolt assemblies

Chapter-5

Abstracts

SECTION: MISCELLANEOUS

Electrical Engineering

Electronics Engineering

Civil Engineering

COII/EE/230701

Automatic Generation Control of Power System in a Deregulated Setting Using Optimized Fuzzy Controller

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This research posses the control of load frequency where the chosen arena is the two area power systems dealt under deregulated field. We are using a fuzzy logic controller is based on genetic algorithm. Graded AC tie-lines are used to relate the regions. Optimization of the scaling gains of the controller is the prime thing in bringing ideal tuning. The controller adopted in this paper has gone through several operating conditions under the field of deregulated two area system. The influence of bilateral accordance between the distribution and generation companies is the part of this work that is simulated via Simulink /MATLAB. Thus, in comparison with performance, the genetic algorithm tuned fuzzy logic controller is better than the existing integral controller or the non-tuned fuzzy logic controller.

Keywords: *load frequency control, optimization, deregulated power system, genetic algorithm, fuzzy logic controller.*

COII/EE/230702

Performance Analysis of Hybrid Vehicle Equipped with PV Panels

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The Solar Panel technology is critical to the advancement of electrical motors. One of the main solar panel applications that can benefit from is electrical vehicles. A review of related literature is undertaken to analyze available solutions for the application of same on an E-cart, including redesigning and improvement of the E-cart which is widely used for short distances throughout the college campuses, as they don't cause any pollution and are easy to operate. In conventional E-carts, we need to charge them through the on-grid supply and use it only once its charged. In this paper, a hybrid system is used to run the E-Cart by off-grid solar panel system. By using solar panels, there is an average saving of Rs. 70-90 per charge. In this way, we are benefitting the environment and thus improving the overall operational time of the E-kart.This paper focuses upon the redesigning and improvement of the E-cart aswell as performance analysis of the same. In the conventional E-cart we have to charge the batteries and use after charged. But in this paper, a hybrid system is used to run the E-Cart by solar panel system. In conventional E-cart we have to charge again and again. It takes 6–7 h for charging and secondly the E-cart has to keep standing for this system. The above problem is solved by using solar panel mounting. By using this technique, no charging time is required.Our main efforts would be to make it even more easier to operate and charge with comparatively lower running , charging costs by utilizing the

Solar panel based approach for charging and running this hybrid vehicle on the photovoltaic panels.

COII/EE/230703

Early Earthquake Alerting System: A Review

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This review paper gives a brief summary of our group's Early Earthquake Alerting System project. As Earthquakes is a serious threat to living beings . They are caused by collision or movements of tectonic plates, seismic waves, which are caused in Earth's crust by a sudden release of energy. Earthquakes can be so hazardous that they can throw living beings around and kill whole cities. Earthquakes, as we all know, are a natural occurrence that cannot be prevented. However, if we do not take appropriate action to tackle it, it can be extremely dangerous. Furthermore, seismometers can be used to track earthquakes, but they are very expensive. As a result, there should be a mechanism in place that can detect an earthquake without the use of a seismometer and warn the DMT and residents. IOT application that allows things to talk to one another. Arduino mega was used as the micro controller in the device. The purpose of creating earthquake warning system is to declare the information about the beginning and end of the earthquake at the instant of earthquake as a tweet in tweeter and to give audible notice for the persons in the environment. At the time of the earthquake, IMU and piezo vibration instruments were used to identify vibrations. The system also came with an ESP8266 Wi-Fi module so that it could link to the internet. To find the earthquake, the system analyzes the information from vibration and IMU instruments.

Keywords: *Arduino, Earthquake Warning System, Wi-Fi, IoT, Internet of things*

COII/EE/230704

Intelligent and Futuristic Car Parking Solution

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Vehicle parking has become a major concern in metropolitan cities, and a good traffic system requires a good parking system as well. Many types of car parking systems are available worldwide, including Multi-level Automated Car Parking, Automated Car Parking System, Volkswagen Car Parking. For all drivers, whether they are novices or experts, this paper explains in detail how multistage car parking works, its benefits and characteristics, etc. An informational paper is presented here that will help develop a reduced working model that will

use a 32.17 square meter parking area to park 6 to 12 cars. Driven by a chain and sprocket mechanism, the parking platform becomes indexed by a brake motor powered by a fourth horsepower. Shifts are made to the platform. In Bangladesh, parking system is a huge problem. There are times when parked cars in the streets cause extra traffic jams, and traffic jams are already a curse in Dhaka City.

A road gets blocked by parking always one lane at a time. At drop-off stations, cars always form a line to be refilled, blocking one lane of the road. Parking is an important component of the transportation program. The City has super scribed parking issues related to educational institutions, entertainment users, religious institutions, commercial activities, special events, etc At drop-off stations, cars always form a line to be refilled, blocking one lane of the road. Parking is a ponderous part of the transportation program. The City has addressed parking issues related to educational institutions, entertainment users, religious institutions. There is a mechanical device that populates parking capacity within a parking lot. Drivers park their vehicles in an entryway area and park them in a consigned area. Hydraulic or mechanical lifting devices raise the vehicle to another level to park it properly. We can control the rotation of the parking lot with the help of IOT (ESP -32 Cam) and also monitor it through the camera.

Keywords: *Futuristic Car Parking Arena, IOT, Smart Camera etc.*

COII/EE/230705

Electric vehicle analysis equipped with solar panels

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Solar Panel technology plays a vital role in the progress of electrical motors, especially in the realm of electric vehicles. This paper conducts a review of relevant literature to explore how solar panels can be utilized for E-carts, which are commonly used on college campuses for short-distance transportation due to their convenience and low environmental impact. Traditional E-carts rely on on-grid charging, which can be time-consuming and costly. However, this paper proposes a hybrid system that incorporates an off-grid solar panel system to power the E-cart, resulting in an average cost savings of Rs. 70-90 per charge. This approach not only benefits the environment but also improves the overall operational efficiency of the E-kart. The paper focuses on redesigning and enhancing the E-cart, as well as analyzing its performance. By utilizing solar panel mounting, the need for repeated charging is eliminated, reducing charging time from 6-7 hours to zero. Our goal is to make E-cart operation and charging even more effortless and cost-effective by using a solar panel-based approach for charging and powering this hybrid vehicle.

COII/EC/230701

Website Development on Crop Health by using IoT

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This research paper presents the development of a website aimed at improving crop health by using Internet of Things (IoT) technology. The website provides real-time monitoring of crop conditions, such as soil moisture, temperature, and humidity, to help farmers make informed decisions about crop management. The website was developed using a combination of web development tools and IoT devices, including Arduino boards, sensors, and wireless communication modules. The data collected from the sensors is transmitted to the website through a web server, where it is analyzed and displayed in a user-friendly interface.
The website offers features such as data visualization, alerts, and recommendations based on the analysis of the collected data. Farmers can access the website from any device with an internet connection, enabling them to monitor their crops from anywhere and at any time. The results of this research demonstrate the potential of IoT technology in improving crop health and increasing yields. The website developed in this study can serve as a valuable tool for farmers in making informed decisions about their crops and reducing the risk of crop failure. In conclusion, this research presents a novel approach to crop health monitoring by utilizing IoT technology and web development. The website developed in this study has the potential to improve agricultural practices and contribute to food security in the future.

COII/EC/230702

Coal Mine System for Safety Alerting and Monitoring

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Mining employees takes the biggest risk by working in the mines which is the biggest threat to their life. The coal mine safety system assures a workplace that is risk-free. The research work's primary objective is to improve the miner's health and safety. The extraction of iron from stone and the production of cement both depend on the usage of coal because of which coal mines comes under the major industries in the country. Alerting and safety monitoring system for coal mine based on IOT (Internet of things) uses a variety of sensors for different purposes and the Arduino Uno is employed for higher dependability. This method is considered in the industry, and every sensor comes under the same unit. The control room of the mining is notified with an alarm message when the sensor values are above the threshold value and for further processing the values of the sensor are transferred to the Arduino. Monitoring the working environment is crucial because of the complicated environment in the mining industry and the number of operations carried out in mines. To deal with this problem, there is a system that keeps track of

fundamental safety precautions and controls numerous coal mine restrictions, including fire sensors, humidity levels, level of temperature and gas leakage. All sensors are gathered together in one unit, which is then implanted in a coal mine.

Keywords: *Coal Mine, IOT, Arduino UNO, Sensors, Alerting and Monitoring System*

COII/EC/230703

Security Based Groundwater Monitoring System Using Internet of Things

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The major problem among the people is that they are lacking in the awareness of the underground water usage. Thus, they are in the process of designing the "Application" which gives the data about the underground water consumption of the consumers and monitor the ground water usage of the consumers. Also, alarming when the maximum usage of water or wastage of water. This system sends the information of the water usage of that area and automatically recorded in the government water board of that area with quantity of the water usage, If exceeds the limit will have the locking system of the water supply of the usage area with fine. Thus the paper gives the total guidance to the people according the usage of the underground water resources digitally with the application itself Keywords - Arduino, IoT, and Groundwater.

COII/EC/230704

An Efficient approach of True Random Number Generation using A Data encryption method in Security & cryptography algorithm

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True random number generators (TRNGs) have drawn a lot of focus due to their numerous uses in data encryption and transfer. The encryption method or privacy protocols of the data protection centre often use the real random numbers produced by the true random number generators. TRNGs were already being used to save energy in the recent times developed stochastic computing paradigm. This methodology utilizes the extended symmetric key cryptography technique, which utilizes the very same framework for both the encryption and decryption processes. The encryption and decryption keys used in traditional cryptography techniques are identical and are kept private. The technique employs a randomized numbers generator to generate keys, which increases technique performance. The algorithm uses 512-bit keys for increased security and offers the idea of intrinsic key creation at the receiving end using the 512-bit key provided by the transmitter. To avoid conventional warfare assaults as well as any damaging cyber threats, this private key will be stored in the transmitter side databases and sent to the side of the receiver in a different way. This approach performs encryption and decryption more effectively for huge information than previous techniques do. With huge

documents with reduced latency, this technique offers a higher pace compared to previous methods.

Keywords: *True random number generation; Cryptography; Encryption; Data Security; Symmetric key algorithm*

COII/EC/230705

Study of Routing Techniques in Hierarchical based Structures of Wireless Sensor Networks

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Over the years, smaller, cheaper and intelligent sensors are available in large numbers. A wireless network can be formed with the help of these sensors because they are equipped with wireless interfaces. This kind of network is called Wireless Sensor Network. The uses of wireless sensor networks contain a wide assortment of situations and in each situation, the network made out of countless nodes deployed in a broad zone. Routing techniques are accountable for finding and keeping up the courses in the network. Nonetheless, the propriety of a specific routing method basically relies upon the capacities of the nodes and network engineering to improve Network lifetime expectancy and energy proficiency of WSN. Specifically, we efficiently investigate routing in various levelled based structures of WSN and think about these diverse progressive based methodologies as per their energy proficiency and network lifetime.

Keywords: *WSN, Hierarchical structure, Grid structure, Chain structure, Tree based structure*

COII/CE/230701

Crack Repair of Concrete Structure Using Bacteria and Basalt Fiber

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Cracks are inevitable in concrete, despite widespread usage in buildings. Microbial self-healing concrete is a novel method that uses precipitated calcium carbonate to repair cracks, lowering the permeability coefficient. A fiber-reinforced self-healing concrete has the potential to be employed in construction because of its durability and resilience. The fiber's bridging activity could lessen the size of the fracture, and the bacteria might release a filler substance to fill in the rest. Microbiological concrete gains in strength and hardness as a result. The four kinds of mixtures created for this research are bacterial concrete, standard concrete, and fiber-reinforced concrete with fibers. Damaged and repaired concrete samples are tested for their compressive strength to determine the concrete's ability to heal and mend itself. Fibers added to bacterial concrete significantly increase the material's durability and strength, as shown by the results of tests conducted in the article.

Keywords: *Crackrepairing, Bacteria, Strength, Basaltfiber, Durability, Microstructure*

COII/CE/230702

Enhancement in Engineering Properties of Expansive Soil using Stone Quarry dust and Lime as additive, a review study on additive improvement

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It is important to note that expansive soils are problematic soils because of their characteristic swell shrink behaviour, that is, when moisture is absorbed, they expand and shrink when not. As a result, even in the absence of moisture shrinkage can be very large since their volume increases after absorption of water by three times. On account of such a property expansive soil exhibits very poor index properties and strength characteristics. In this paper, we seek to examine and reaffirm the results obtained from adding additives rich in cations to such soils, resulting in improvements in swell shrink behaviour and index properties.

Keywords: *Expansive soil, Stone Quarry dust, Lime, Engineering Properties.*

COII/CE/230703

Curing of Concrete Using Curing Compounds

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Due to its notable impact on the cement's hydration, curing has a significant impact on the qualities of hardened concrete, particularly its durability. The development of innovative curing methods and construction chemicals like Membrane curing compounds, Self-curing agents, Wrapped curing, Accelerators, Water proofing compounds, etc. has been made possible by developments in the construction and chemical industries. Conventional curing techniques have been found to be expensive as a result of numerous practical problems, and they have mostly been replaced by Membrane curing compounds and Self-curing agents since they can be utilized in inaccessible locations, vertical constructions, water-scarce places, etc. An effort has been made in this review paper to comprehend the operation and effectiveness of curing technologies that are frequently used in the construction sector and contrasted with the traditional water curing method. Construction is growing quickly today, and as concrete is an essential building material, a structure's performance is crucial to its longevity and depends on a number of factors. Curing is

one of the most crucial variables. Controlling the rate and amount of moisture loss from concrete during cement hydration is known as curing. This can be done in a number of ways, including continuously moistening the exposed surface to prevent moisture loss, spraying water on the surface, leaving the formwork in place, covering the concrete with an impermeable membrane after the formwork has been removed, applying a suitable chemical curing agent (wax, for example), using chemicals as internal curing, or combining several of these methods. An acceptable mix must be used, followed by proper curing in an appropriate setting throughout the initial phases of hardening in order to produce concrete of high quality. It is also vital for the structure's performance and longevity to undergo proper and uniform curing.

Keywords: *Durability, Membrane curing compounds, Wrapped curing, Water proofing compounds.*

COII/CE/230704

Research on construction quality and assembly construction

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Based on the acceleration of the urbanization process and the improvement of the quality of life of our residents, the demand for building construction has been increasing. In this context, the construction industry in order to promote the construction efficiency, quality improvement, to meet the needs of the development of the times to strengthen the new technology, the use of new technologies. At present, India's engineering construction units in the process of carrying out the project to strengthen the use of assembly-type construction technology, which thus achieved for the traditional construction work low-level, high time consuming issues, and promote the steady improvement of production efficiency. Based on this, this paper focuses on the analysis of the connotation of the assembly structure and analyzes the quality problems in the construction process of the construction projects and puts forward the improvement measures to promote the improvement of the building quality and the construction of the Building Construction speed. Based on this, this paper analyzes the structural system and design of prefabricated building.

One of the basic measures of energy efficiency in residential buildings is the reduction of heat and coolant pressure, when external structures - walls, ceilings - contain thermal insulation material, as a result of which heat and cold losses are reduced, as a result of air-and moisture permeability. Their number is largely determined by the climatic zone of the building, construction, sources of heat and cold, fuel and electricity prices in this region. In such practice, first of all, attention is paid to the problems of the optimal thickness of the thermal insulator, the installation location, since improper installation in the structure can cause water condensation, which will lead to partial wear of the structure, since the properties of reinforced-concrete layers will deteriorate. This concerns the peculiarities of carrying out thermal insulation works and their necessity both in under construction and in buildings use.

COII/CE/230705

Improvement of Reinforced Concrete Columns by Using Reinforced Concrete Jacketing

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This paper highlights the review of the behavior and strength of strengthening reinforced concrete columns by reinforced concrete jacketing. As in the case of RC structure, columns are subjected to uniform and non-stop loading, which increases with the boom in a number of stories and might cause partly damage or even general failure of the column. To overcome the whole failure of RC columns, instant attention is needed in and the broken part of reinforced concrete repaired by way of reinforced concrete jacketing. Most of the reinforced concrete (RC) residential buildings situated in earthquake prone areas are not seismically designed. To prevent disaster due to future earthquakes, these deficit structures need to be retrofitted. The objective of this study is to discuss the difference in structure behavior of RCC column after retrofitting by RCC jacketing.

COII/CE/230706

Comparative study on Fly Ash and Bagasse Ash Using as a Sub-Grade Material

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The soil having swelling and shrinking (large volume changes) that are directly related to moisture change .Expansive soil is also considered as problematic soil because of the low bearing strength and high compressible characteristic of soil serve damage to subgrade. In this research the strength of this soil by adding different types of ground improvement materials like as fly ash and bagasse ash in order to overcome such type of damages. The California Bearing Ratio (CBR) test to determine the stability of Subgrade soil by adding fly-ash and bagasse ash separately at different percentages. The changes due to of molding water content and compaction delay, on soaked CBR of both Ashes stabilized expansive soil have also been studied. CBR tests were performed with fly-ash and bagasse ash separately at different percentage variations with the increment of 2.5% by weight in order to find out which one is most suitable for stabilization of subgrade material. The results clarify that initially the optimum moisture content (OMC) of soil is 13.6% and for addition of fly ash and bagasse ash separately up to 12.5% it has become increase up to 19.12% and 15.25% respectively. Initially the CBR value of soil is 6.65%. For addition of bagasse ash up to 10% the CBR value of soil has become increase up to 13.89% and

after then for addition of 12.5% bagasse ash it has become in decrease 13.44%. For fly ash the CBR value for 10% is 15.13%, which is larger than the bagasse ash.

The objective of this paper is to study the combined effects of Fly Ash and Bagasse Ash on Maximum Dry Density (MDD), Optimum Moisture Content (OMC), Soaked CBR and Swelling pressure of expansive soil.

Keywords: *Expansive Soil, Fly Ash, Bagasse Ash, MDD, OMC, CBR, Swelling Index*

COII/CE/230707

Performance Evaluation of expansive soil after its stabilization with quarry/stone dust mixed with Nylon fibers

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Expansive soils, on account of their typical swelling and shrinkage characteristics pose a lot of problems for construction engineers. These swelling and shrinkage characteristics are attributed to presence of certain minerals in expansive soils and they swell in presence of water and shrink otherwise. This alternate swelling and shrinkage, endangers safety of the structures built over such soils and they need to be treated to improve upon such a behavior which can be done either mechanically or by addition of certain admixtures to such soils. If any improvement is done by adding certain admixtures, such improvement is known as additive improvement. In this paper we will discuss about the role of Quarry /Stone dust along with nylon fibers, in additive improvement. During the observations and experimentations the main improvement which was observed was in swelling and shrinkage behavior and certain engineering characteristic of Expansive soil.

Keywords*: Expansive soil, Montemorillonite, Smecite, Quarry dust, Swelling, Shrinkage*

COII/CE/230708

Relativistic Geodesy: A new outlook in the field of precise surveying

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Geodesy is the field which deals with precise determination of the shape and size of the Earth and its gravity field along with the orientation in space. Orientation of the Earth in space can also be determined using geodetic techniques such as Very Long Baseline Interferometry (VLBI), Doppler Orbitography and Radiopositioning Integrated by Satellite (DORIS), Satellite Laser Ranging (SLR) and GNSS. Gravity field of the Earth is a dynamic quantity and can be determined by measuring the acceleration due to gravity. The value of acceleration due to gravity

is measured using both ground based and satellite based instruments. Gravimeters are the instruments which are used to precisely determine the value of acceleration due to gravity.
Determination of the gravity field of the Earth is of great importance. If we can measure the Gravity field of the Earth precisely it can give us information about several processes occurring on and below the surface of Earth. Gravity fields have been used for determining changes in the geological structures, groundwater masses, crustal motions and several other geological Activities. Different methods are adopted to obtain the gravity field of the Earth which includes Geometric leveling, GNSS/geoid approach and the latest Relativistic Geodesy approach, which is dealt in this paper.

Keywords: *Geodesy, VLBI, DORIS, GNSS*

COII/CE/230710

Self Healing Concrete

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Concrete is a material which is the most widely used building material in the world. Natural processes such as weathering, faults, land subsidence, earthquakes and human activities creates cracks in concrete structures .Concrete expands and shrinks with changes in moisture and temperature and this tendency to shrink and expands causes cracks in concrete. We do not like cracks in concrete because cracks form an open pathway to the reinforcement and can lead to durability problems like corrosion of the steel bars. These cracks should be repaired because they can reduce the service life of structure. In case of historical monuments cracks spoils the appearance of structure. Remediation of already existing cracks has been subject of research for many years. The various product such as structural epoxy, resins, epoxy mortar, and other synthetic mixtures are used as filling material but they are not `even safe for structure safety factor.
On other hand modern researches move forward towards Self-healing concrete. It is mostly defined as the ability of concrete to repair its cracks autogenously or autonomously. It is also called self-repairing concrete. Cracks in concrete are a common phenomenon due to its relatively low tensile strength. Therefore, it is important to control the crack width and to heal the cracks as soon as possible. Self-healing of cracks in concrete would contribute to a longer service life of concrete structures and would make the material not only more durable but also more sustainable. Self-healing is actually an old and well-known phenomenon for concrete as it possesses some natural autogenous healing properties. Due to ongoing hydration of clinker minerals or carbonation of calcium hydroxide (Ca(OH)2), cracks may heal after some time. However, autogenous healing is limited to small cracks and is only effective when water is available, thus making it difficult to control. Nonetheless, concrete may be modified to build in autonomous crack healing. Many self-healing approaches are proposed. They mainly include autogenous self-healing method, capsule-based self-healing method, vascular self-healing method, electro deposition self-healing method, microbial self-healing method, and self-healing method through embedding shape memory alloys.

COII/AS/230715

Analysis of Blood Flow in a Stenosed Artery with Permeable Wall

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The present study examines the characteristics of steady blood flow in a bell shaped mild stenosed artery with permeable wall using Casson fluid model. It is assumed that the exchange of fluid across the artery wall obeys Darcy Law, which states that the rate at which a fluid flows through a permeable substance per unit area is equal to the permeability times the pressure drop per unit length of flow, divided by the viscosity of fluid. The expressions for the flow characteristics, namely, the velocity profile, the flow rate, the flow resistance, the wall shear stress, shearing stress at the stenosis throat within the tube are obtained. Discussions are made from a physiological point of view with the help of graphs.

Keywords: *stenosis, slip parameter, Darcy number, impedance, shear stress.*

COII/AS/230718

Flow through Stenosed Catheterized Artery

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We consider the problem of blood flow through a catheterized artery in the presence of a bell shaped stenosis using Casson fluid model. The analytical expression for the blood flow characteristics, namely, the velocity profile, the flow rate, the impedance, the wall shear stress in the stenotic region and the shear stress at stenosis throat have been derived. The combined effect of stenosis and catheterization on flow characteristics is studied for different values of parameters.

Key words: *Stenosis, Casson fluid, Impedance, Catheter, Shear Stress*

COII/AS/230722

Analysis of the Behavior of a non- Newtonian fluid that Impacts on Moving Surfaces at Low Weber Numbers

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The non- Newtonian fluid impact on solid surfaces is a popular research topic in which many researchers focus on stationary surfaces, only a few researches have been conducted for moving surfaces. In this paper, a high-speed photography-based non- Newtonian fluid impact experimental platform and a VOF-based numerical simulation model are built to study the

morphology of motion of a non- Newtonian fluid after it impacted a horizontal uniformly moving surface. In the present study, the tangential and normal Weber numbers range within 70. This is because at such low Weber numbers the droplets initially spread to their maximum diameter after impacting the moving surfaces and subsequently start to rebound. The studies have confirmed that the maximum spreading factor of the non- Newtonian fluid increases linearly with the tangential Weber number, and the spreading time increases as well. The maximum spreading factor of the non- Newtonian fluid increases nonlinearly as a function of the normal Weber number and corresponding time initially increases and then decreases. Finally, the expression for the maximum spreading factor is fitted according to its correlation with the Weber number.

Key word: *non- Newtonian fluid, Weber number, continuity equation etc.*

COII/AS/230730

A study on thermal and structural analysis on vacuum tube - Helix Traveling Wave Tube: A review

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Traveling wave tube (TWT) is a type of vacuum tubes and used as a microwave amplifier. Traveling wave tubes amplifiers are playing an innovative role in communication system with first successful technology of RF power amplifier since birth of space age and covers approx 55%-60% worldwide market surrounded by vacuum tubes for different-different applications. However, traveling wave tube remains in demand for high frequency, high reliability, high power, wideband as well as high efficiency. But the reliability and other parameters of traveling wave tube are influenced by structural and thermal management. The structural and thermal managements are big issue in performance of traveling wave tube. In TWT, a continuous interaction among electron beam and RF wave generates to amplification of RF power when a synchronism in velocity of electron beam and RF wave is maintained. Due to this interaction, high temperature is produced by slow wave structure in operation of TWT as well as produced the deformation effects also. The effects of temperature distribution, thermal conductivity of materials, effects of thermal contact resistance and concept of heat dissipation capability on the circuit of slow wave structure of traveling wave tube have been discussed in this review paper. Hence, this compilation will indeed be helpful for the researchers exploring the fields of thermal management concerned with microwave tubes.

COII/AS/230730

Samsodhana chikitsa - ayurveda for international medical tourism

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Better medical care is an important aspect for promotion of International tourism in many countries. Few countries with their traditional system of medicine are generating a significant

revenue through international and domestic tourists. Samshodhana chikitsa is a very effective tool in Ayurveda for prevention as well as management of many disorders also for the detoxification and rejuvenation of the body. It not only prevent manifestation of many pathological conditions but also manages many widespread disorders viz. Skin conditions, Auto-immune disorders, Metabolic disorders, Psychosomatic, Neurological disorders etc. Also it is one among the best tools of Rejuvenation and Detoxification for healthy individuals. Samshodhana chikitsa can play a very important role in promoting Medical tourism in India as it is a system only available in Indian system of medicine.

Key words: *Samsodhana chikitsa, Ayurveda, Rejuvenation, Detoxification, Medical tourism.*

COII/AS/230732

Preparation and study of mechanical and thermal analysis of Random Polypropylene based composite by using Kevlar fiber

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Plastics now a days are made thermally and mechanically strong to prevent earlier heat degradation and prevention of mechanical degradation. Kevlar fibres received much attention due to its high mechanical property high melting point, high thermal stability and cost compare to nano fibres such as CNT or Graphene. In this research we analyse the effect of Kevlar fibres reinforced with Random Polypropylene (PPR) using twin screw extruder. Concentration of Kevlar fibres are taken as 10%, 15% and 20%. Specimens for characterisation are prepared by injection moulding machine. Different mechanical and thermal tests are performed like HDT, VST. Thermal analysis of the samples is done using DSC and TGA. Rheological test MFI/MVR and mechanical tests like Tensile strength, impact strength, flexural strength is also done to study the change in the properties of the samples. All the tests are compared with respect to reference sample of Pure PPR without Kevlar loading.

COII/AS/230733

Extraction And Characterization of Pectin Derived From Papaya (Carica Papaya) Peels

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Agriculture wastes forms a primary candidate for the generation of high value added products. It is necessary to develop green polymer form agro waste to achieve the goal of circular economy. The present study focus on the potential of Papaya peels as a source of pectin. Pectin was extracted from Papaya Peel powder using nitric acid at three different temperatures, time and pH (60, 70 & 80°C), (30, 45 & 60 min) respectively. The yield of the isolated papaya peel pectin as dry wt of the extract varied from 1.7 to 2% using nitric acid. The best extraction condition was found to be higher in yield by using nitric acid at 80°C, 60min, and 1.5pH. The percent methoxyl

content of isolated pectin was found higher using nitric acid . The pectin extracted using nitric acid in this study can be categorized as high methoxyl as it has more than 50% of degree of esterification. The ash and moisture content of isolated pectin were studied. The isolated pectin was also characterised for functional groups using FTIR.

Keywords: *Pectin, Agro waste, FTIR, methoxyl content*

COII/AS/230734

Anti-Oxidizing treatment of Copper Oxide powder

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Copper oxide is a common material used in various applications including electronics, catalysis, and energy conversion. However, its high oxidation rate and susceptibility to corrosion make it challenging to use in certain applications. To mitigate this problem, anti-oxidizing treatments have been developed to improve the stability and longevity of copper oxide .One promising anti-oxidizing treatment for copper oxide is the use of antioxidants such as boric acid. These compounds can form a protective layer on the surface of the copper oxide, preventing further oxidation and corrosion. The effectiveness of this treatment has been demonstrated in studies where copper oxide coated with antioxidants exhibited improved stability and resistance to oxidation compared to untreated copper oxide. Overall, anti-oxidizing treatments for copper oxide have shown promising results in improving the stability and durability of this material for various applications. Future research may explore additional methods for anti-oxidizing treatment and explore the durability of treated copper oxide under different conditions to optimize performance. In this study, particle size and oxygen percentage in copper oxide was analysed by scanning electron microscope with energy dispersive spectroscopy. The percentage of oxygen was found reduced for modified copper oxide. Also, the particle size was found to be 1-3 µm for modified copper oxide. The anti-microbial activity against Gram Positive staphylococcus aureus and Gram Negative Escheriachia coli were also carried out for the modified copper oxide.

Keywords: *copper oxide , boric acid , antimicrobial activity*

COII/AS/230735

Green Chemistry:- Magic of sustainable development

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Green chemistry, or circular chemistry or sustainable chemistry, is the branch of chemical engineering and chemistry which involves elimination or reduction of harmful substances. It also involves twelve principal of green chemistry for green environment. It applies across the life cycle of a chemical product, including its design, manufacture, use and ultimate disposal of hazardous substance. Benefits of green chemistry include; cleaner Air, cleaner Water, Increased safety and Safer food.

Keywords: *elimination, sustainable, environment, chemical*

COII/CSE_IT/230747

Modern Inpainting Technique Using CNN: Convolutional Neural Network

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The process of creating an image does not end after pressing the shutter button. You will always be pressed by the need to tweak the photos a little bit, to make them look like what you want or whatever it needs to be. You will also need to do this to make your photo in line with your goal on why you took it in the first place. Photo editing can be a way of getting a second chance to get the image the way you would have wanted to capture it in-camera. Editing is also another way you can put your own personal stamp on an image. Certainly, it's not just editing that allows you to do that, but it is another way of making your way of viewing the world stand out, or have a certain feel that makes the image feel like & quot; you & quot;. Sometimes, after taking incredible photos, you will realize the background is not eye-catching and appealing like you wanted. It can be an unnecessary object or the background color that makes the photo less appealing. The only way to please your client is to edit the image by changing the background and using a more attractive one. The background of a picture is very important; that's why you need to get it right at all costs. Image masking is crucial for any photographer; without it, you can mess up the whole image. You use masking to protect certain items in the image; the protection is from any alterations while making changes to the photo. You will preserve parts of the image that are satisfactory while correcting parts that are not. Without image masking, you will destroy many good images when trying to make changes.

Keywords: *Convolutional Neural Networks (CNNs), Image, Fourier Transform (FT), Partial Convolutional Networks (PCNs).*

COII/CSE_IT/230751

Cyber forensics using CNN

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Cyber forensics is use in cyber-crime to scientific methods for definite the cybercrime activities. It deals in collecting of digital images to processing and use in digital evidence for cybercrime. Cyber forensic plays in very important role of criminal investigations. Although lot of research in cyber forensics, but still expected to face of new challenges in future. Analysis of multimedia specifically images photographic, audio recording and video are use in forensics. This paper in identified of specifically digital forensics. There are many methods of digital forensic multimedia analysis. Currently use deep learning (DL), in convolutional neural network (CNN) has proved in classification of digital images and sound analysis techniques. This paper presents a study of

recent research paper and methods in forensic areas use of CNN, with a view and read in the researcher's area. In the section, out of several DL models we have next on CNN and its usage of digital forensic areas. Finally, conclusion and future work are discussed. The review shows that CNN has proved good in most of the forensic domains and still promise to be better.

Keyword: *CNN, RNN, Cyber Forensics, Deep Network*

COII/CSE_IT/230757

Predicting Pregnancy Outcome: A Comparison Between Two Data Mining Techniques

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The outcome of pregnancy is the ultimate consequence of fertilisation activities. Persistent inequities in pregnancy outcomes are major public health concerns. Data mining in healthcare is the largest and fastest-growing discipline in the area of Machine Learning and Artificial Intelligence (AI). The current study aims to present a comparison between two machine learning algorithms and classification models (K-Nearest Neighbours (KNN), and Decision Trees are utilised), for obtaining the most significant predictor variables and constructing a Decision Support System to assist physicians in making better decisions.

The results show that the KNN technique has a prediction accuracy of 74% which is greater than the Decision Tree techniques. The number of prenatal care visits is the primary variable influencing pregnancy outcome.

The research concludes that the KNN method shows higher accuracy and superior performance as compared to Decision Trees as it predicts pregnancy outcomes in a better way. We also conclude that an increase in the number of prenatal care visits would also help in improving the outcome of pregnancy.

Keywords: *Health care; Data Mining; Machine Learning; Artificial Intelligence*

COII/CSE_IT/230758

IoT Secure Ecosystem: The Need of the Emerging Era

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Over the last decade, there has been a continuous increase in the manufacture and implementation of sensing-and-connectivity-enabled technological devices that have replaced "ordinary" physical things. As a result, the Internet of Things (IoT) is eventually becoming crucial for many application sectors. The IoT's broad spectrum of applicability, adaptability, and intelligence are what have led to its explosive rise in recent years. Manufacturing facilities, cities, construction sites, medical facilities, and private residences are all incorporating intelligent objects. Most IoT applications run tasks automatically, without human or real-world objects intervention. The data generation by IOT devices is enormous and all this data is available in public domain inviting hackers to act as their playground. Though this unstructured data captured

by IOT devices needs refinement before use but still the security issues relating to this data is to be taken into account.
Around 30 years after the IoT's inception, civilization is still dealing with serious IoT security issues. IoT devices are interconnected and widely used, therefore cyberattacks affect many different stakeholders in a significant way. Previous incidents demonstrate that the IoT sector contains several elements that can be hazardous to property, the economy, and human health. Manufacturers face trouble in adequately securing IoT devices to encounter these risks. The objective of this paper is to showcase the necessity for safe IoT-related equipments and applications by providing an overview of the IoT security ecosystem. Researchers and manufacturers will benefit from this study's help in assessing and reducing the attacking range on IoT devices.

Keywords: *Internet of Things (IoT), Security, cyberattack, Sensors, Intelligence.*

COII/CSE_IT/230759

Flat Mate Search

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The goal of the Flat Mate Search initiative is to develop a web application platform that links people looking for shared housing. This method offers a practical means for people to locate compatible flatmates who have comparable tastes and lifestyles. The project entails creating a user-friendly online application that enables users to create profiles, find prospective flat mates using filters like location, hobbies, and money, and message them. Users of the site can enter confidential data into their profiles, such as their name, age, gender, interests, and employment information. Additionally, they can designate their ideal location, spending limit, and other needs for their area. Users can then look through prospective roommates and living arrangements after the system matches users based on their tastes. We used HTML, CSS, and Bootstrap for the front-end portion of our online application, and PHP and MySQL for the back-end portion. Our web application will be much more helpful to those who use it.

Keywords: *HTML, CSS, BOOTSTRAP, PHP, MYSQL.*

COII/CSE_IT/230760

Luggage Detection & Approval in Airports using CBIR

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Airport security is a critical concern in today's world, and luggage detection and approval play a vital role in ensuring the safety of air travel. In this paper, we propose a novel approach to luggage detection and approval using content-based image retrieval (CBIR). Our approach leverages CBIR to match the images of the luggage captured by the security scanners with the images of approved luggage stored in a atabase. First develop a feature extraction pipeline that extracts relevant visual features from the luggage images, such as colour, texture, and shape. Then use these features to index and search the database for matching images. To evaluate our approach, we collect a dataset of luggage images from a real-world airport and compare the performance of our approach with state-of-the-art methods. Our results show that our CBIR approach outperforms other methods in terms of accuracy and speed. Also investigate the robustness of our approach to different factors, such as lighting conditions, camera angles, and occlusions. Our experiments show that our approach is robust to these factors and can effectively detect and approve luggage in various scenarios. Overall, our approach demonstrates the potential of CBIR for enhancing airport security and improving the efficiency of luggage detection and approval.

Keywords: *Airport, security, CBIR, Luggage.*

COII/CSE_IT/230761

Loan Eligibility Prediction System

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In the modern financial system, banks give firms or people looking to buy anything the necessary initial investment. To assess a borrower's creditworthiness and forecast the possibility that they will be granted a loan. For lenders, banks, and financial organisations, a loan eligibility prediction system can be helpful in automating the loan application process and determining the risk of giving money to a certain applicant. It is a piece of software that uses techniques for data analysis and machine learning. The system includes compiling data on sanctioned loans and loan applications from a variety of sources. The data contains facts on the borrower's income, job history, debt-to-income ratio, loan amount, loan period, and other relevant information. The data is then prepared for use in the machine's training by being cleaned, preprocessed, and transformed. Then, relevant traits that can influence loan eligibility are identified from the data. This entails creating new factors or changing the ones already in use to predict loan eligibility. Following the division of the data into train and test sets, a machine learning model is selected and trained from different algorithms that are available. The testing set is used to evaluate the model's performance after it has been trained on the training set. After the method for predicting loan eligibility is created, it can be incorporated into a programme that banks and lenders can use

to determine loan eligibility. The loan eligibility decision-making process should be well explained in the application, which should also be easy to use. To make sure the model is reliable and useful over time, the loan eligibility prediction system should be constantly reviewed and updated with fresh data. In conclusion, a loan eligibility prediction system will be a useful tool for banks, financial institutions, and lenders to automate the application process and determine the risk involved in giving money to a certain borrower. The system entails gathering, pre-processing, and manipulating data; extracting pertinent features; choosing an appropriate machine learning model; training the model; and implementing it in a lending and banking application.

COII/CSE_IT/230762

Email Spam Filtration Using KNN Algorithm with Particle Swarm Optimization and Other Machine Learning Methods

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In modern life, social network is an online platform extensively used as communication tool in order to build social relation, and email is one of them. Spam mails have become a serious matter of concern on internet in recent times. Hackers get the chance to abuse emails and steal its information for an illegal purpose. Classification of Emails present a lot of challenges because of large number of mails. Different machine learning techniques such as K-Nearest Neighbour, Naïve Bayes,SVMand Decision treehave repeatedly been used to tackle these spam mails. Our approach is based on using the KNN algorithm – one of the simplest and efficient classification algorithms and to obtain the maximum accuracy for the best results having small processing time enough for detecting spam mails. Feature extraction is implemented using Particle Swarm Optimization (PSO) which efficientlyprovides good result for the proposed algorithms in this paper.

Keywords: *Spam detection, KNN, Naïve Bayes, Feature selection, PSO.*

COII/MBA/230706

Role of Successful Branding in Social Marketing

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The article focuses on the role and importance of branding in social marketing with the help of successful social marketing brands. Barriers for successful branding for a social product like – health, smoking or safe driving campaign, are discussed. Like the four P's required for marketing of any offering, social marketing brand involves five C's – Change-orientation, Competitive, Compatible, Caring and Culturally appropriate. The challenge of social marketing lies in complementing rather than compete with community mobilization and structural changes and in increasing the occasions and the number of times it is chosen as the 'preferred brand' for individual/societal change. For a successful branding of social marketing three main points are

important – committed and extensive private sector involvement, creation of academic programs and legitimization of social marketing as a scholarly field of study.

COII/MBA/230707

Effectiveness of Internet Advertising on Consumer Behavior

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Advertisers are expected to shift and spend lakhs in Internet Advertising in the coming years than TV, Print ads and other traditional advertising media. With the rapid growth in technology, the internet is becoming an important one stop point for consumers in finding most of their needs. Be it communication, entertainment, shopping, information search, internet serves as a panacea for all their requirements. Many consumers are online every day for their personal work, but do they notice the ads, banner displayed on that webpage, and most important their recall value. The current study investigated the effectiveness of Internet Advertising on Consumer Behavior by conducting a case study of AMIT Students. The study sought to determine the effectiveness of Internet Advertising on reach and creation of awareness; to establish the reliability of internet advertising through recall; and to determine the relationship between internet advertising and purchase decision. The study used a case study research design. The target population was the AMIT Students. The study was stratified sampling technique to select 50 case respondents. The primary data was collected using questionnaires. Content analysis was used to analyze qualitative data while the quantitative data was analyzed using descriptive statistics using SPSS. Regression and Correlation anal was used to show the relationships among the variables. The datavwas presented through percentages, means, standard deviation and frequencies. The study found that internet advertising was effective on reach and creation of awareness due to diverse usage, and established that its reliability as an advertising media to low compared to TV. Internet Advertising has significant relationship with purchase decision of the consumers and therefore is a key determinant in influencing consumer behavior. The study determined that there is a positive relationship between internet advertising and consumer purchase decision and further recommends that companies should conduct a market research on the different markets in various countries to ensure that the internet advertising initiatives being implemented suits the targeted markets to improve product purchases.

COII/MBA/230708

Insurance Sector in India - A Conceptual Study

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Market research and finalizing on segmentation, targeting and positioning the strategy would focus on the marketing mix namely, Product, Price, Place and Promotion. While determining the implementation methodology, the four characteristics viz. Intangibility, Inseparability, Perish

ability and Variability gives rise to certain unique requirements that deserve careful attention while formulating the marketing strategy for insurance. After implementation, the insurers should concentrate on the effective control that would enhance their business. In India Insurance is sold and not bought. The agents / Advisors by using various strategies sell the product by convincing the customers. Service sector is the lifeline for the social economic growth of a country. It is today the largest and fastest growing sector globally contributing more to the global output and employing more people than any other sector. The real reason for the growth of the service sector is due to the increase in urbanization, privatization and more demand for intermediate and final consumer services. Availability of quality services is vital for the well being of the economy. In developing economies, the insurance sector still holds a lot of potential which can be tapped. Majority of the people in the developing countries remains unaware of the functions and benefits of insurance and it is for this reason that the insurance sector is still to grow. Tangible or intangible – an individual can insure anything! Be it a house, car, factory, or the voice of a singer, leg of a footballer, and the hand of an author etc. It is possible to insure all these as they have the possibility of becoming non functional by any disaster or an accident. On a product basis, investment-linked insurance products continued to perform worse than traditional products with guaranteed returns. Meanwhile, premiums in most emerging market countries, particularly in Asia, continued to grow, albeit at a slower pace. As major investors, life insurers profited from the recovery of stock and credit markets. Profitability and risk capital also improved as capital markets rebounded, but have not yet returned to their pre-financial crisis levels.

COII/MBA/230713

Role of Training in Risk Management

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The risks associated with the Construction industry are commensurate with their rapid growth and development. Apart from their utility, Constructions have their own inherent properties and hazards. Some of them can be flammable, explosive, toxic or corrosive etc. The whole lifecycle of a Construction should be considered when assessing its dangers and benefits. Though many of Construction accidents have a limited effect, occasionally there are disasters like the one in Bhopal, India, in 1984, where lakhs of people were affected and LPG explosion in Vizag refinery where huge property damage in addition to 60 deaths was experienced. Therefore ,Constructions have the potential to affect the nearby environment also. This paper describes the current trend of safety management training in India. It is the great determination of the Indian Government to improve health and safety of workers in the industrial undertakings, in particular the construction industry. The new policy is to place emphasis on safety management and new legislation is being enacted. It upsurges a great demand of safety professionals as well as engineering professionals who can manage safety. Tertiary educational institutions take vital roles in increasing and developing more training programmes for the engineering and construction students. With this regard, new curricula are prepared for full time undergraduate students, more part-time courses.

Short courses of different levels are being launched to meet the imminent needs in the industry. The author will generally account on statutory requirements on safety officers, training of safety officers in India. The existing safety programmes and syllabi of engineering and construction students are reviewed. To cope with the new move, more safety topics especially, more elements of safety management will be incorporated in the training programmes. At the same time, new courses of certificate level, degree level and higher degree level are being organised and implemented. Future trends of safety management training and its implication are discussed. The intent of this document is to assist organizations in achieving their desired safety performance objectives while allowing them to choose the best way to reach that outcome. This is commonly known as a "performance based approach," and encourages organizations to choose the solution that best suits their needs and ensures they meet their performance objectives. The toolkit helps the organization determine their level of compliance and develop an action plan to include the necessary components.

COII/MBA/230725

Design Thinking and How It Will Change Management Education: An Interview and Discussion

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Dunne, David & Martin, Roger & Rotman, Joseph. (2006). Design Thinking and How It will Change Management Education: An Interview and Discussion. Academy of Management Learning & Education. Roger Martin, dean of the Rotman School of Management, University of Toronto, is interviewed on the subject of "design thinking approaching managerial problems as designers approach design problems and its potential impact on management education. Under a design-thinking paradigm, students would be encouraged to think broadly about problems, develop a deep understanding of users, and recognize the value in the contributions of others. In Martin's view, the concept of design thinking can potentially address many of the criticisms currently being leveled at MBA programs. The interview is followed by a discussion and critique of the themes Martin raises.

COII/MBA/230734

The Effect on the Telecom Industry and Consumers after the Introduction of Reliance Jio

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Reliance Jio Info COMM Ltd (popularly known as Jio), is an Indian mobile network operator launched commercially on September 5, 2016. Owned by Reliance Indus-tries, the entry of Jio revolutionized the telecommunication sector. In this project the success story of this recent

entrant and management principles adopted by the company were analyzed on the basis of researches and studies conducted in deseed. The organizational structure, planning and marketing strategy, staffing and recruitment, SWOT analysis, PEST analysis, promotional strategy, the impact of Jiolaunch, Government policies, controversies surrounding Reliance Jio, its ventures, collaborations and future projects were also discussed in detail. In a world where all industries are fiercely competitive, the telecom industry is not immune to falling behind. With the notion that the customer is king, every firm in India is willing to go to great lengths and cross boundaries every day in order to be the one brand that people seek. When picking a network, one considers a variety of aspects such as network coverage, call rates, internet plans available, and, of course, value-added services. It is difficult to satisfy customers in each of these areas. The study problem of the research paper is "The Effect on Consumers and the Telecom Industry after the Introduction of Reliance Jio," based on the literature review and after examining the questions we want to address. The topic primary concerns how the telecom sector was before and after jio, want people believe and perceive about Reliance Jio, and what obstacles competitors encountered as a result of Jio's debut.

COII/MBA/230735

Smart Villages: Innovative Solutions for Sustainable Rural Development

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The paper discusses Smart Villages as a solution to improve the lives of residents in rural areas from India, streamline administration and develop the economic environment by building on local strengths, opportunities, and the latest technologies. It highlights the challenges faced by rural areas in India, such as access to basic amenities like clean water and electricity, and how smart villages can address these challenges using solutions like solar power and water filtration systems. The objectives of Smart Village projects are to provide villagers with the benefits of an uplifting and modern lifestyle while preserving the values, traditions, and customs of rural communities by understanding the benefits of a sustainable and healthy lifestyle. The Smart Village projects rely on a participatory approach to develop and implement local strategies that can be funded from public and private sources. The projects include health, education, economy, sustainability, digitization, renewable energy, food, awareness, and civic engagement.

The paper also outlines the stages of implementing a smart village project, including analysis and strategy, design and development, implementation, monitoring and optimization. It discusses the benefits of implementing smart village projects, including digitization, personalization, funding, and sustainable development. The article provides examples of smart village projects around the world, including a complete village in Innisfil, Canada, and a climate-smart village initiative in Rwanda. Overall, Smart Villages are a promising solution for rural areas, and their implementation can provide immediate benefits for the inhabitants, the institution, and the economic environment.

Keywords: *smart village, rural development, technology, sustainability*

COII/MBA/230736

Tourism Marketing & Marketing Innovation in India

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This paper explores the business opportunities for tourism marketing via marketing innovation ideas and plan for digitalization in different sectors in India, such as: tourism, healthcare, and retail, emphasizing the importance of innovation and finding solutions that meet the needs of different types of worldwide consumers. The power of WOM (word-of-mouth) Marketing will highlight the importance of creating engaging videos and visuals that showcase the unique attractions and culture of India, as well as the effectiveness of engaging macro, micro, and nano influencers to reach a wider audience. The paper suggests creating regional promotion videos that highlight local cuisine, landmarks, natural wonders, and traditional festivals in order to attract tourists and encourage them to explore more of what India has to offer. The paper also proposes incorporating innovative solutions, such as augmented reality and virtual tours as a way to enhance the customers' experience and provide a more immersive view of the local culture and attractions. It also emphasizes the importance of collaboration between businesses and stakeholders in the tourism industry and to develop online platforms and marketing campaigns to easily promote India as a travel destination. Overall, this paper provides valuable insights into the Indian market and offers practical strategies for businesses looking to expand and succeed in this growing economy.

Keywords: *Indian tourism, marketing innovation, promotion, digitalization*

COII/MBA/230737

A Study of Platform Typologies and Brand Architecture

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Digital platforms have grown exponentially in the past few years and there has been a diverse array of research in the topic from different perspectives. However, the implications of platforms from branding aspects remains limited. This work, studies the platform from two perspectives 1) reviews various classifications of platforms; 2) portfolio strategies and architecture of platform brands. A representative sample of more than 20 platforms brands across major categories is taken and their brand portfolio strategies and architectures are reviewed. The findings offer insights regarding the impact of attributes such as network effects, brand architecture and how the different types of platforms can leverage the same to strengthen their brand portfolio. The study concludes with implications for theory and practice that has the potential to push the boundaries of branding thought in the emerging domain of platforms.

Keywords: *Digital Platforms; Platform Branding; Brand extension; Brand architecture, and brand portfolio strategies.*

COII/MBA/230738

Transforming & Enriching Management Education in India in the Light of New Education Policy, (NEP) 2020

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The purpose of any policy is to solve current problems, attempt solution for potential problems and challenges that are likely to appear in the future, with an object to achieve long term goals. National Education Policy (NEP) 2020 is one such policy, which bolsters confidence that management education in India will undergo metamorphosis, and become more aligned to societal realities and needs. The management education, particularly in India has often been criticized for not being in tune with the societal needs. In formal and informal discussions, one cannot fail to note the criticism. The criticism range reflect the realities of contemporary management education in India. These could be: a) the students that received MBA degrees are not able may be well-versed with theoretical constructs but do not have ability to put the theory to use in practice; b) is the knowledge, whose basis is achieved through analysis and logical sequential thinking based education fracture like brittle glass no sooner it is tested on ability to synthesize solutions to real world problems?; c) often faculty is criticized for communicating knowledge from books with little relevance to the real world, being highly "bookish".

Our paper identifies many problems of management education through rigourous literature review while connecting these to three core aspects of NEP, 2020. These core aspects being a) NEP 2020 proposes a digital credit bank and exit of students at various stages of their studies thereby facilitating acquisition of apprenticeship based experiential knowledge while enabling them to accrue resources to further fund their studies. B) NEP 2020 mandates holistic cross disciplinary education. Management education, in words of the great management guru Peter Drucker is liberal art. By fracturing rigid boundaries of various disciplines of management, this encourages management educators to provided flexibility in choice of subjects thereby making education for holistic and multi and cross disciplinary. C) The policy encourages management institutions to borrow from Indian Knowledge Systems and Traditions to not only reinforce holistic learning but also orient student to connect with their roots while making them relevant to institutional context of India.

We finally conclude the paper by identifying recommendations for implementation while accepting certain limitations in our study.

Key words: *NEP 2020, Management education, MBA, Indian Knowledge System, India*

COII/MBA/230739

Digitalization Impact on Industry 4.0 Business

(ERP Systems can be a Solution for Business?)

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Attempting to develop and improve results, companies had expanded their business in tools and solutions that allow process automation as a consequence of the industry's progress toward digitalization. For the most of companies that want to automate their processes and have a

sustainable business, the impact of the digitalization concept on the business has evolved into a very special topic. Digital transformation has emerged as a consequence of improvements in the economic and IT environment, that have an impact on company expectations and behavior The purpose of this paper is to examine how digitalization and industry 4.0 affect business, with a focus on whether or not ERP systems are a viable business solution. The approach to the research was The systematic review of the literature was the research methods utilized. The selected articles aim to clarify the terms "industry 4.0," "digitalization," and "advantages and drawbacks of industry 4.0," in addition to show that ERP systems are the best choice for business process automation. The results showed that if firms adopt an ERP system, digitization and industry 4.0 have a significant impact on their effectiveness and sustainability. In conclusion, ERP systems are advantageous for firms.

Keywords: *Industry 4.0, digitization, ERP systems, adaptability, and Flexibility.*

COII/MBA/230741

In-depth analysis of Metro Railways

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In the modern scenario, improvement in infrastructure plays an important role in the contribution of the GDP of the country. We are living in the fast developing society in which new technologies are almost made and updated every day. And all these technologies helps in improving the standards of lifestyle of people like never before. Just like this the introduction of the metro rail system in major Indian cities has resulted in the improvement in transport as well as infrastructure of the company. There is no doubt, that when the country's urban transport was becoming more and more complex, the decision to had metro rail in the city made a big difference.
In this paper, various topics related to metro such as it's significance, critical issues related to it, how it impacts the daily life of people, etc. are detailed.

COII/ME/230709

Experimental Research on AISI 1020 Mild Steel Autogenous Tungsten Inert Gas (TIG) Welding

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When a high level of weld quality or significant precision welding is required, gas tungsten arc welding (GTAW), also known as tungsteninertgas welding, is a recommended option. TIG welding's main disadvantages are its slow welding speed and limitation to only welding thinner materials in a single pass. Autogenous TIG welding was used in this project to join 5 mm thick AISI1020 mild steel plate without the use of filler material. To achieve complete penetration welding, a wide range of welding current and scan speed were tried. Activated flux has also been used to deepen welds. The tensile strength and weld bead geometry of welds performed while

maintaining different spacing between the plates to be welded have been tested. Full penetration welding of plates is demonstrated to be possible by maintaining a suitable distance, producing strength that is nearly identical to the base material.

Keywords*: Tungsten Inert Gas (TIG) welding method, Activated Flux, Tensile Test, Hardness Test, and Hardness Test.*

COII/ME/230722

Electroplating of Copper on Tungsten Powder

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Strengthening, resistant and protecting properties, to call a few, may be finished by means of implementing a floor cloth coating onto an engineering thing. Diverse elements of those compounded parts can augment the functionality of the component, along with, expanded life time and greater interactive surfaces. Tungsten has established to be a assignment to plate with different metals, however if done effectively, the effects can permit for the cold spray of tungsten. Bloodless spraying tungsten debris on my own provides a venture due to the fact the powder is just too tough and instead of adhering, it erodes the floor it is attempting to plate. Coating tungsten in a softer metallic, like copper, will allow for the debris to stick to the surface and create a strengthened and radiation shielded element. It also yields a higher surface to electroplate onto inside the future, as tungsten itself is hard to plate onto, so the copper layer offers the capability to easily plate other metals. The cause of this studies paper is to encapsulate tungsten powder within copper, then scale up the system to produce bulk amounts of the material in a batch system. The particles will been cased using an electroplating method, that has been turned into a semi-self reliant procedure for the ease of producing bulk powder. While electro less deposition has previously shown fine results for accomplishing a uniform coating, making it a semi-batch process for bulk material might have an extreme value in assessment to electrolytic deposition. The tungsten debris have been efficiently enclosed in copper by means of electrolytic deposition in this set of experimentation the use of an HF electro-etch pretreatment and ultrasonic agitation for the duration of electroplating. Similarly experimentation will consist of progressed techniques of stirring and shifting powder, because the transfer takes too long between the etch and the onset of plating and the stirring method is cumbersome and reduces the region that can be efficiently plated on.

Keywords: *resistant, Tungsten, Coating, electrolytic deposition*

COII/ME/230730

Experimental Investigation of Mechanical and Wear Properties of Carburised Mild Steel for Different Carburising Temperatures

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Carburisation is a heat treatment method in which steel or iron or low carbon steel is heated in the presence of carbon containing material and it absorbs some carbon content. Carbon bearing materials are charcoal or carbon monoxide. The aim of this is to make the metal or low carbon material harder. The carbon content can vary in affected area according to the amount of time and temperatures. The higher carburising temperatures and longer time increases the depth of carbon diffusion. The outer surface of an iron or steel that has been cooled rapidly by quenching becomes hard due to the transformation from austenite to martensite , while the core remains soft and tough. Extensive effort has been done to observe the mechanical properties of the material. This work aims the study of mechanical and wear properties of carburised mild steel at different temperature range. Examining how these various carburization temperatures and circumstances affect the mechanical and wear characteristics of the carburized mild steels has been the goal. In the present work the wear and mechanical properties of sample mild steel are to be studied that are carburized at with several temperatures between 800°C to 960°C. From the study this is obtained that through application of heat treatment the wear resistance, Tensile Strength and hardness are increased. The objective at here is to examine the result of different carburization temp. on wear and mechanical properties for sample M.S (mild steel). To achieve the mentioned parameters, sample mild steel is first carburised at various temperatures before tempering is carried out at constant temperature with a half hour soak period. When the sample is prepared they are subjected to different test such as toughness test, hardness and abrasive wear test.

Keywords: *Carburisation, Mechanical Properties, Mild Steel, Carburization Temperature, Toughness Test*

COII/ME/230731

Fea Processes for Thermal-Fatigue of Monocrystalline Heat-Resistant Super Alloys

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In this present work, the accurate and efficient calculation method thermal elasticity, plasticity, creep of a Super alloy (heat-resistant mono nickel-based alloys Nimonic PE16).

Research object: Simulation is going of the thermal fatigue strength of monocrystalline Nemonic PE16 super alloy at different thermal co-structural conditions at variable exposure times.

Purpose of the study:

1. Determination of non-stationary temperature fields during heating sample and comparison with experimental data for different temperature conditions monocrystalline Super alloys.
2. Investigations into the effect of exposure time on thermal fatigue durability, taking into account the processes of inelastic deformation for various temperature regimes, Nimonic PE16 alloys, and their comparative analysis. In the course of work, the FE packages ANSYS 18.0 are used. Because of the study, the calculated temperature distributions showed good correlation with experiment for all modes, for various alloys and at various temperature conditions,

calculated curves of the influence of the holding time on the thermal fatigue strength. Which were verified using experimental data and they also showed good correlation with it. Then use the 3D model created by Solidwork software to import ANSYS for geometry and mesh processing. Finally, the ANSYS software is used to solve the finite element, and the response of the structure to displacement stress under different loads and dynamic environments is obtained. Carry out structural strength.

Keywords: *Thermal and Structural boundary value problem, Parallel Analysis, Deformation criterion thermostatic failure, finite elemental simulation, Ansys.*

COII/ME/230732

Multifinger Robotic Gripper: Review

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The multifinger robotic gripper has the ability to manipulate the object with different geometrical sizes and structures. The design and development of the robotic gripper play an important role in grasping objects. The robotic gripper is designed, keeping in mind the function and design of the human hand. The gripper mimics the human hand. Precision and dexterity are important nowadays for the design of the robotic gripper. Various researchers are working on the design as well as the development of the robotic hand. The two, three, four and five finger robotic grippers have been developed with different shapes and sizes to perform basic to complex tasks in industry as well as in domestic work. This review paper mainly focuses on the various types of robotic hand with their specialty, as well as the applications.

Keywords: *Degree of freedom (DOF), Robotic hand, Actuators, Gripper, Sensor, Dexterity, End-effector*

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Path Planning and Trajectory Tracking for Automatic Guided Vehicles

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Automated guided vehicle technology has become a hot area of scientific research due to its increasing use in manufacturing and logistics. Its main features are programming and control, remote computer eye tracking, command receiving and execution, autonomous route planning, and autonomous driving execution of tasks, with the advantages of high intelligence and flexibility. In this work, a simple vehicle model is used to study the route planning and tracking control of automatic guided vehicles, is paper uses wireless communication to and the optimal route planning problem. Using geometric methods, we develop a model of the working environment of the mobile automatic guided vehicle and develop a route finding algorithm. Based on the kinematic model, an advanced routing controller is designed to conduct

experimental simulation of two trajectories and verify the efeffectiveness of the trajectory tracking controller. When the time is after 2 s, the position error is almost completely zero. In the path planning, when the number of iterations is greater than 10, the path length remains constant, verifying the effectiveness of the method of this review article.

COII/ME/230735

Optimizing the Wear Properties of Epoxy-based Composites Reinforced with Al2O3 Nanoparticles and Metal Wires using DOE Techniques

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This study investigates the mechanical properties of an epoxy-based composite material reinforced with Al2O3 nanoparticles and metal wires, and uses design of experiments (DOE) and machine learning (ML) techniques to optimize its attributes. The Al2O3 nanopowder was characterized by SEM and used in volume ratios of 0-5% to create composites with 50-100 nm nanopowder. ANN models were trained on the resulting data to predict the tensile strength of the composite under different conditions, with mean absolute errors of 5% and 10% for the training and test sets respectively. The results demonstrate the effectiveness of machine learning in predicting the mechanical properties of composite materials and optimizing their design. Overall, this research provides valuable insights into the use of Al2O3 nanoparticles and metal wire reinforcement for improving the mechanical characteristics of epoxy-based composites.

Keywords: *Mechanical Properties, Epoxy, Metal Wire, nano particle, machine learning, ANN, Error analysis*

COII/ME/230736

IOT Based Healthcare Monitoring Robot

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The Internet of Things (IoT) has revolutionized the healthcare industry, with the development of IoT-based healthcare monitoring robots. These robots offer several benefits, such as remote monitoring of patients, real-time data analysis, and personalized care. This review paper aims to provide an overview of the current state of IoT-based healthcare monitoring robots, their applications, and future directions. The paper also highlights the challenges and limitations associated with the development and deployment of these robots.

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Improvement of power Quality using DVR with PI Controller

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This research paper is all about power quality issues, and how to resolve these problems. Power Quality is the abnormal behaviour of power system that arises in the form of voltage and current, affect the Electrical and Electronic equipments in the power system. There are a number of custom power devices which are used to resolve these issues. Dynamic Voltage Restorer (DVR) is one of the most common devices which we are using now days. In DVR (using a three-phase voltage source inverter with voltage loop control (PI)), to detect the voltage drop system using park transform and apply it to the voltage regulator as a control system function that detects the voltage amplitude at the sensitive load continuously . This paper is about basic working of DVR and with simulation results. MATLAB is one of the known software which we are using for our project. MATLAB confirmed the effectiveness of the DVR.

Keywords*: Power Quality, DVR, three-phase voltage source inverter, voltage loop control (PI), MATLAB*

COII/EC/230706

Groundwater Quality: The Application of Artificial Intelligence

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Humans and all other living effects depend on having access to clean water, as it's an necessary essential resource. thus, the development of a model that can prognosticate water quality conditions in the future will have substantial societal and profitable value. This can be fulfilled by using a model that can prognosticate unborn water quality circumstances. In this study, we employed a sophisticated artificial neural network (ANN) model. This study intends to develop a mongrel model of single exponential smoothing(SES) with bidirectional long short-term memory(BiLSTM) and an adaptive neurofuzzy conclusion system(ANFIS) to prognosticate water quality(WQ) in different groundwater in the Al- Baha region of Saudi Arabia. Single exponential smoothing(SES) was employed as a preprocessing system to acclimate the weight of the dataset, and the affair from SES was reused using the BiLSTM and ANFIS models for prognosticating water quality. The data were aimlessly divided into two phases, training (70) and testing (30). Effectiveness statistics were used to estimate the SES- BiLSTM and SES- ANFIS models ' vaticination capacities. The results showed that while both the SES- BiLSTM and SES- ANFIS models performed well in prognosticating the water quality indicator(WQI), the SES- BiLSTM model performed stylish with delicacy(R = 99.95 and RMSE = 0.00910) at the testing phase, where the performance of the SES- ANFIS model was R = 99.95 and RMSE = 2.2941 × 100- 07. The findings support the idea that the SES- BilSTM and SES- ANFIS models can be used to prognosticate the WQI with high delicacy, which will help to enhance WQ. The results

demonstrated that the SES- BiLSTM and SES- ANFIS models ' vaticinations are accurate and that both seasons ' performances are harmonious. analogous examinations of groundwater quality vaticination for drinking purposes should profit from the proposed SES- BiLSTM and SES- ANFIS models. Accordingly, the results demonstrate that the proposed SES- BiLSTM and SES- ANFIS models are useful tools for prognosticating whether the groundwater in Al- Baha megacity is suitable for drinking and irrigation purposes.

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Smart City Automation Using Arduino

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The scope of this paper is to implement some ideas for smart city based on ARDUINO UNO technology. Most of the world's population lives in the cities. By 2030, the population of the cities around the world is expected to grow from 8 billion to 10 billion. Due to increasing population, the utilization of vehicles is increasing in large numbers. There are numerous vehicles that keeps running on the streets in the same time, as a result of this the traffic issues are being confronted. To improve this, it is necessary to develop the smart cities. The main point that defines smart city includes Traffic signals, Car parking, Street Lights, Railway Crossing, Water Management.

Keywords: *Arduino, Sensors, LED's*

COII/CE/230709

Sewage/Wastewater Treatment Plant

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A sewage treatment plant is quite necessary to receive the domestic and commercial waste and removes the materials which pose harm for general public. Its objective is to produce an environmentally-safe fluid waste stream (or treated effluent) and a solid waste (or treated sludge) suitable for disposal or reuse (usually as farm fertilizer). The growing environmental pollution needs for decontaminating waste water result in the study of characterization of waste water, especially domestic sewage The dirty water that comes from homes and businesses as a result of laundry, using the bathroom, and all the soapy water that comes from washing dishes and the likes in the kitchen is what we call sewage or wastewater. Rainwater entering drains and industrial wastes also appear to fit under this category. Sewage is treated by a variety of methods to make it suitable for its intended use, be it for spraying onto irrigation fields (for watering crops) or be it for human consumption. Sewage treatment mainly takes place in two main stages: Primary and Secondary treatment. In arid areas, where there is not enough water, sewage also undergoes a tertiary treatment to meet the demands of the drinking water supply. During primary

treatment, the suspended solids are separated from the water and the BOD (Biochemical Oxygen Demand) of the water is reduced, preparing it for the next stage in wastewater treatment.

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A Landslide Case Study: Geotechnical Investigation

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For hundreds of years human has attempted to govern the character for his or her blessings and to a degree, they have performed in harnessing the mom Nature. in the course of the ancient instances, human had a touch expertise about the character and its functioning, but as the time elapsed more innovative technologies evolved, population price multiplied and the land come to be scarce, as a end result human grow to be grasping for their personal desires, a number of failures other than herbal calamities started to strike – the artificial disasters. The paper in particular targets at analyzing the geotechnical components of a landslide passed off near Muvattupuzha, Ernakulum district, Kerala. The study includes the primary investigations of the site, collection of soil samples, trying out of samples, and analysis of check results with clinical theories, undertaking slope stability analysis and subsequently figuring out the root reasons of land slide.

Keywords: *Landslide, Factor of safety, Slope stability, shear parameters.*

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