



PRAMANNA

-A Promise of knowledge

By

**Electronics and Communication Engineering
Department**

**G.Narayanamma Institute of
Technology and Science for Women**

**JANUARY, 2024
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Message from The Principal



Dear Readers,

I am delighted to express my sincere salutations on the propitious occasion of the presentation of the volume-2 issue-1 of the Technical Magazine, "PRAMANA- A Promise of Knowledge", which focuses on the ever-changing area of Electronics and Communications Engineering. The Department of ECE has always upheld excellence, surpassing the limits of knowledge and exploring new frontiers. This periodical attests to the relentless assiduity, unwavering determination, and fervent zeal of our esteemed faculty and students who have made pioneering contributions to the field. Inside, you will discover cutting-edge research, pragmatic insights, and industry trends.

I entreat each one of you to embrace the culture of novelty, inquisitiveness, and life-long education that defines our area of expertise. I hope that you benefit from an enlightening and enriching reading experience. May this magazine serve as a continual source of inspiration and encouragement to all of us as we jointly delve deep into the endless horizons of Electronics and Communications Engineering. Warm regards,

Dr K. Ramesh Reddy,
Principal, GNITS

Message from Head of the Department



Dear Students, Faculty, and Enthusiastic Readers,

I am thrilled to present the volume-2 issue-1 of our department's Technical Magazine PRAMANA. This publication is a testament to the extraordinary creativity and proficiency that characterizes the field of Electronics and Communications. The tireless efforts of our exceptional students, accomplished faculty, and devoted department have yielded this remarkable magazine.

As the Chief Patron, it is a privilege to witness this momentous occasion in our department's journey. Electronics and Communications is a constantly evolving area that has a vital role in shaping our contemporary world. Our department has always been a leader in research, innovation, and education in this field, and this publication exemplifies our unwavering commitment to excellence.

This magazine is more than a mere collection of articles; it represents the ethos of innovation, cooperation, and academic eminence that distinguishes our department. Electronics and Communications is a domain that propels progress in modern times, and our department has persistently demonstrated its expertise in both research and education.

My most sincere gratitude goes to all the contributors, editors, and individuals who have played a role in this magazine's fruition. Your dedication and hard work have yielded fruitful results. I am excited to witness the impact that this magazine will have in promoting knowledge-sharing and inspiring innovation in our department.

Given the world's increasing interdependence and reliance on technology, the importance of our field cannot be overemphasized. I am confident that the articles and insights presented in this magazine will contribute to the progress of Electronics and Communications and will stimulate future generations to surpass existing boundaries.

I urge all members of our department to engage actively with this magazine, share your viewpoints, and contribute to its continued success. Let us leverage this platform to showcase our accomplishments, share our knowledge, and collaborate on projects that will shape the future.

Once again, my heartfelt congratulations to the entire team responsible for the Technical Magazine. May it thrive and radiate excellence as a beacon for our department and the broader community.

Best regards,
Dr. K. Ragini,
Professor and Head, ECE Department, GNITS

Editor in Chief's Message



Dear Readers,

Greetings from the editorial desk of our Technical Magazine: Pramana – A Promise of Knowledge! I am delighted to present to you the second issue of our publication, which continues to be a testament to the relentless pursuit of knowledge and innovation within the dynamic field of Electronics and Communications Engineering. In this edition, we strive to uphold our commitment to providing you with insightful and thought-provoking content that captures the essence of the ever-evolving world of Electronics and Communications Engineering. We invite you, our esteemed readers, to actively engage with us. Share your thoughts, feedback, and suggestions. If you have a project, research finding, or an insightful perspective to contribute, we encourage you to submit your work for consideration in our upcoming issues. As we continue on this journey of exploration and discovery, our magazine aims to be a catalyst for collaboration and knowledge exchange within our community. Your active

participation is what makes this endeavour truly fulfilling. Thank you for your continued support. We hope you enjoy reading this issue as much as we enjoyed curating it for you. Warm regards,

Dr Swapna Raghunath

Editor in Chief, Pramana - A Promise of Knowledge

ECE Department, GNITS

Co-Editor's Message



Dear Readers,

I am delighted to announce the publication of the volume-2 issue-1 of "PRAMANA - A Promise of Knowledge," a erudite periodical of the department of Electronics and Communication. G. Narayanamma College of Engineering confers upon students an exclusive opportunity to refine their learning capabilities through this exceptional publication. This magazine serves as a remarkable forum for the manifestation of students' literary prowess and avant-garde ideas, while allowing faculty and students alike to explore multifarious realms of inquiry and to augment their respective careers. "PRAMANA - A Promise of Knowledge" exemplifies the arduous work, unmitigated dedication, and substantial contributions of students and instructors alike. My heartfelt appreciation to all our editorial team members

for their invaluable support in actualizing this project. My gratitude to each and every author whose insightful articles constitutes a prominent feature of this magazine. Your invaluable contributions to the journal have been a labour of love requiring an immense amount of time and effort. I wish everyone all the best in their future scholarly endeavours. We request every student to show the same enthusiasm in further magazines also. Thank you.

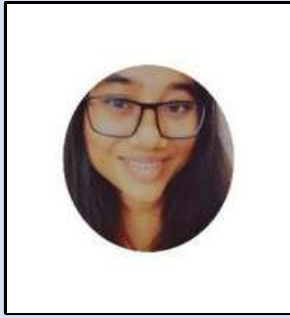
Warm regards,

P. Lavanya,

Co-editor, Pramana – A Promise of Knowledge,

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INDEX

1. Space Mining	3
2. Sustainable Waste Management	3
3. Mental health and awareness	4
4. Virtual Reality	5
5. Indian education system	6
6. Augmented Reality Evolution	7
7. Growth Journey	8
8. How CGI helps today's world?	9
9. Artificial Intelligence : Boon or Bane?	10
10. Embedded Systems	11
11. AutoCad	12
12. Tech Triumph	12
13. Navigating the power of IOT Landscape	13
14. Ethics in AI	15
15. Social Media and Mental Health	17
16. 5G Technology	17
17. Entrepreneurship: Crafting success from vision to reality	18
18. Power of Spoken words	19
19. Coco Channel	20
20. Power of Cryptography	21
21. Sanskrit Influence on Technology	22
22. Energy producing roads.	23
23. Problems Caused by AI	24
24. What do you call a person who is happy on Monday!?	24
25. Solar Storms	26
26. My Hackathon Experience	27
27. Water conservation	27
28. Food	28
29. Sanskrit	28

30. Social Media on Mental health	29
31. Tackling life during Difficult periods	30
32. A glimpse into future: AI for education	30

1. SPACE MINING

“Somewhere something incredible is waiting to be known”, and space is the epitome of this statement.

In a place with infinite possibilities, there are numerous things to be done in this colossal realm. From India's very first space achievement by launching its 1st satellite named Aryabhata on 19th April 1975, to the well celebrated launch of the Chandrayaan- 3 near the south pole of the moon, we've come a long way in the space journey. An aspect that is being thought recently is the idea about Space/Asteroid mining. By tapping into space resources, we can bring significant development and innovation in our country. Asteroid mining is the hypothetical extraction of minerals from asteroids and other minor planets. In a recent interview ISRO's current chief acknowledged the need for sophisticated space robotics with mission management capabilities. Keeping the recent technology in mind, we can create tiny machine-like structures called nanobots which would be equipped with special drilling, resource extraction and sensing abilities. These bots would collectively work in a swarm, in order to utilize maximum efficiency. And by appending sensors to this machine, we'll have a coherent understanding of our surroundings. Thus, creating a machine helping in not only research, but also bringing into service a device that will use a systematic approach to use our resources without causing any damage to our surroundings will help us pave a path to success in a domain where the sky will not define our limits!!

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2. FROM TRASH TO TRASURE: UNVEILING THE LANDSCAPE OF SUSTAINABLE WASTE MANAGEMENT

Waste management is a critical aspect of modern society, as the ever-increasing population and rapid industrialization generate a staggering amount of waste. Proper waste management is essential not only for environmental sustainability but also for safeguarding public health and preserving natural resources. From the early days of waste disposal to the contemporary era of recycling and advanced waste treatment technologies, the evolution of waste management reflects our collective responsibility to balance human progress with environmental growth.

Over the years, many scientists and environmentalists have come up with many solutions for the disposal and reusability of the waste we produce. With the rapid growth of nanotechnology and nanomaterials, numerous ideas have evolved. A ray of hope emerges through innovative waste reduction and recycling initiatives. From advanced recycling technologies that extract value from waste materials to circular economy models that prioritize sustainability, numerous approaches aim to mitigate the environmental impact of waste. Additionally, the promotion of reduced consumption and the adoption of eco-friendly practices contribute to a more responsible and sustainable waste management. Let us know about few of these futuristic methods.

Plasma Gasification:

Waste-to-energy processes prevent waste from ending up in landfills and create relatively Greenpower sources. One of the newest and most promising of these techniques is plasma gasification. In this process, plasma heats waste to extreme temperatures and converts it into usable gases like hydrogen. One study found that plasma gasification could remove 83 million tons of CO₂ emissions per year in California alone. Since this process produces hydrogen, it would also create a sustainable fuel source. Plasma gasification isn't

widespread yet because it's so new, but its potential is impressive.

Pneumatic Waste Collection:

Most cities and neighbourhoods rely on fossil fuel system can be inefficient and leads to emissions, so some areas have adopted a new approach. They use vacuum suction to empty garbage bins through a network of underground pneumatic tubes. Pneumatic tubes are powered by air compressors, so their energy consumption is minimal. Since there are no trucks involved, greenhouse gas emissions aren't a concern anymore, either. These systems are also faster than traditional disposal methods, giving waste management plants more time to sort rubbish.

AI Waste Sorting:

Mistakes in waste sorting can lead to improper disposal and missed opportunities to recycle or reuse materials. Less than 1% of waste is monitored, which makes these errors likely. However, manual monitoring is inefficient and expensive. Artificial intelligence provides a solution.

AI applications like machine vision can help automated systems differentiate between different kinds of waste. They can then sort it more effectively and provide insights into areas' disposal practices. Companies can then ensure they're recycling all they can and avoid environmentally hazardous mistakes.

Recycling Apps:

Apps have changed the way we order taxis, the way we date and the way we communicate, so why not the way we recycle? A new range of apps is now available to help individuals and businesses navigate the world of recycling. From donating your food waste to a worthy cause and giving away your clothes, to locating a nearby recycling centre, these apps are a fantastic resource for those who want to keep their waste out of the landfill. Some apps also provide detailed information on exactly which materials can be recycled in your local area. Because a lot of apps allow you to pass unwanted items on to other people, they're also a great way to develop a sustainable, circular economy.

Waste management doesn't have to be wasteful. Thanks to these technologies, the world is becoming a more environmentally friendly place.

New technology is emerging every day, too. As more people adopt these technologies, additional research and development will be funded. Technology's impact on waste management will grow exponentially as a result.

CLEAN EARTH! HAPPY EARTH!

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3. THE IMPORTANCE OF MENTAL HEALTH AND AWARENESS

Mental health and awareness play a pivotal role in shaping the overall well-being of individuals and communities. In recent years, there has been a growing recognition of the significance of mental health, as it affects every aspect of a person's life, from personal relationships to professional success.

First and foremost, mental health is integral to one's physical health. The mind-body connection is profound, with mental well-being influencing immune function, cardiovascular health, and overall resilience to illnesses. Consequently, a focus on mental health contributes not only to emotional stability but also to a robust physical constitution.

Moreover, mental health awareness is essential for destigmatizing conditions that affect the mind. Societal attitudes have historically marginalized individuals grappling with mental health challenges, perpetuating a culture of silence and shame. By fostering awareness, we break down these barriers, creating an environment where people feel comfortable seeking help without fear of judgment. Employers who prioritize mental health create a more supportive and inclusive work environment, ultimately enhancing employee well-being and performance.

On a broader scale, communities benefit from increased mental health awareness through reduced crime rates and improved social cohesion. Mental health issues, when left

unaddressed, can contribute to social problems such as substance abuse and homelessness.

By promoting awareness, we can build more compassionate communities that understand and support those in need.

Furthermore, the importance of mental health extends to educational settings. Students facing mental health challenges may struggle academically and socially. Educational institutions that prioritize mental health create an environment conducive to learning, fostering emotional resilience and personal growth. In the realm of public health, addressing mental health is crucial for preventing and managing various disorders.

Mental health conditions, if left untreated, can escalate and lead to more severe consequences. By promoting awareness and providing accessible resources, we can intervene early, reducing the overall burden of mental health issues on healthcare systems. The global impact of the COVID-19 pandemic has underscored the need for a robust mental health infrastructure.

The pandemic has exacerbated existing mental health challenges and introduced new stressors. Awareness campaigns have become increasingly important in helping individuals cope with uncertainty, grief, and the overall impact on mental well-being.

In conclusion, mental health and awareness are fundamental components of a healthy and thriving society. By prioritizing mental well-being at the individual, community, and societal levels, we can create environments that support the flourishing of the human spirit. Through education, destigmatization, and the provision of accessible mental health resources, we can build a more compassionate world where everyone has the opportunity to lead fulfilling lives.

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4.EXPLORING THE WORLD OF VIRTUAL REALITY

Virtual Reality (VR) stands at the forefront of technological innovation, reshaping our digital experiences and expanding the boundaries of human interaction. Emerging in the early 21st century, VR leverages advanced hardware and software to immerse users in simulated environments, creating a multisensory experience that transcends traditional screen-based interactions.

In the realm of entertainment and gaming, VR has ushered in a new era. With high-quality headsets and motion controllers, users can step into alternate realities, whether exploring fantastical worlds or engaging in realistic simulations. The level of immersion is unparalleled, as VR technology tracks head and body movements, providing a sense of presence that goes beyond mere observation.

Education has embraced VR as a powerful tool for immersive learning. Students can virtually dissect organisms, explore historical events, or conduct scientific experiments in a risk-free environment. This technology not only enhances understanding but also fosters engagement and curiosity. The potential impact on education is significant, offering new avenues for experiential learning.

Healthcare has witnessed transformative applications of VR. From therapeutic interventions for mental health to surgical training simulations, VR contributes to enhanced medical practices. Surgeons can practice complex procedures in a virtual space, refining their skills before entering the operating room. Additionally, VR is employed in pain management, providing distraction and relaxation techniques for patients undergoing various medical treatments.

Workplace training has also benefited from VR solutions. Employees can undergo realistic simulations, from emergency response scenarios to customer service interactions, improving their skills in a controlled environment. This not only enhances learning outcomes but also reduces the risks associated with on-the-job training.

The social aspect of VR is evolving rapidly. Virtual spaces enable people from different parts of the world to connect, socialize, and collaborate

in shared environments. Whether attending virtual conferences, exploring museums together, or simply hanging out in a virtual space, VR fosters a sense of presence that traditional video calls cannot replicate.

Challenges persist in the VR landscape. Motion sickness, discomfort, and the need for more affordable and accessible hardware are areas of ongoing improvement. As the technology matures, addressing these challenges becomes paramount to mainstream adoption.

Looking ahead, the future of VR seems promising. Advancements in hardware, including lighter and more comfortable headsets, increased haptic feedback, and improved graphics, will contribute to a more seamless and enjoyable user experience. The integration of artificial intelligence and augmented reality elements further expands the possibilities, creating a blended reality that combines virtual and physical worlds.

In conclusion, Virtual Reality is not merely a form of entertainment; it is a versatile tool with the potential to revolutionize education, healthcare, work, and social interaction. As the technology continues to evolve, VR's impact on our daily lives is set to deepen, offering experiences that were once confined to the realm of science fiction.

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5. INDIAN EDUCATION



What is Indian Education? Indian Education is a term used to refer to the Education that is offered primarily to

American Indian students. The Indian Education Act of 1972 defined its purpose as “to meet the unique educational and culturally related academic needs of American Indian children.”

History of Education System: The history of the Indian education system comes from the times of Ramayana and Mahabharata. The historic Indian education system is also called the Gurukul system. There were gurus then who are now known as teachers and shishyas who are called students now. The gurus and the shishyas lived together under one roof in Gurukul until the completion of their Education. The shishyas were expected to help the guru in all the daily chores as part of their learning. The children belonging to higher strata of the society were taught all the subjects from Sanskrit to Holy Scriptures and mathematics to metaphysics by the gurus. The Gurukuls during those times focused on the practical aspects of life. The students were taught in the open classroom in the surrounding area of nature. This early system of Education in India continued for many years until the modern education system came into the picture in the nineteenth century. In the early 19th century, during the British period, the modern education system was brought into our country by Lord Thomas Babington Macaulay. The basic strength of this modernized education system was the examinations and a well-defined curriculum, which gave importance to subjects like science and mathematics and subjects like philosophy, metaphysics was given a back seat. The brick-and-mortar classrooms replaced the open classrooms in the Gurukuls. The essence of the guru shishya bond was taken over by a more formal relationship between the teacher and the student. To understand the progress of any student, examinations were conducted at frequent intervals. The focus of the education system shifted from learning to memorizing the concepts to score good marks in the examinations.

Problems of Indian Education System:

Over a period of time, it has been observed that there are many loopholes in the system of Education in India. Instead of understanding the concepts, students started cramming and memorizing the lessons. Knowledge is given a backseat and scoring in high rankings takes importance. Modern parents have tuned their mindsets accordingly, and their goal is to ensure that their children score good marks instead of acquiring knowledge right from the primary

level. Private schools and colleges have been rapidly increasing in the country but the results produced by them are far beyond satisfactory. It has also been observed that the quality of teachers deteriorated with the passing of time. Our examination system is responsible for the wide skill gap. India is producing lakhs of engineers and professionals every year but only a fraction of this number is actually getting employed. This is because the Indian examination system focuses more on scoring good percentages rather than the actual continuous comprehensive evaluation. Research and development, which should be the cornerstone of our system, are given the least importance. The private schools and colleges focus on the admission of more students and are least interested in the quality of their Education. This is the major reason why the faculties and the teachers lack skills and specialization. This is quite evident from the fact that a single professor is assigned to teach multiple subjects.

Conclusion:

Indian Education is a unique and specialized Education system that is offered primarily to Indian students . It incorporates culturally relevant and inclusive elements not found in mainstream Education

but is subject to many of the same mandates. The payroll structure of the teachers and the faculties, especially in the government institutions should be improved. This step will help in motivating the teachers to develop their skills and they will take a keen interest in grooming or shaping up a student's life and career. The government and other entities who are associated with the education sector, need to understand the importance of quality of Education. Education should be a holistic process that must focus on the overall development of the physical, emotional, social, and cognitive skills of a child. It needs to be a slow and cyclic process and must take place gradually to help the child develop into an autonomous, independent, and knowledgeable individual.

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6. THE AUGMENTED REALITY REVOLUTION



Augmented reality (AR) is not just a buzzword; it's a transformative technology that is reshaping the

way we perceive and interact with the world around us. This enhanced version of reality, achieved through the integration of digital elements, sound, and sensory stimuli, is making waves in various industries, from retail and healthcare to education and beyond . At its core, augmented reality involves overlaying digital information onto the physical world, enriching our experiences and deepening our understanding of the environment. Unlike virtual reality (VR), which immerses users in entirely computer-generated environments, AR builds upon the existing world.

The primary goal of AR is to highlight specific features of the physical world, offering smart and accessible insights that can be applied in real-world scenarios. In an era dominated by data collection and analysis, AR stands out as a tool that

not only captures attention but also informs decision-making processes and provides valuable insights into consumer behaviour.

Applications Across Industries: The applications of augmented reality are diverse and continually expanding. In the retail sector, early adopters are leveraging AR technologies to enhance the consumer shopping experience. Store catalogue apps, for instance, allow consumers to visualize products in different environments, bridging the gap between the digital and physical realms. Imagine pointing your camera at an empty room and seeing how a piece of furniture perfectly fits into the space — that's the magic of AR.

Beyond retail, augmented reality is proving to be a game-changer in healthcare. AR apps enable users to explore highly detailed, 3D images of different body systems, revolutionizing medical training. This immersive learning tool is shaping a new era for medical professionals, offering a

deeper understanding of complex anatomical structures.

Augmented Reality vs. Virtual Reality: It's crucial to distinguish between augmented reality and virtual reality. While AR enhances the existing real-world environment with virtual elements, VR transports users to entirely computer-generated environments. The contrast is evident in popular applications like Pokémon Go, where virtual creatures appear in real-life surroundings, versus VR experiences that create entirely artificial worlds.

Wearable Devices and the Future of AR: The evolution of AR is intricately linked with the development of wearable devices. Smartphones and tablets provide a glimpse into AR's potential, but the real breakthrough may come with mainstream adoption of smart eyewear. These devices have the potential to offer a more complete link between the real and virtual realms, further blurring the line between the physical and digital worlds.

Advantages of Augmented Reality: From a commercial perspective, augmented reality is a powerful tool for businesses. It goes beyond being a mere marketing gimmick, offering tangible benefits to consumers and businesses alike. Augmented reality provides an interactive and immersive experience, boosting brand awareness and, ultimately, driving sales.

In conclusion, augmented reality is not just a fleeting trend; it's a technology that continues to evolve and find its place across diverse industries. By overlaying computer-generated elements onto the real world, AR enhances our experiences and shifts our perspectives. Whether in gaming, design, shopping, or education, augmented reality is breaking barriers and ushering us into a new era of mixed reality, where the boundaries between the physical and digital realms fade away. The journey of AR has just begun, and its potential is as vast as the imaginations that fuel its development.

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7.NAVIGATING THE GROWTH JOURNEY

Success Mantras for Small-Scale Startups to Industry Giants:

Embarking on the entrepreneurial journey is akin to setting sail on uncharted waters, and the transition from a small-scale startup to an industry giant is a testament to the resilience, vision, and strategic acumen of a business.

1. Visionary Leadership:

At the heart of every successful journey is visionary leadership. Leaders who can communicate a compelling vision not only motivate their teams but also attract investors, partners, and customers who align with the company's long-term objectives.

2. Customer-Centric Approach:

Irrespective of the size, successful businesses place the customer at the core of their operations. Startups can lay a strong foundation for growth by actively listening to customer feedback, adapting to market demands, and consistently delivering value.

3. Scalable Technology Infrastructure:

A small startup may operate on lean technological infrastructure, but as it grows, scalability becomes paramount. Investing in a robust and scalable technology framework ensures that the business can handle increased complexities, data volumes, and user demands. This foundational technology enables streamlined operations, efficient workflows, and seamless integration of new functionalities as the business expands.

4. Adaptability and Innovation:

The ability to adapt to changing market dynamics and embrace innovation is a distinguishing factor between successful startups and industry giants. Embracing change becomes a competitive advantage, allowing businesses to not only survive but thrive in evolving landscapes.

5. Strategic Partnerships:

Collaboration can be a catalyst for growth. Small startups can benefit from strategic partnerships that provide access to resources, expertise, and a wider customer base.

6. Employee Empowerment and Culture:

The success of any business is intricately tied to its people. Establishing a positive and

empowering company culture from the startup phase fosters employee satisfaction, retention.

7. Market Research and Competitive Analysis:

Continuous market research and a keen understanding of the competitive landscape are indispensable for sustained success. Startups should invest in understanding market trends, consumer behaviour, and potential disruptions.

8. Resilience and Risk Management:

The path from startup to industry giant is seldom without challenges. Resilience in the face of setbacks and a proactive approach to risk management are critical success factors. Startups should anticipate potential obstacles, build contingency plans, and be prepared to pivot when necessary.

In conclusion, the journey from a small-scale startup to an industry giant is a dynamic process that demands strategic vision, adaptability, and a commitment to continuous improvement. By embracing these success mantras, businesses can navigate the complexities of growth, establish themselves as industry leaders, and contribute to a legacy of sustained success.

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8. CGI: HOW THE NEW IMAGERY WORLD HELPS TODAY'S WORLD

CGI is Computer generated imagery, before knowing what it is let's look at some of the things it can do. Imagine another Monday you're stuck in the traffic thinking about the dead lines you have and the works that are bugging you for a while, you are staring at the signal and the timer suddenly a peacock comes flying and lands at the junction it starts to open its feathers now you could see an advertisement space above which the peacock has landed and the ads space shows all the movies and shows that are streaming in Jio platform .Yes this one of the marketing strategies that are powered by THE CGI. Now if you are listening to this for the first time am sure you might be wondered how this is possible to know

about it lets dive into the concept of CGI. Computer-generated imagery (CGI) is a broad term that encompasses the use of computer graphics to create images, videos, or animations. It involves various techniques and technologies to generate realistic or stylized visual content. Here's a simplified overview:

Modelling: CGI begins with creating 3D models of objects or characters. These models are made using specialized software and define the geometry, texture, and appearance of the digital elements.

Texturing:

Artists apply textures to the 3D models to give them realistic details like colour, surface patterns, and reflections.

Texturing adds depth and enhances the visual appeal of the CGI.

Rigging:

For animated characters, a rigging process is used to create a digital skeleton that allows animators to manipulate and move the characters realistically. This involves defining joints, bones, and controls.

Animation:

Animators use the rigged models to create movement. Keyframes and interpolation techniques are often used to define the motion of the characters or objects over time.

Lighting:

CGI scenes require virtual lighting to simulate real-world lighting conditions. This step involves setting up light sources, defining their properties, and ensuring they interact with the CGI elements realistically.

Rendering:

The final step is rendering, where the computer processes the 3D scene and converts it into 2D images or frames. This process considers lighting, shading, and other visual effects to produce the final, realistic-looking result.

Compositing:

If the CGI elements need to be integrated into live-action footage or other CGI elements, compositing is used. This step involves combining different visual elements into seamless, cohesive final image or video.



It's worth noting that CGI is not limited to 3D graphics; it also includes 2D computer-generated images and effects. CGI is widely used in movies, television, video games, and various other industries to create visually stunning and immersive experiences.

Functions of CGI:

1. **Product Visualization:** CGI is often employed to create realistic and detailed visualizations of products, especially for industries like automotive, furniture, or technology.

This allows marketers to showcase products from various angles and highlight specific features.

2. **Virtual Prototyping:** Before a physical product is manufactured, CGI can be used to create virtual prototypes. This is common in industries where testing and refining the design before production are crucial.

3. **Architectural Visualization:** In real estate marketing, CGI is used to create realistic renderings of buildings and interiors before they are constructed. This helps potential buyers or investors visualize the final product.

4. **Advertising Campaigns:** CGI is utilized in creating visually stunning and imaginative elements for advertising campaigns. This can include animated characters, fantastical scenes, or special effects that grab the audience's attention.

5. **Augmented Reality (AR) and Virtual Reality (VR):** CGI is integral to AR and VR experiences, providing immersive and interactive marketing content. It allows users to engage with products or environments in a virtual space.

6. **Special Effects in Videos:** CGI is commonly used in video production for adding special effects, altering backgrounds, or creating scenes that are difficult to capture in real life.

It is cost effective. This is a boon to the animators and marketing people. We can create lots of fun using it. Some of it are Maybelline mascara buses in new York city polar bears fighting for coco cola to quench their thirst.

Use the tools have good experiences.

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9. ARTIFICIAL INTELLIGENCE: BOON OR BANE

In this evolving modern era, as the usage of artificial intelligence being the vital role of every individual. Let us dive deep into what the actual AI is?

Coming to the general justification of an AI it is termed to be a computer system that has been programmed to react like a human being. This AI technology has already started imposing on our daily lifestyle from Mobiles to self-driving cars. Due to this quick evolution of AI humans had to be aware and be prepared for the aftermath of AI development.

The creation of AI also will give huge impacts towards labour industries especially repetitive jobs in the factory. AI will replace the current workers as AI does not have physical body like human that requires food to gain energy. Application of AI in working section itself is a double edge sword towards humanity.

We may have a machine that can perform the task without feel tired but it's at high risk for the machines provide to high quality service to the factory as human do. Pro-AI activist might say that AI will create jobs and it is true but it does take time and training for the current workers to adapt with AI working environment and this will create troublesome towards the quality or services of the work itself. Microsoft co-founder, Bill Gates also believe there is reason for us to cautious about AI. He also said the good or benefit of AI can outweigh the bad if we managed the AI properly.

Artificial intelligence could help us reduce error and increase accuracy with high degree of precision in various situations. It also helps the doctor or physician to identify risk factor of the patient via health care device with help of AI in medical field. The latest fact that , Radiosurgery is an example of application of AI In current medical industry is that it operates tumour or cancer cell without affecting the surrounding tissue. Human can gain lot of benefits with AI if we able to manage it properly.

Despite all the benefit that we gain, we must aware the threat or risk of this artificial intelligence can do towards the humanity. We

acknowledge and accept that this 'smart' technology plays important roles in the future but depending on a machine for almost every task is just a step backward for humanity. Human must adapt and have fully control towards AI to avoid the threat and risk so that humanity can evolves and become superior.

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10. EMBEDDED SYSTEMS

Embedded systems are computes systems that are designed to perform specific tasks. We use in our daily lives, such as cars, smartphones. It control the operation of the devices. It is critical part of modern technology. It is often designed to operate in real-time meaning that they must respond quickly to changes in the environment. It is found in safety critical systems such as airbags in cars.

The first component of an embedded system is the microcontroller. Memory is used to store the program instructions and data that the microcontroller needs to execute its tasks. There are two main types of memory in embedded systems. Random-access memory and read-only memory.

The third component of embedded systems is the input or output interfaces. The systems are used in a wide range of applications. These systems enable the devices to perform tasks such as image processing, audio decoding. Modern cars are equipped with a wide range of embedded systems that control various functions and sub systems. It includes systems for engine control, braking and safety features. It is used in industrial automation. In conclusion, embedded systems have a wide range of applications in various industries.

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11. AUTOCAD

The full form of AutoCAD is "Automated Computer Aided Design".

AutoCAD is computer-aided design (CAD) software that is used for precise 2D and 3D drafting, design, and modelling with solids, surfaces, mesh objects, documentation features, and more. AutoCAD is used a lot in drafting, designing, and creating prototypes of a product. When engineers who are especially in mechanical and civil engineering industry finish designing and creating a potential design to build, they first analyse the design using the many simulation tools available to them in AutoCAD. AutoCAD provides visual and graphic simulation for those engineers to simulate the design's behaviour in different situations. Using AutoCAD makes every designing more efficient, faster, and more presentable than designing by hand. AutoCAD provide users with the ability to quickly draw precise designs to show in detail how something needs to be built and look like.

Advantages of AutoCAD:

1. Designs can be viewed from all angles and with a range of materials.
2. Some testing and consumer feedback can be done before costly production takes place.
3. Architects often use AutoCAD to prepare layout drawings, floor plans, sections and elevations etc.

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12. TECH TRIUMPH



Navigating the B-Tech Landscape with Excellence. Education is one thing, NO one can take away from you. The teenage years are a crucial phase of personal development, marked by academic

challenges and the need to hone communication skills. Many teenagers find it challenging to stay focused on their studies amidst the myriad distractions that modern life presents. Additionally, effective communication in English is a valuable skill that opens doors to various opportunities. In this article, we will explore strategies to maintain focus on studies and improve English communication skills during the teenage years.

Advantages to learning only are that it minimises confusion, allows you to move yourself, and will change your point. When you are by yourself, confusion is minimised because of the lack of additional action you get except with your assignment. You may get breaks whenever you feel overwhelmed, or even read at the pace that fits you. The pacing of your personal business will be highly good to you, for no one knows you better than yourself. Finally, the transformation of emphasis that comes with learning alone is important.

Overcome distraction!!

Playing listening to or reading books, or watching films may confuse or make the child's pointaway from the feeling. Actions, e.g., music, breathing exercises, or blowing bubbles may help to unwind the baby, which will decrease pain, stress, and muscle tension. make the pain medication as prescribed. Make sure the person gets the proper amount of pain medication at the right moment. Don' 't decide to give off, or wait until the baby's feeling becomes too bad, before making pain medication.

Enhancing Communication:

Improving communication skills is a valuable endeavour that can positively impact various aspects of personal and professional life.

Here are practical strategies to enhance your communication skills:

- Active Listening: Focus on truly understanding the speaker.

- Effective Body Language: Maintain eye contact to convey attentiveness.

Clear Articulation: Speak clearly and at a moderate pace.

Expand Vocabulary: Read regularly to expose yourself to diverse language.

Use Technology Wisely: Utilize video calls and virtual communication tools to practice.

Read Aloud: Read books, articles, or your own writing aloud.

Adaptability: Adjust your communication style based on the situation.

Maintain Eye Contact: Establish and maintain eye contact during conversations.

“We learn from failure, not from success!”- Bram Stoker.

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13. UNLEASHING THE POWER OF CONNECTION: NAVIGATING THE INTERNET OF THINGS (IOT) LANDSCAPE

Introduction:

The Internet of Things (IoT) has transformed the way we perceive and interact with the world around us. In the not-so-distant past, the concept of connecting everyday devices to the internet might have

seemed like science fiction, but today, it is a reality that is reshaping industries, enhancing efficiency, and influencing the very fabric of our daily lives.



1. The Rise of IoT:

In recent years, IoT has experienced unprecedented growth, with billions of devices now interconnected. From smart homes and wearables to industrial machinery and healthcare systems, the possibilities seem limitless.

This surge in connectivity is not just about convenience; is a paradigm shift that promises to



revolutionize how we live, work, and engage with our environment.

2. Understanding the Architecture:

At the heart of IoT lies a sophisticated architecture comprising three main layers: the device layer, the network layer, and the application layer. Devices equipped with sensors and actuators collect data, which is transmitted through communication protocols, and then processed and analyzed for actionable insights. This intricate dance of data allows for real-time decision-making and optimization across various domains.

3. Real-world Applications:

The impact of IoT extends across diverse sectors. In healthcare, wearable devices monitor vital signs and provide early warnings, enhancing patient care. Smart cities leverage IoT for efficient traffic management, waste disposal, and energy consumption. Agriculture benefits from precision farming techniques, optimizing crop yields and resource utilization. Exploring these applications unveils the tangible benefits that IoT brings to our communities and industries.

4. Overcoming Challenges:

Yet, as we marvel at the potential of IoT, challenges loom on the horizon. Security concerns, interoperability issues, and the sheer scale of data generated pose significant hurdles. Robust cybersecurity measures, standardization efforts, and ongoing research are essential to ensure the seamless integration and sustained growth of the IoT ecosystem.

5. Future Trends and Innovations:

Looking ahead, the future of IoT holds exciting possibilities. The marriage of IoT and artificial intelligence (AI) opens doors to predictive analytics and autonomous decision-making. Blockchain technology is explored to enhance the security and transparency of IoT transactions. Environmental sustainability becomes a focal point, with IoT driving initiatives for energy efficiency and eco-friendly practices.

Conclusion:

As we navigate the IoT landscape, it is evident that we stand at the cusp of a technological revolution. The interconnectivity of devices not only transforms our immediate surroundings but also shapes the trajectory of innovation.

Embracing the potential of IoT requires a delicate balance between innovation and responsibility — a commitment to harnessing its power for the betterment of society.

The Internet of Things is not just about devices; it's about connectivity, collaboration, and a future where the inanimate becomes intelligent, responsive, and, ultimately, an integral part of the connected world we inhabit.

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14.ETHICS IN AI

AI ethics is a system of moral principles and techniques intended to inform the development and responsible use of artificial intelligence technology.

As AI has become integral to products and services, organizations are starting to develop AI codes of ethics. An AI code of ethics, also sometimes called an AI value platform, is a policy statement that formally defines the role of artificial intelligence as it applies to the development and well-being of the human race. The purpose of an AI code of ethics is to provide stakeholders with guidance when faced with an ethical decision regarding the use of artificial intelligence. The rapid rise in artificial intelligence (AI) has created many opportunities globally, from facilitating healthcare diagnoses to enabling human connections through social media and creating labour efficiencies through automated tasks.

However, these rapid changes also raise profound ethical concerns. These arise from the potential AI systems have to embed biases, contribute to climate degradation, threaten human rights and more. Such risks associated with AI have already begun to compound on top of existing inequalities resulting in further harm to already marginalised groups. In no other field is the ethical compass more relevant than in artificial intelligence. These general-purpose technologies

are re-shaping the way we work, interact, and live. The world is set to change at a pace not seen since the deployment of the printing press six centuries ago. AI technology brings major benefits in many areas, but without the ethical guardrails, it risks reproducing real world biases and discrimination, fuelling divisions and threatening fundamental human rights and freedoms.

Applications of AI :

1. AI Application in E-Commerce:

Personalized Shopping Intelligence technology is used to create recommendation engines through which you can engage better with your customers. These recommendations are made in accordance with their browsing history, preference, and interests. It helps in improving your relationship with your customers and their loyalty towards your brand. Virtual shopping assistants and chatbots help improve the user experience while shopping online. Natural Language Processing is used to make the conversation sound as human and personal as possible. Moreover, these assistants can have real-time engagement with your customers. Did you know that on amazon.com, soon, customer service could be handled by chatbots?

2.Applications of Artificial Intelligence in Education:

Although the education sector is the one most influenced by humans, Artificial Intelligence has slowly begun to seep its roots into the education sector as well. Even in the education sector, this slow transition of Artificial Intelligence has helped increase productivity among faculties and helped them concentrate more on students than office or administration work. Some of these applications in this sector include:

Administrative Tasks Automated to Aid Educators

Artificial Intelligence can help educators with non-educational tasks like task-related duties like facilitating and automating personalized messages to students, back-office tasks like grading paperwork, arranging and facilitating parent and guardian interactions, routine issue feedback facilitating, managing enrolment, courses, and HR-related topics.

Creating Smart Content, Digitization of content like video lectures, conferences, and textbook

guides can be made using Artificial Intelligence. We can apply different interfaces like animations and learning content through customization for students from different grades. Artificial Intelligence helps create a rich learning experience by generating and providing audio and video summaries and integral lesson plans.

3.Applications of Artificial Intelligence in Robotics:

Robotics is another field where Artificial Intelligence applications are commonly used. Robots powered by AI use real-time updates to sense obstacles in its path and pre-plan its journey instantly. It can be used for:

Carrying goods in hospitals, factories, and warehouses, cleaning offices and large equipment Inventory management.

4.Applications of Artificial Intelligence in Healthcare:

Artificial Intelligence finds diverse applications in the healthcare sector. AI applications are used in healthcare to build sophisticated machines that can detect diseases and identify cancer cells. Artificial Intelligence can help analyse chronic conditions with lab and other medical data to ensure early diagnosis. AI uses the combination of historical data and medical intelligence for the discovery of new drugs.

5. Applications of Artificial Intelligence in Agriculture:

Artificial Intelligence is used to identify defects and nutrient deficiencies in the soil. This is done using computer vision, robotics, and machine learning applications, AI can analyse where weeds are growing. AI bots can help to harvest crops at a higher volume and faster pace than human labourers.

Disadvantage of not having ethics in AI:

AI bots are becoming more effective at imitating human relationships and conversations. A major breakthrough on this front occurred in 2015 when a bot named Eugene Goostman became the first computer to pass the Turing test. This challenge requires human raters to use text input to chat with an unknown entity, and then guess whether the entity is human or machine. Over half of the raters chatting with Eugene Goostman believed it was human. While this can prove very useful in nudging society toward more beneficial

behaviour, it can also prove detrimental in the wrong hands.

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15. THE RELATIONSHIP BETWEEN SOCIAL MEDIA USE AND ADOLESCENT MENTAL HEALTH

In today's digital age, social media has become an integral part of adolescent life. While it offers numerous benefits, concerns have been raised about its impact on mental health. This article aims to inquire into the relationship between social media use and adolescent mental health, examining the potential effects and exploring strategies for promoting a healthy digital balance. Social media platforms provide a platform for connection, self-expression, and information sharing. Researches suggests that excessive use and negative experiences on social media have been associated with various mental health issues. It's important to understand the significance of these influences and their potential impact on mental well-being. Factors such as cyberbullying, social comparison, etc can lead to increased feelings of anxiety, depression and low self-esteem. These negative effects of social media are a concern and it is essential to recognize its potential positive impact on mental health. Encouraging mindful and intentional social media use can help reduce the risks. Positive interactions, social support, and educational content can also be found on social media platforms. Strategies such as setting boundaries, cultivating a positive online environment, and promoting digital literacy and critical thinking skills can empower adolescents to navigate social media in a healthy way. Adolescence is a critical period for identity development and social media plays a significant role in this process. It offers a space for self-presentation, exploration and peer validation. However, the pressure to fit into these perfect standards and always seeing people's curated online lives can really mess with

how we see ourselves and how we feel. By this we can conclude that , the conscious and intentional use of technology results in good mental health and overall quality of life. It involves finding a balance between online and offline activities, being aware of one's emotions and reactions to social media and actively managing digital consumption. By prioritizing digital well-being, adolescents can cultivate a healthier relationship with social media.



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16. 5G TECHNOLOGY TRANSFORMING COMMUNICATION NETWORKS

The advent of the fifth-generation (5G) technology marks a pivotal moment in the history of communication engineering. More than just an upgrade, 5G represents a profound paradigm shift, promising to redefine the way we connect, communicate, and experience the digital world. In this article, we embark on a journey through the evolution of wireless communication, exploring the key features and advancements introduced by 5G. From ultra-fast data rates to low- latency communication, the transformative impact of 5G on mobile networks, IoT, and beyond is unravelled, offering a comprehensive overview of this groundbreaking technology. The roots of 5G trace back to the early days of wireless communication, where each generation of technology built upon its predecessor. From the first-generation (1G) analog systems to the digital revolution brought about by 2G, 3G's introduction of mobile data, and the broadband capabilities of 4G, each step in this evolution

paved the way for the revolutionary leap that is 5G.

The demand for higher data rates, lower latency, and increased device connectivity spurred the development of 5G, setting the stage for a new era in communication engineering.

Despite the immense potential, the implementation of 5G has not been without challenges. Deployment costs, infrastructure requirements, and the need for significant spectrum allocations have presented obstacles for widespread adoption. Additionally, concerns regarding security, privacy, and potential health effects of increased exposure to radiofrequency radiation have sparked debates and regulatory scrutiny. The global rollout of 5G has also exposed disparities in infrastructure development, contributing to a digital divide that must be addressed to ensure equitable access to the benefits of this transformative technology.

In conclusion, the journey from the early days of wireless communication to the emergence of 5G has been a testament to the relentless pursuit of innovation. The transformative impact of 5G on communication networks, mobile technologies, and the Internet of Things is undeniable. While challenges exist, the potential benefits in terms of speed, efficiency, and connectivity are vast. As 5G continues to roll out globally, it is imperative for stakeholders to collaborate in addressing challenges, ensuring responsible deployment, and maximizing the positive impact of this technology on society, ushering in a new era of connectivity and digital possibilities.

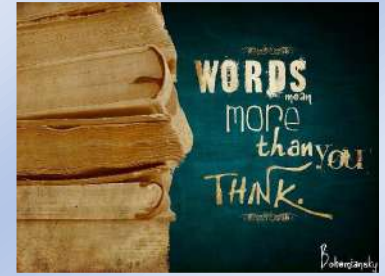
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17.MASTERING THE ART OF ENTREPRENEURSHIP: CRAFTING SUCCESS FROM VISION TO REALITY

In the vast canvas of business landscapes, entrepreneurship stands as an art form, blending creativity, resilience, and strategic vision. It's a

journey that begins with a spark—an idea—and transforms into a masterpiece through dedication, adaptability, and sheer determination.



Visionary Creativity: Unveiling Opportunities

Entrepreneurship thrives on creativity, the ability to perceive problems as opportunities, and to envision innovative solutions. Successful entrepreneurs paint their visions on the canvas of possibility, unafraid to explore uncharted territories and disrupt established norms

Courageous Risk-Taking and Resilience: Embracing the Unknown, Taking risks is an inherent part of this art. Entrepreneurs dive into uncertainty, embracing failure not as a defeat, but as a brushstroke refining their masterpiece. Resilience becomes their shield, allowing them to bounce back stronger and wiser, learning from each setback.

Passion and Purpose: Fuelling the Journey Behind every entrepreneurial endeavour lies an unwavering passion and a clear sense of purpose. It's this driving force that fuels the long hours, sleepless nights, and unwavering commitment to transform dreams into reality.

Adaptability and Flexibility-Navigating the Changing Tides:

The entrepreneurial landscape is dynamic, ever-evolving. Successful entrepreneurs are masters of adaptation, capable of pivoting strategies, embracing change, and turning challenges into opportunities.

Execution and Strategy: From Vision to Tangible Success

Vision alone doesn't suffice; it's the meticulous execution and strategic planning that breathe life into ideas. Entrepreneurs meticulously craft blueprints, orchestrating each step with precision to bridge the gap between concept and success.

Networking and Collaborations-Building Bridges to Success:

Entrepreneurship thrives in a network of relationships. Collaborations, mentorships, and partnerships form the scaffolding upon which

entrepreneurial dreams are built, offering support, guidance, and opportunities for growth.

Continuous Learning and Evolution-A Journey, not a Destination:

The entrepreneurial journey is a continuous learning curve. Entrepreneurs remain hungry for knowledge, perpetually evolving, refining their skills, and staying abreast of industry trends to remain at the forefront of innovation.

Social Impact and Responsibility:

Beyond Profit Amidst the pursuit of success, entrepreneurs are increasingly mindful of their social impact. Many endeavours are geared not only towards financial gains but also towards contributing positively to society, addressing critical challenges, and fostering sustainable change.

In conclusion, the art of entrepreneurship transcends mere business acumen; it's a canvas where passion meets strategy, and vision transforms into reality. It celebrates the spirit of innovation, resilience, and the relentless pursuit of turning dreams into tangible achievements. To master this art is to embark on a journey of self-discovery, where every stroke of effort shapes a vibrant and enduring legacy.

Whether you're a seasoned entrepreneur or just stepping into this realm, remember: entrepreneurship is not just a destination; it's an ongoing, ever-evolving masterpiece. Craft your vision, embrace the unknown, and paint the world with your entrepreneurial spirit.

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18.THE POWER OF SPOKEN WORDS

Can you imagine a world without words? It would be chaos. Many times we take them for granted, just as a way of communicating what we want or need. And they actually do that but at the same time they do something bigger Words, when said and articulated in the right way, can change

someone's mind. They can alter someone's belief. You have the power to bring someone from the slums of life and make a successful person out of them, or destroy someone's happiness using only your words. The languages we speak shape the way we see the world, the way we think, and the way we live our lives. Be very careful with your words, change your limiting words to more empowering one. For instance, "I am so confused" or "I am curious to explore", "I am a failure" or "I have found another way to do this". Which one would you choose? Check yourself! Are you applying a label to yourself? Are you creating a situation that creates a boundary you won't let yourself cross. You can recreate your world with your words as "your subconscious mind responds more to your perception of a situation than its reality.

The words you say in your mind are often a result of the underlying thoughts that manifest in your subconscious mind.

subconscious mind is always listening and giving us what we claim to be true in our lives, that's why affirmations are so powerful , the words and phrases that you habitually use are so impressed on the subconscious mind they eventually become a belief and when you form a belief miracles happen and your reality changes. when I do my affirmations, I use the greatest most powerful words in the universe that is "I am" is the strongest statement what ever you put behind "I am" is created in your life. In ancient times uttering the statement "I am" was forbidden and banned and was even punishable by death because of elders knew the amount of power of those words held when you say "I am" announcing the presence of god in you. Our words have the power to change our lives. By paying more attention to how we speak, and hence how we think, we can change our circumstances for the better. The Power of the Spoken Word will help you make the positive changes that you've always wanted to make. Be POSITIVE , think POSITIVE.

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19.COCO CHANEL FRENCH FASHION DESIGNER COCO MADEMOISELLE CHANEL PARIS



COMPOSITION:

The fragrance opens with a citrus note of Sicilian mandarin and reveals a voluptuous heart of jasmine absolute, heightened with touches of ylang-ylang from the Comoros and Tunisian orange blossom. You can't

really call yourself fragrance obsessed unless you own a bottle of Chanel No. 5 Perfume. Developed in 1921 with perfumer Ernest Beaux, it was the brand's first and undoubtedly most legendary fragrance. Fashion designer Coco Chanel has been credited with developing the "modern woman." She once said, "I had rediscovered honesty, and in my own way, I made fashion honest." By loosening waistlines, shortening hemlines and embracing pants, Chanel redefined women's style. She was inspired by men's wear: shirts with clean collars, simple sweaters and loose belted jackets. She liberated women from constrictive clothing by making clothes that women could move in. Her designs were a symbol of the independent woman she was.

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20.SECURING THE CLOUD: UNVEILING THE POWER OF CRYPTOGRAPHY

In the era of digital transformation, where data is the vital of businesses and individuals, ensuring its security is essential. Cloud computing, with its vast storage and processing capabilities, has become an integral part of this data-driven landscape. In this context, cryptography emerges as a crucial tool in safeguarding sensitive information, providing a robust defense against evolving cyber threats. Cloud cryptography

involves the use of cryptographic techniques to secure data in cloud environments. The primary goal is to protect data confidentiality, integrity, and authenticity, both during storage and transmission. As data moves between users and the cloud or within different components of cloud infrastructure, cryptography plays a pivotal role in preventing unauthorized access and ensuring the privacy of sensitive information.

At the heart of cloud cryptography lies encryption an intricate process that transforms readable data into an unintelligible format using algorithms and keys. In transit, data encryption safeguards information as it travels between the user and the cloud servers. At rest, it secures data stored in cloud databases or servers, rendering it inaccessible to unauthorized entities without the proper decryption keys.

Effective key management is critical for the success of any cryptographic system. In a cloud environment, where data may be distributed across various servers and locations, securely managing encryption keys becomes a complex but essential task. Cloud service providers often offer key management services, allowing users to generate, store, and rotate encryption keys securely.

While cryptography provides a robust defense, challenges



persist. Key management complexities, potential vulnerabilities in cryptographic algorithms, and the risk of insider threats are among the issues that demand attention. Continuous advancements in cryptographic techniques, regular security audits, and adherence to best practices can address these challenges, enhancing the overall security posture of cloud-based systems. Encryption is just one facet of cloud cryptography. Various cryptographic protocols, such as Transport Layer Security (TLS) for secure communication, and hash functions for data integrity verification, contribute to a comprehensive security framework. These protocols ensure that data remains secure not only during transmission but also when stored in the cloud. As the digital

landscape evolves, so does the field of cloud cryptography. Quantum computing poses a potential challenge to traditional encryption methods, emphasizing the need for quantum-resistant algorithms. Additionally, advancements in homomorphic encryption, which allows computations on encrypted data without decryption, hold promise for enhancing privacy and security in cloud computing.

In conclusion, cloud cryptography stands as a cornerstone in the quest for a secure digital future. As businesses and individuals continue to entrust their data to the cloud, the implementation of robust cryptographic measures becomes imperative. By staying vigilant, embracing evolving technologies, and prioritizing security at every level, we can navigate the cloud with confidence, ensuring the confidentiality, integrity, and authenticity of our most valuable asset—data.

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21.SANSKRIT INFLUENCE ON TECHNOLOGY

Sanskrit, one of the oldest languages globally, plays a surprising role in today's technology. Even though it's ancient, its impact is seen in many areas, like computer programming and artificial intelligence (AI).

In computer programming, languages such as Python, Java, and C++ have borrowed ideas from Sanskrit. The way Sanskrit is structured and its logical rules inspired the creation of programming languages that help computers do complex tasks efficiently. Did you know that the computer's language of '0's and '1's is similar to the concept of 'Shiva' and 'Shakti' in Sanskrit philosophy? They represent the idea of opposites, just like the '0's and '1's in computers. Sanskrit has also helped in making AI smarter. The grammar of Sanskrit is rule-bound, formula-bound, and logical, which makes it highly appropriate to write algorithms.

The grammar also makes Sanskrit suitable for machine learning and even artificial intelligence. Old Sanskrit texts like the Vedas



contain advanced ideas about math, astronomy, and medicine. These texts are still useful for today's technological advancements. Sanskrit's influence isn't just about technology. It also teaches us how to think about problems and solutions in a connected way. This aligns with how we think about complex systems in today's technology.

In summary, Sanskrit's detailed grammar, deep ideas, and knowledge continue to impact modern technology. By blending its wisdom with our new ideas, Sanskrit keeps shaping our digital world.

As technology grows, mixing Sanskrit's ancient wisdom with our new inventions will keep bringing amazing advancements. This shows how Sanskrit's legacy stays relevant and vital in today's tech-driven world.

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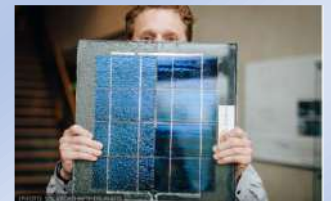


22.ENERGY- PRODUCING ROADS VISION

Solar road to build the first energy-generating electronic automobile path. Technology:

The top layer of the road is made in a such a way that it lets as much as sunlight in, remaining strong and damage resistant. A solar road kit lets you build 10 square meter of solar road, which produces enough electricity to cover the yearly electricity needs of an

average household About energy producing roads: Solar roads are made with solar panels that can



generate electricity. These panels are designed to withstand the weight of vehicles and have the ability to capture sunlight and convert it into usable energy. The electricity generated can be used to power streetlights, traffic signals, or even nearby buildings. It's an exciting and sustainable idea that aims to make our roads more energy- efficient.

Advantages:

One of the biggest benefits is that they can generate clean and renewable energy. By harnessing the power of the sun, solar roads can help reduce reliance on non- renewable energy sources like fossil fuels. Additionally, solar roads can contribute to reducing greenhouse emissions, as they produce electricity without releasing harmful pollutants. They also have the potential to provide a decentralized source of energy, allowing for greater energy independence and resilience. Another advantage is that sustainability by utilizing existing road surface to generate power. This can be especially beneficial in urban areas where space is limited. It also improves the quality of health of earth, humans. It results in minimum expenditure for transportation. Lastly, solar roads can also incorporate smart features like LED lights for road markings and temperature sensors for better solar road maintenance. Overall, solar roads have potential to revolutionize our transportation infrastructure and contribute to greener and more sustainable future.

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23.HOW AI CAN CAUSE PROBLEMS FOR PEOPLE AND THEIR FUTURE

AI can bring problems along with its benefits:
Losing Jobs and Needing New Skills Sometimes, AI takes over jobs that people used to do. This can mean some folks might lose their jobs. People then need to learn new things to get different jobs.

But not everyone might have the chance to learn these new skills. Privacy and Keeping Information Safe AI needs lots of information to learn and work well. But sometimes, this means personal information might not be safe.



AI needs lots of information to learn and work well. But sometimes, this means personal information might not be safe. People worry about their secrets or personal stuff being shared or used in the wrong way without their permission. Not Always Fair and Can Be Tricky AI can sometimes be unfair because it learns from the information it gets. If that info is unfair, AI can make unfair decisions. This can affect things like getting a loan or being treated fairly by the law.

Messing with How People Feel and Act

Using AI a lot might change how people think and act. Relying too much on AI might make folks not think for themselves as much. Also, fake stuff made by AI could make it hard to know what's true and what's not. Making Rich People Richer, Poor People Poorer. Not everyone gets the same chances with AI. Some people might have lots of access to good AI tools because they have money. Others might not get these chances. This could make the gap between rich and poor even bigger. It's important to think about these problems and find ways to solve them. While AI can be amazing, we need to make sure it helps everyone and doesn't cause more problems.

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24.WHAT DO YOU CALL A PERSON WHO IS HAPPY ON MONDAY? UNEMPLOYED!

Unemployment is the greatest challenge that India is facing today. Unemployment is a situation where the person willing to work, fails to find a job that earns him a living. The reasons for this unemployment situation are high population, defective education system, excessive burden on agriculture, low productivity in agricultural sector combined with lack of alternative opportunities for agricultural workers, unskilled workforce, etc. Though millions of students are pouring out of educational institutions every year, they are jobless. The supply of jobs is much less than the huge demand. The reason for this huge demand is the increase in population by leaps and bounds. This again gets directly linked up to poverty which aggravates the situation. Due to poverty, illiteracy has spread its harmful tentacles and in the course of time pushed the Indian youth into anti-social activities. Even if they become educated, the failure of getting job according to their capacity makes them hostile and thus results in strikes and protests. Big cities like Mumbai, Kolkata, Chennai all are pressurised with the influx of rural folk who come here in the hope of better prospects and as a result create pressure on the civic amenities.



A little push in the right direction can make a big difference. But are the institutions

aware of this? Probably not. The best solution to overcome this problem is to vocationalise the education system. India lacks in the field of entrepreneurship and thus, must focus on producing entrepreneurs. They also promote capital formation and employ resources leading to value addition to a specific industry. According to the present situation, among all the nations of the world the number of students enrolled in higher education in India is the highest, but is it valuable? The youth are getting jobs quite lower than their

qualifications or are forced to become the brains of other countries and become productive for other countries because they get more job satisfaction and salary there than in India.

Indian economy is also being hampered due to this problem. It is essential therefore that the economic policy of the country be overhauled. We have to create new avenues in cottage and small scale industries. Besides this, efforts must be made to promote the knowledge of family planning. Gradually the older system of joint family is breaking up and people are opting for nuclear families. Thus, there is a need to create employment opportunities for almost all, while in the joint family the scenario would have been something else.

The Union Government is very keen on checking the problem of unemployment. Several schemes are being initiated. A recent scheme is “One Family, One Job” launched by the Chief Minister of Sikkim where the scheme envisions employment to a member of every family which does not have a government job in the state. Provisions for training of youth for various programmes so that they are capable of setting up their own business and loans must be provided in different forms and situations. The most important thing to focus on is the proper utilisation of government machinery, schemes and programmes and if the education is job oriented, India will definitely see a future free of this chronic, serious and multidimensional problem—Unemployment.

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25.SOLAR STORMS

Ever admired the dazzling auroras and thought, Wow, nature’s light show is fantastic; Well, buckle up, because the same cosmic magic behind those lights can play a practical joke on us. Picture this: the



scientific wizardry that paints our skies also has a mischievous side, capable of turning the lights off in a way that science finds surprisingly amusing. Now that, is a solar storm. These are not the usual storms that include lightning thunder and rain. A solar storm is a term used for atmospheric effects felt on Earth from certain events that occur on the Sun. The sun, is a massive, constantly buzzing celestial ball. Every now and then, it gets a bit magnetic and throws a kind of cosmic tantrum. That's a vague definition for a solar storm. It is a disturbance on the sun, which emanates outwards across the heliosphere, (vast, invisible bubble in space created by the solar wind's constant outflow from the Sun, shaping and protecting our solar system) affecting the entire Solar System, including Earth and its magnetosphere.

Types of solar storms :

Now, there are two types of solar storms – Solar Flares and Coronal Mass Ejections.

Solar Flares: A solar flare is a sudden and brief eruption of intense energy on the sun's surface. It releases a burst of electromagnetic radiation, including X-rays and ultraviolet light. Flares happen relatively quickly, typically within minutes, and their effects on space weather are more immediate.

Coronal Mass Ejections (CME): A CME is a massive expulsion of solar material, primarily plasma and magnetic fields, into space. Unlike solar flares, CMEs release matter into the solar wind, not just electromagnetic radiation. CMEs take longer to develop and can last for days. Their impact on space weather, including geomagnetic storms on Earth, may be delayed after the initial eruption.

Why do solar storms occur?

The sun is made up of 4th state of matter, called the plasma. Plasma is basically ionized gas.

Inside the sun, the continuous movement of charged particles, leads to the generation of strong magnetic fields. On the sun's surface, particularly in areas called sunspots, these magnetic fields become entangled and stressed. When the magnetic tension reaches a tipping point, the sun releases this pent-up energy in the form of a solar flare. This sudden burst emits electromagnetic radiation, including X-rays and ultraviolet light. In a more intense situation, the sun may undergo

a coronal mass ejection (CME). This is akin to the sun expelling a substantial amount of its outer layer into space, carrying magnetic fields with it.

What does it mean for earthlings?

So what? Right? When the sun decides to showcase its energetic prowess with solar flares and coronal mass ejections, Earth gets a front-row seat to the cosmic spectacle. However, this celestial performance isn't always without consequences. The sun's magnetic field, disturbs the earth magnetic field. The entire communication happens on the basis of magnetism. If a strong solar storm hits us, we're in for a universal power outage. That doesn't sound too good right? Moreover, the radiation from the sun can interfere with satellite communication, impacting navigation, telecommunications, and weather monitoring.

Did it happen before? Yes. The Carrington Event of 1859 remains a benchmark, causing telegraph systems to fail globally and auroras visible even at low latitudes. The Halloween Storms of 2003 disrupted satellite operations and caused power outages in Sweden and Canada, highlighting modern vulnerabilities. On Nov 27th , 2023, multiple coronal mass ejections (CMEs) occurred from the Sun on 27 November, 2023. Three of these CMEs appear to have Earth-directed components with the first arrival as a potential glancing blow or near-Earth proximity.

What are we doing for it?

Humanity has stepped up its game in understanding the sun by boosting space weather monitoring. Guarding against solar tantrums involves high-tech vigilance—think cosmic surveillance. Aditya-L1's our sunspot detective, whispering early warnings from its cosmic perch. It's like giving Earth a heads-up before the sun decides to throw up a storm. Satellites and power grid lines are constructed with increased resilience to better withstand the impacts of solar storms. In the unlikely event of a solar storm, the average person should stay informed by monitoring official space weather updates, limit unnecessary use of electronic devices and maintain a basic emergency kit for essentials.

Conclusion:

So that's about it. It's like the sun reminding us that even in the vastness of space, we're not entirely immune to its radiant charm and occasional technical pranks. With a touch of readiness and a dash of humour, we two-step through potential space shenanigans with grace and preparedness intact.

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26.MY HACKATHON EXPERIENCE

Hackathons are like high-energy competitions where teams work together to solve real-world problems. I took part in one and it was a rollercoaster of excitement. We started by picking a problem we wanted to solve, brainstorming ideas, and then diving into the actual building and coding.

Teamwork was crucial – everyone had a role, and we had to make quick decisions. There were tough moments when things didn't go as planned, but we stuck together and found solutions. The atmosphere was buzzing with creativity, and mentors were there to guide us when we got stuck. Late nights were the norm as we are struggling for the final presentation. The pressure was intense, but the shared passion for our project kept us going. When it came time to present to the judges, it was nerve-wracking but also a proud moment. The real victory was the experience itself. The hackathon taught me how to handle pressure, and showed me the importance of teamwork. Looking back, it's not just about the lines of code – it's about the friendships, the challenges, and the satisfaction of presenting something we created together.

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27.WATER CONSERVATION



Water - The Basic Life Support System Being one of the most fundamental natural resources that all living things need, water should be considered a top priority, but human

beings do not really understand its significance in their lives. The earth and the human body are so similar because of the fact that most of it is covered by water, without which survival of any kind would be impossible.

The purpose of water are manifold. Water on earth is required to cultivate vegetation and all plant life. It is a natural habitat for all aquatic animals and sea creatures, water serves its purpose as drinking water for animals and human beings. It is also used by human beings for cooking, cleaning and other household chores.

How Can We Conserve Water?

Inadequacy and contamination of water can lead to serious health hazards. We have been witnessing in the news every day the increasing rates of pollution that is creating a huge demand over the availability of clean water.

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28.FOOD

How Food May Improve Your Mood:

The sugar - laden, high - fat foods we often crave when we are stressed for depressed, as comforting as they are may be the least likely to benefit our mental health.

As people across the globe gripped with higher levels of stress, depression and anxiety



this past year, may turned to their favourite comfort foods: ice cream, pastries, pizza, hamburgers. But studies in recent years suggest that the sugar –ladder and high-fat foods we often crave when we are stressed or depressed, as comforting as they may seem, are the least likely to benefit our mental health. Instead whole foods such as vegetables, fruits, fish, eggs ,nuts and seeds ,beans and legumes and fermented foods like yogurt be a better bet.

But historically nutrition research has focused largely on how the foods we eat affect our physical health, rather than our mental health. For a long time, the potential influence of food on happiness and mental well-being, as one team of researchers recently put it, was “virtually ignored” Large population studies, too have found that people who eat a lot of nutrient foods report less depression and greater levels of happiness and mental well-being. One such study from 2016 that followed 12,400 people for about seven years found that those who increased their consumption of fruits and vegetables during the study period rated themselves substantially higher on questionnaires about their general levels of happiness and life satisfaction.

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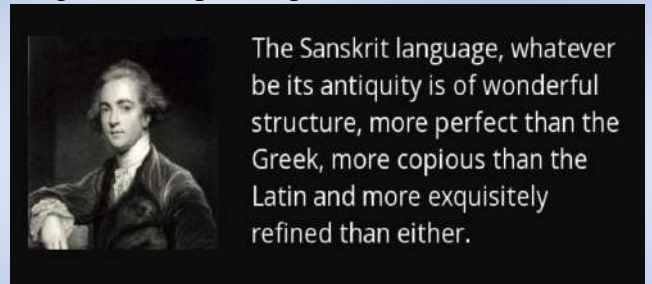
29. SANSKRIT LANGUAGE

Sanskrit is one of the oldest and most refined languages in the world. It is an ancient language that has played a significant role in the development of Indian culture and spirituality. The word "Sanskrit" is derived from the Sanskrit word "samskritam," which means "refined" or "purified." It is a language that has a rich history and is still used today in various fields such as literature, religion, philosophy, and science.

Sanskrit is known for its sophisticated grammar, intricate syntax, and vast vocabulary. It is a language that is highly structured and precise,

which makes it ideal for expressing complex ideas and concepts. Sanskrit has been the language of many ancient Indian texts, including the Vedas, Upanishads, Puranas, and the Mahabharata. These texts are considered to be the foundation of Indian philosophy, religion, and culture.

The origins of Sanskrit are unclear, but it is believed to have developed from an earlier language called Vedic Sanskrit, which was used in the Vedas. Over time, Sanskrit evolved into a sophisticated language with its own unique grammar and syntax. It became the language of the elite in ancient India, and was used for religious and philosophical texts, as well as for



literature and poetry.

Sanskrit is an ancient Indo-Aryan language that holds immense importance in the history of Indian civilization. It is considered to be the mother of all languages and has been the medium of communication for scholars, philosophers, and theologians for centuries. The grammar and writing system of Sanskrit are intricate and highly sophisticated, reflecting the richness of the language itself.

In Sanskrit grammar, there are eight parts of speech known as "Ashtadhyayi," which were systematized by the ancient Indian scholar Panini. These parts of speech include nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, and interjections. Each part of speech is further categorized into different forms, tenses, genders, cases, and numbers, making Sanskrit grammar highly comprehensive.

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30.SOCIAL MEDIA ON MENTAL HEALTH



We, the human beings, are social creatures that require the company of others to make progress in life. In this highly advanced and stressful world being socially connected with other people is the need of the hour that can relieve us of stress, anxiety, and sadness. Lack of social connection can pose serious risks to our mental health. In an era dominated by social media, the social media platforms have become a part of people's daily activities; many of them spend hours each day on Messenger, Instagram, Facebook, WhatsApp and other popular social media. While these platforms offer exceptional opportunities for communication and self-expression, a critical examination reveals profound implications on our mental health. Social media use can lead to social isolation and loneliness. Some studies have suggested that social media use can lead to a decrease in face-to-face social interactions which hinders our physical and mental progress. The constant exposure to curated images and idealized lifestyles can contribute to feelings of inadequacy and low self-esteem among users. Besides the addictive nature of social media, characterized by incessant scrolling and notifications, has raised concerns about its impact on attention spans and the ability to focus besides robbing our precious time and imagination.

In conclusion, there is no denying that social media has become an important part of many People's lives. Social media has many positive and enjoyable benefits, but it can also lead to mental health problems which need to be addressed and attended to immediately otherwise in the process of creating a smarter generation we are losing a valuable generation. Optimal and selective use of social media can help us reap its full benefits.

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31.DIFFICULT PERIOD IN LIFE



Most of the people deal with difficult situations in life. People become stronger in

difficult times. Even though they are unaware of it, nobody truly knows who they are until they are faced with the most trying circumstances. Time will make us into people who are forever known.

Why do some people seem to be better able to cope in these troubling times than others? While everyone's situation is different, **it** is true that people with resilience tend to have a higher tolerance for the emotional distress generated by hard times. The more resilient you are, the better you're able to tolerate the feelings of stress, anxiety, and sadness that accompany trauma and adversity-and find a way to rebound from setbacks. We all go through bad times, we all experience disappointment, loss, and change, and we all feel sad, anxious, and stressed at various times in our lives. But building resilience can help you to maintain a positive outlook, face an uncertain future with less fear, and get through even the darkest days.

Sometimes, you will go through really tough times. It's those times when everything you do just kind of flops, and it feels like your life is going downhill, which makes you feel very sad.

In these challenging situations, maintaining a good mindset is probably the most important thing you can do. It will allow you to stay upbeat, avoid pointless sorrow, persist through the hardship, find smart solutions and eventually turn the situation around.

So, some things aren't going well in your life. That's less than ideal, but if you think about it, there are still lots of things that are going well in your life and there is still a lot to be grateful for. You'll notice that your mindset will begin to shift, you'll become more positive and you'll feel better. And once you're in the right mindset and the right emotional state, it won't take long before you'll

figure a way to overcome the tough situation you're in.

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32. UNLOCKING THE POTENTIAL OF ARTIFICIAL INTELLIGENCE IN EDUCATION: A GLIMPSE INTO THE FUTURE



Artificial intelligence (AI) has emerged as a transformative force in various fields, and its impact on

education is nothing short of revolutionary. As we navigate the ever-evolving landscape of technology, it becomes imperative for educators and students alike to explore the vast possibilities that AI brings to the realm of education.

In recent years, AI has shown great promise in enhancing the learning experience through personalized education. Adaptive learning platforms leverage AI algorithms to understand the unique strengths and weaknesses of individual students, tailoring educational content to suit their specific needs. This not only fosters a more engaging learning environment but also ensures that students can progress at their own pace.

Moreover, AI has the potential to redefine the role of educators. Intelligent tutoring systems powered by AI can assist teachers by providing real-time insights into students' progress and identifying areas that require additional attention. This, in turn, allows teachers to focus on facilitating meaningful discussions, fostering creativity, and nurturing critical thinking skills—aspects of education that are irreplaceable by machines.

In the realm of research, AI opens up exciting avenues for exploration. Machine learning algorithms can analyse vast datasets to identify patterns and trends in educational outcomes, leading to evidence-based decision-making for

curriculum design and policy formulation. The intersection of AI and education research holds the promise of uncovering new insights that can shape the future of teaching and learning.

As we embrace the potential of AI in education, ethical considerations must be at the forefront of our discussions. Ensuring data privacy, addressing algorithmic biases, and promoting inclusivity are crucial aspects that require careful attention. The responsible integration of AI in education demands collaboration between technologists, educators, policymakers, and ethicists to create a framework that prioritizes the well-being of students and fosters a positive learning environment.

In conclusion, the integration of AI in education marks a paradigm shift that has the potential to redefine how we teach and learn. Embracing this technological evolution opens doors to innovation, personalization, and efficiency in education. As we look to the future, it is essential for the academic community to engage in ongoing discourse, research, and exploration of AI's capabilities to unlock its full potential in shaping the next generation of learners. The journey towards a technologically enriched education system is an exciting one, and the collaboration between human intelligence and artificial intelligence holds the key to creating a brighter future for education.

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Program Educational Objectives (PEOs)

PEO1:To impart the knowledge of basic sciences , mathematics and programming skills in solving various Engineering problems pertaining to the field of Electronics and Communications

PEO2:To train the students in analyzing , designing and imparting research based knowledge and acquainting them with modern scientific tools

PEO3:To create professional , ethical environment and to inculcate effective communication skills

PEO4:To encourage team work and interdisciplinary ideas benefiting the society

PEO5:To motivate students to be independent with a desire for life long learning and adapt to the changing professional needs

Program Specific Outcomes – B.Tech. (ECE)

PSO1: Research Activities : Develop abilities to successfully analyze, execute and synthesize hardware and software oriented mini- and technical major- projects in identified specializations and areas of interest, and enrich industry compatibility.

PSO2: Professional Outlook : Establish a good knowledge sharing network and peer connectivity through Professional Society Memberships, Conduct of seminars, Technical Events and Conference Paper Presentations, and earn prominence.

VISION

ECE dept envisions to develop high quality and technically competent women engineers who can address the growing challenges in the modern world with a keen sense of social responsibility.

MISSION

- Knowledge Based Engineering Education (Quality)
- Analysis and Design Skills with Modelling Potential, Technical Competence
- Industry Compatibility and Women Empowerment with Societal Commitment
- Professional Career Growth with Values and Ethics

Program Outcomes (POs) – B.Tech. (ECE)

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design & Development Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Investigation of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6: Engineering & Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment & Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual & Team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management & finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life Long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.