MALLA REDDY ENGINEERING COLLEGE FOR WOMEN

Autonomous Institution – UGC, Govt. of India

Accredited by NBA & NAAC with 'A' Grade

NIRF Indian Ranking, Accepted by MHRD, Govt. of India | Band – Excellent, National Ranking by ARIIA

Maisammaguda, Dhulapally, Secunderabad – 500 010, Telangana

A.Y : 2021-22 VOL.2

Under

Student Chapter IEEE, CSI & ISTE & Technical Association CYNOSURS

INFOSPARK

HALF YEARLY TECHNICAL MAGAZINE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CSE

www.mallareddyecw.com

DEPARTMENT VISION

- Visualizing a great future for the intelligentsia by imparting state-of the art Technologies in the field of Engineering and Technology for the bright future and prosperity of the students.
- To offer world class training to the promising Engineers.

DEPARTMENT MISION

- To nurture high level of Decency, Dignity and Discipline in women to attain high intellectual abilities.
- To produce employable students at National and International levels by effective training programmes.
- To create pleasant academic environment for generating high level learning attitudes.

ABOUT THE DEPARTMENT

The Dept. of CSE with an intake of 240 in B.Tech Programme also offers M.Tech programmes in COMPUTER SCIENCE AND ENGINEERING & COMPUTER SCIENCE. The programmes ensure that the student effectively meets the highest benchmarks of competence required by the industry.

The Dept has state of the art laboratories with latest softwares like Windows 2008, Visual Studio 2012, Ecllipse, WinRunner, QTP, J2EE, .NET, Fedora & Weka Tool. The Dept established IEEE & ISTE student chapters and Dept. Technical Association-CYNOSURES under which it organizes National level Technical Symposium - FUTURE SASTRA and State level Technical Symposium MEDHA every academic year and Student Development Programmes like Workshop on Web Designing, Android & its Application, ADOBE PhotoShop, Ethical Hacking and HTML5.

The Department also organizes Pre-placement training programmes on C-Skills, Java Skills and Project Based training programmes on C, C++, JAVA and Web Technologies and also organizes Intra College Student Conferences on Network Security and Data Base Management Systems and Recent Advancements in Computer Science and also organizes regular student seminar sessions of two hours per week for I - IV B.Tech student to enhance their all round performance.

To provide value added certification courses to students, The Dept. established Micro Soft Innovation Center which offers Micro Soft Certification, CISCO Networking Academy which offers CISCO Certification and in association with ORACLE Corporation, India, It offers Java Certification. The Dept. also offers Business English Certification (BEC) with the help of Center for Development of Communication Skills.

PO'S

PO1	**Engineering knowledge**	An ability to apply knowledge of mathematics (including probability & statistics and Mathematical Foundation of Computer science and Engineering.
PO2	**Problem analysis**	An ability to design and conduct experiments, as well as to analyze and interpret data including hardware and software components.
PO3	**Design / development of solutions**	An ability to design a complex computing system or process to meet desired specifications and needs.
PO4	**Conduct investigations of complex problems**	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering actives with an understanding of the limitations.
PO5	**Modern tool usage**	An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.
PO6	**The engineer and society**	An ability to understanding of professional, health, safety, legal,cultural and social responsibilities.
PO7	**Environment and sustainability**	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and demonstrate the knowledge need for sustainable development.
PO8	**Ethics**	Apply ethical principles, responsibility and norms of the engineering practice
PO9	**Individual and team work**	An ability to function on multi-disciplinary teams.
PO10	**Communication**	An ability to communicate and present effectively
PO11	**Project management and finance**	An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multi-disciplinary environments
PO12	**Life-long learning**	A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning

PSO'S

The graduates of the department will attain:

PSO1: The ability to analyze, design, code and test application specific or complex engineering problems in Cryptography and Network Security, Design and Analysis of Algorithm, Computer Networks, Data Mining, Cloud Computing, Mobile Computing, Cloud Computing, Internet of Things (IoT), Data Science, Artificial Intelligence, Machine Learning, Cyber Security, Block chain Technology, and Big Data by applying the knowledge of basic sciences, engineering mathematics and engineering fundamentals.

PSO2: The ability to adapt for rapid changes in tools and technology with an understanding of societal and ecological issues, relevant to professional engineering practice through life-long learning.

PSO3: Excellent adaptability to function in multi-disciplinary work environment, good interpersonal skills as a leader in a team, in appreciation of professional ethics and societal responsibilities.

PEO'S

PEO1

PROFESSIONAL ENHANCEMENT: Provide the students with strong fundamental and advanced knowledge in Mathematics, Science and Engineering with respect to Computer Science and Engineering discipline with an emphasis to solve Engineering problems.

PEO2

CORE COMPETENCE: Prepare the students through well - designed curriculum to excel in various programmes in Computer Science and Engineering, to meet the needs of the industry and for higher education pursuit.

PEO3

TECHNICAL ACCOMPLISHMENTS: Train the students with intensive and extensive engineering knowledge and skill to analyze, design and create novel products and solutions in the field of Computer Science and Engineering.

PEO4

PROFESSIONALISM: To inculcate in students professional attitude, multidisciplinary approach, ethics, team work, communication, ability to relate computer engineering issues with societal needs and contribute towards nation building.

PEO5

LEARNING ENVIRONMENT: To provide students with an academic environment that inculcates the spirit of excellence, creativity, innovation, leadership, lifelong learning, ethical codes and guidelines to become a successful professional in Computer Science and Engineering.

MESSAGES

Founder Chairman's Message

MRECW has made tremendous progress in all areas and now crossing several milestones within a very short span of time and now I feel very happy to know that the students and faculty of the CSE Department of MRECW are bringing out the volume-2 of the Technical magazine INFOSPARK in A.Y 2021-22. As I understand this magazine is intended to bring out the inherent literary talents in the students and the teachers and also to inculcate leadership skills among them. I am confident that this issue will send a positive signal to the staff, students and the persons who are interestedin the educational and literary activities.

Ch. Malla Reddy
Founder Chairman, MRGI
Hon'ble Minister, Govt. of Telangana State

Principal's Message

I congratulate the department of CSE, MRECW for bringing out the Second issue of the prestigious half yearly department technical Magazine INFOSPARK under A.Y: 2021-22, I am sure that the magazine will provide a platform to the students and faculty members to expand their technical knowledge and sharpen their hidden literary talent and will also strengthen the all round development of the students. I am hopeful that this small piece of literary work shall not only develop the taste for reading among students but also develop a sense of belonging to the institution as well. My congratulations to the editorial board who took the responsibility for the arduous task most effectively. I extend best wishes for the success of this endeavor.

Dr. Y. Madhavee Latha
Principal

HOD'S MESSAGE

INFOSPARK-2022,Our Department magazine show cases thevarious achievements and talents of students. The primary objective of the department has been to impart quality technical education to the students. We providing the students with most conductive academic environment and making them towards serving the society with advanced technologies. Our department provides training sessions, workshops, hands-on, webinars, Industrial visits, Internships and Personality development classes. I am privileged to offer my best wishes. I congratulate students who have contributed their articles in huge volume.

Dr.C.V.P.R.PRASAD
Professor and HOD

FACULTY ARTICLES

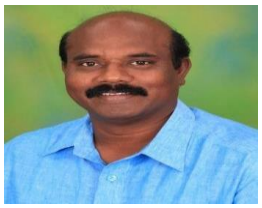
Role of Statistics in Machine Learning :

Machine learning is a field of predictive modelling done based on data set. Data analysis is most important to perform the predictions. So , to do this, Statistics plays a major role.Statistics is generally considered a prerequisite to the field of applied machine learning. Statistics is a collection of tools for summating data and quantifying properties of a domain given a sample of observations. We need statistics to help transform observations into information and to answer questions about samples of observations like
The statistical tools that we use in practice can be helpful to divide the field of statistics into two large groups of methods: descriptive statistics for summating data and inferential statistics for outlining conclusions from samples of data.

Descriptive Statistics refer to methods for outlining raw observations into information that we can understand and share. Commonly, we think of descriptive statistics as the calculation of statistical values on samples of data in order to sum up the properties of the sample of data, such as the common expected value (e.g. mode or mean or median) and the spread of the data (e.g. the variance or standard deviation). Descriptive statistics may also cover graphical methods like Charts and graphics to understand the shape or distribution of observations as well as how variables may relate to each other.

Inferential Statistics refers to the methods that helps in quantifying properties of the domain or population from a smaller set of obtained observations called a sample. Commonly, we think of inferential statistics as the estimation of quantities from the population distribution, such as the expected value or the amount of spread. The most common tools for Inferential Statistics methods used are hypothesis tests which includes null hypothesis and alternate hypothesis, confidence intervals, and regression analysis. One example to better understand the inferential statistics is to estimate the average salary of IT engineer throughout the country. To do this, we can apply the inferential statistics like to collect salary from predefined selective number of IT engineers from a particular city, say Hyderabad . Use this sample data to estimate the average salary of IT engineer throughout the country.

Conclusion: In Descriptive Statistics, we need to first choose a dataset that we need to describe. Wethen measure the subjects in the group but Inferential Statistics allow us to make predictions (inferences) from a given sample data set. The aim of Inferential Statistics is to form interpretations and make a broad statement of the population data beyond the immediate data available. So, Inferential Statistics are more ambitious to perform than Descriptive Statistics.



Dr. KIRUBAKARAN.N
Professor

Quantum Computing : Quantum computing uses powerful computers to solve problems at the atomic and subatomic levels. Unlike classic computers, which perform calculations and store data in binary code, quantum computers use quantum bits, also known as qubits. This allows quantum computers to crunch numbers and solve problems much more quickly than previously possible.

While large tech companies like Google and IBM make strides towards quantum computing advances, the field remains in its infancy. Other fields that can benefit from quantum computing include banking, transportation, and agriculture.

Researchers may use quantum computing to find the best truck delivery routes, determine the most efficient flight schedule for an airport, or develop new medicines quickly and cheaply. Scientists see promise in quantum computing to develop sustainable technologies and solve environmental problems.

Quantum computing careers usually require a master's or doctoral degree. Zip Recruiter reports salaries as high as $160,000 for quantum computing professionals, with an average annual salary of $96,900 as of May 2021. As an emerging computer science specialization, many future quantum computing careers may not yet exist.

Ms. RADHA RANI.A
Associate Professor

STUDENT ARTICLES

AMAZON WEB SERVICES

Nowadays, new business jargon has witnessed animmense success by deploying their services and data on web without depending on any of the physical maneuver. This independence and trend have driven many renowned companies such as Netflix, Salesforce and Amazon towards cloud-based infrastructure Amazon web services (AWS) overshadows the market for offering cloud-based services with top metrics like huge volume, flexibility, availability and large number of customers. However, in addition to several benefits offered by the cloud infrastructure of Amazon (AWS), cloud security remains as the major point of concern for Amazon.The term cloud computing refers to a method through which information and programs can be stored and accessed without storing or accessing it on any physical media. This is highly advantageous to companies that require large amount of disk space. It is a modern means to save internal IT resources, because data is not stored in-house. Rather, data is stored in a “cloud” from where it can be retrieved anytime. In today’s modern world, using cloud computing helps large corporations to make huge savings. This is because they do not need to worry about financing the required software or hardware. Instead, they simply choose a cloud service and obtain the required software or hardware in a few clicks. This is overall a far more economic and fast process compared to traditional methods of storing and accessing data .There are many examples of cloud computing services, including Google drive, Apple iCloud, Dropbox, SugarSync and AWS.

Bethi Sanya
20RH1A6611

INTERNET OF BEHAVIOUR

Gote Nyman, a retired Psychology Professor at the University of Helsinki developed the concept that behaviour can be data mined in 2012.The IoB seeks to explain the data obtained from a behavioural, psychological standpoint from the web interaction of people. It addresses how data are understood and used in developing and marketing new goods from human psychology. Internet of Behaviours (IoB) aims to discuss how data are better understood and used to construct and promote new products from the view point of human psychology. The IoB can be used in a multitude of ways by public or private entities. This technology will become a compelling new marketing and distribution platform for companies and organisationsworldwide.IOB is a blend of three fields-technology,data analytics and behavioura lpsychology.Applications of IOB:Netflix,Insurance sector,COVID-19 pandemic,Social media platforms.The Internet Of Behaviours provides companies with cutting-edge ways of marketing products and services,along with influencing user and employee behaviours.

Bogini Rajyalaxmi
20RH1A6612

ARTIFICIAL INTELLIGENCE

Artificial intelligence is a branch of computer science that seeks to simulate human intelligence in a machine. AI systems are powered by algorithms, using techniques such as machine learning to demonstrate "intelligent" behaviour.Machine Learning is
A computer "learns" when its software is able to successfully predict and react to unfolding scenarios based on previous outcomes. Machine learning refers to the process by which computers develop pattern recognition, or the ability to continuously learn from and make predictions based on data, and can make adjustments without being specifically programmed to do so. A form of AI, machine learning effectively automates the process of analytical model-building and allows machines to adapt to new scenarios independently.

B.Durga Sony
20RH1A6613

PYTHON PROGRAMMING

Python is an interpreted high-level general-purpose programming language. Its design philosophy emphasises code readability with its use of significant indentation. Its language constructs as well as its object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects.Python was conceived in the late 1980s[39] by Guido van Rossum at Centrum Wiskunde& Informatica (CWI) in the Netherlands as a successor to the ABC programming language, which was inspired by SETL,capable of exception handling and interfacing with the Amoeba operating system.Its implementation began in December 1989.Van Rossum shouldered sole responsibility for the project, as the lead developer, until 12 July 2018, when he announced his "permanent vacation" from his responsibilities as Python's "benevolent dictator for life", a title the Python community bestowed upon him to reflect his long-term commitment as the project's chief decision-maker.In January 2019, active Python core developers elected a five-member "Steering Council" to lead the project.

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Ch.Sreya
20RH1A6620

QUANTUM COMPUTER:

Quantum computers exploit the peculiar behaviour of objects at the atomic scale—notably two properties known as superposition and entanglement. At the atomic scale, particles can exist superposed in many states at once and two particles can exhibit entanglement so that changing the state of one may instantaneously affect the other, regardless of how far apart the entangled particles may be. Qubits exploit these properties, but, as discussed later, qubits rapidly decohere, or lose their delicate quantum nature after several seconds, and are extremely sensitive to any form of light, heat, or radiation inside the quantum computer. A quantum computer with only 100 qubits would, theoretically, be more powerful than all the supercomputers on the planet combined, and a few hundred qubits could perform more calculations instantaneously than there are atoms in the known universe. Quantum computing power scales exponentially with qubits (i.e., N qubits = 2N bits). The largest quantum computer built so far is the 79-qubit facility built by IonQ. As discussed later, quantum supremacy will be reached when quantum computers overtake traditional supercomputers.

Ch. Sushma priyanka
20RH1A6618

HOLOGRAPHIC PROJECTION

Holographic projection is the new wave of technology that change how we view things. It has tremendous effect on all field including business and education. A Hologram is a physical structure that diffracts light into an image. A Holographic image can be seen by looking into an illuminated holographic print or by shining a laser through a hologramand projecting the image on to the screen. Projecting and Reflecting images are often described as holographic or even misleadingly holograms, because they have an optical presence and spatial quality. Holography is a method that we use to record patterns of light. These patterns are reproduced as a Three-Dimensional image called a Hologram.Holography is a technique that enables a wave front to be recorded and later re-constructed. Holography is best known as a method of generating three-dimensional images, but it also has a wide range of other applications. In principle, it is possible to make a hologram for any type of wave.

G.Ruchitha

20RH1A6626

AUGMENTED REALITY

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes

Across multiple sensory modalities,including visual, auditory, haptic, somatosensory and olfactory AR can be defined as a system that incorporates three basic features: a combination of real and virtual worlds, real-time interaction, and accurate 3D registration of virtual and real objects. The overlaid sensory information can be constructive (i.e. additive to the natural environment), or destructive (i.e. masking of the natural environment). This experience is seamlessly interwoven with the physical world such that it is perceived as an immersive aspect of the real environment. In this way, augmented reality alters one's ongoing perception of a real-world environment, whereasvirtual reality completely replaces the user's real-world environment with a simulated one. Augmented reality is related to two largely synonymous terms: mixed reality and computer- mediated reality

20RH1A0575
G. Greeshmika Reddy

METAMORPHIC ROBOTS

Robots out on the factory floor pretty much know what's coming. Constrained as they are by programming and geometry, their world is just an assembly line. But for robots operating outdoors, away from civilization, both mission and geography are unpredictable. Here, robots with the ability to change their shape could adapt to constantly varying terrain.Metamorphic robots are designed so that they can change their external shape without human intervention. One general way to achieve such functionality is to build a robot composed of multiple, identical unit modules. If the modules are designed so that they can be assembled into rigid structures, and so that individual units within such structures can be relocated within and about the structure, then self-reconfiguration is possible.These systems claim to have many desirable properties including versatility, robustness and low cost. Each module has its own computer, a rich set of sensors, actuators and communication networks. However, the practical application outside of research has yet to be seen.One outstanding issue for such systems is the increasing complexity for effectively programming a large distributed system, with hundreds or even thousands of nodes in changing configurations.

Farah Tazeen

20RH1A0571

VISUAL MODELING FOR COMPUTER ANIMATION

Over the past decade, the Visual Modeling Research Program at the University of Toronto has consistently championed the concerted exploration of computer graphics and computer vision. Our premise has been this: graphics, the models-to-images problem, and vision, the images-to-models problem, pose mutually converse challenges, which may best be tackled synergistically through the development of advanced modeling techniques catering to the needs of both fields. With illustrated case studies of three projects spanning a twelve-year period, this brief article presents a personal retrospective on image-based modeling for computer animation.I shall begin by reviewing an early computer animation project that use of image-based modeling to combine natural and synthetic imagery. The animation Cooking produced in 1987 at the Schlumberger Palo Alto Research center, introduced a paradigm in which computer vision was applied to acquire 3D models of objects from their images. The acquired models were then dynamically animated in a simulated physical scene reconstructed from the image of a real scene.The human face is a natural objective for the image-based modeling approach. Facial animation is by no means the sole benefactor of an exciting area of advanced graphics modeling that lies at the intersection of virtual reality and artificial life..

20RH1A6658
T.ASHMITHA REDDY

MELLOWVANS

MellowVans provide delivery services in an efficient, low cost, and emission-free way.Clean EnergyBotswana, Namibia, South Africa merce and delivery companies.MellowVans are electric delivery vehicles that provide low cost, efficient, and emission-free utility services in cities. They are unique in a niche market segment, replacing both traditional motorcycle-based deliveries often used in the food delivery category and light van-based deliveries, used for e-commerce and parcels. They are attractive and eye-catching, with class-leading range, acceleration, and safety features.Each vehicle runs at less than a dollar per day in operational costs, provides over 100 km of range, and features 2.4 cubic meters of space, which is more than enough for most urban deliveries. They have been developed with feedback from some of the world's leading e-commerce and delivery companies.MellowVans are safe and feature full IoT functionality, combined with bespoke client-specific offerings like active cooling and security features.Rapid economic growth in Africa has resulted in a substantial increase of new vehicle sales in recent years, predominantly motorized two- and three-wheelers.The region has the highest growth of two- and three-wheelers in the world. This rapid expansion of vehicles has put extra stress on air quality and public health. And while motorcycles are considered among the most fuel-efficient personal modes of transportation, the cumulative effects of the large fleet have a significant impact on overall energy use and road safety.

G. SAI PRANAYA

20RH1A0574

BLOCKCHAIN IN HEALTHCARE

Data security is one of the key issues for individuals and organizations in the 21st century. In looking for solutions, the option of blockchain technology is worth considering across industries for its cohesion and adaptability to storing a wide range of data sources across decentralized locations. One industry that is in dire need of a review of data storage is healthcare with its swathes of clinical, diagnostic, administrative and billing materials spread globally in a range of private and government operations. In fact, this option of blockchain data management puts patients at the centre of the solution, integrating payments and minimizing fraud risks, while streamlining the administrative pressure on health staff that can lead to errors.

In recent times, we are seeing blockchain tech at the forefront of responses to the Covid-19 pandemic. The Harvard Business Review reports that, “20 blockchain applications were launched to address Covid-19 over the course of just two weeks in February, including an online screening system that securely manages health records and a platform that supports the management, allocation, and donation of relief supplies.” In equal parts, as with its use right now during a global health crisis and on localized levels for community health, blockchain tech can be used to respond to the dynamic industry challenges faced every day.

Another aspect to how this tech can uphold public health goals is how it enables secure access to health data across populations instead of siloing information in offices or niche network operators. According to CIO, “Blockchain will leap frog population health by providing trust where none exists for continuous access to patient records by directly linking information to clinical and financial outcomes.” Outside of Covid-19 and major diseases, public health remains a key issue for the individual and collective across all ages.

G.SPOORTHY

20RH1A0578

DEEP WEB

Deep web also called as hidden web or invisible web refers to parts of the Internet not fully accessible through standard search engine like Google, Yahoo and Bing. The deep web includes pages that were not indexed, fee-for-service sites, private databases and the dark web. It is different from the surface web, where contents can be accessed through search engines. Most experts estimate that the deep web is much bigger than the surface web.Fee-for-service sites are one of the major source of deep web content. Although fee-for-service sites such as Netflix, Amazon Prime are visible on the web, most of their content is not. Customers must pay a fee, create a user id, and set up a password to get most of the material offered by these sites. Only those willing and able to pay the fees for these sites can get access to their content. This restriction of information to paying customers goes against the egalitarian spirit of the early Internet. Private databases are also a crucial component of the deep web. Private databases can be as simple as a few photos shared between friends on Dropbox. They also include financial transactions made on major sites like PayPal. The crucial feature of private databases is that people what to share or preserve this information without sharing it with everyone. That makes it part of the deep web rather than the surface web.The deep web gives users access to far more information than the surface web. This information may simply be pages that aren't important enough to be listed. Privacy, which is usually provided by encryption, is another benefit of the deep web. Encryption on the deep web allows fee for service sites to keep their content away from non paying Internet users while serving it to their customers. The encryption of databases is absolutely necessary for all forms of fintech to function properly. Without this security, neither firms nor individuals could safely conduct financial transactions over the Internet.

G.AKSHITHA
20RH1A0580

COGNITIVE COMPUTING

The goal of cognitive computing is to simulate human thought processes in a computerized model. Using self-learning algorithms that use data mining, pattern recognition and natural language processing, the computer can mimic the way the human brain works.While computers have been faster at calculations and processing than humans for decades, they haven't been able to accomplish tasks that humans take for granted as simple, like understanding natural language, or recognizing unique objects in an image

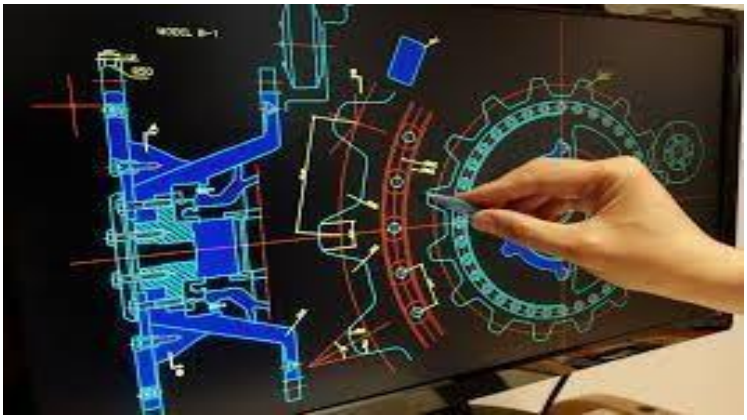
For example, according to this TED Talk video from IBM, Watson could eventually be applied in a healthcare setting to help collate the span of knowledge around a condition, including patient history, journal articles, best practices.

Guggilla.Shravani

20RH1A0586

COMPUTER-AIDED DESIGN

Computer technology requires a completely different methodology of engineering design. It has revolutionized the speed and efficiency of the plastic design functions. The more the entire design function is studied, the more repetitive tasks are uncovered speed is the basis for these productivity gains. The computer continues to provide the engineer with the means to simplify and more accurately develop a design timewise and coastwise. It provides a better understanding of the operating requirements for a product design, resulting in maximizing the design efficiency in meeting product requirements. The computer is able to convert a design into a fabricated product providing a faster manufacturing startup.



Computer-aided design (CAD) uses the mathematical and graphic-processing power of the computer to assist the mechanical engineer in the creation, modification, analysis, and display of designs. Many factors have contributed to CAD technology becoming a necessary tool in the engineering world, such as the computer's speed at processing complex equations and managing technical databases.

K.Mounika

20RH1A05A1

GROWING INFLUENCE OF SOCIAL MEDIA

Social media use has skyrocketed over the past decade and a half. Whereas only five percent of adults in the United States reported using a social media platform in 2005, that number is now around 70 percent.Growth in the number of people who use Facebook, Instagram, Twitter, and Snapchat and other social media platforms — and the time spent on them—has garnered interest and concern among policymakers, teachers, parents, and clinicians about social media's impacts on our lives and psychological well-being.One particularly pernicious concern is whether time spent on social media sites is eating away at face-to-face time, a phenomenon known as ***social displacement.*** No matter what the technology is," there is always a "cultural belief that it's replacing face-to-face time with our close friends and family." says experts.When it comes to teens, the study found that adolescents who spent the most time on social media and the least time in face-to-face social interactions reported the most loneliness. The evidence is clear about one thing: Social media is popular among teens. A 2018 Common Sense Media report found that 81 percent of teens use social media, and more than a third report using social media sites multiple times an hour. These statistics have risen dramatically over the past six years, likely driven by increased access to mobile devices. Rising along with these stats is a growing interest in the impact that social media is having on teen cognitive development and psychological well-being.Social media benefits teens by expanding their social networks and keeping them in touch with their peers and far-away friends and family. It is also a creativity outlet. But there are also risks. The Common Sense Media survey found that 13 percent of teens reported being cyberbullied at least once. And social media can be a conduit for accessing inappropriate content like violent images or pornography.

Hymavathi Banda

20RH1A0593

WIRELESSLY CHARGE WITHOUT ANY DISRUPTION WHILE IN MOTION

The power transfer technology allows devices to get charged regardless of their position or orientation and even on the goThe concept of wireless power transfer has been around since the 1800s, yet work on it intensified after 2010. With the introduction of the Qi wireless charging standard, several phone makers got a headstart in incorporating it into their devices. The technology proved to be a much more convenient alternative to wired charging.Except for a major disadvantage: the digital device with respect to the charger should be precisely aligned for the charging to occur. This meant that in a large charging area, the digital device must be in a relatively known stationary position. Any movement will lead to the misalignment of the transmitter and receiver, and thus no charging. However, that may soon change. Researchers at Aalto University have developed a power transfer technology that works regardless of the position and orientation of the transmitter and receiver. This is possible due to the concise arrangement of the transmitters with the current in the adjacent transmitters running in opposite directions, that is, a clockwise loop in one transmitter and counter-clockwise loops in its neighbours.This creates a grid of 'positive' and 'negative' transmitting coils with a magnetic flux between them. A receiver above the grid of transmitters captures the magnetic flux, which generates an electric current to charge the device."The beauty of our method is that it's very simple yet quite sophisticated,' says Prasad Jayathurathnage, postdoctoral researcher at Aalto University. "We don't need a high-end processor or lots of computations to make the transmitters intelligent. At the end of the day, it's all an electromagnetic system, and our approach was to figure out how we could detect the receiver's presence and position electromagnetically.'Because the receiver is enough to trigger the power transfer, the wireless charging system can thus work without any positional tracking and communication between the receivers and transmitters. This also means that power is only the receiver gets energised, making simultaneous charging of several devices possible.Tiling transmitters together produces a charging area of the desired size and shape.

Sreemya. G
20RH1A6655

IMPORTANT WEBSITES

www.ieee.org/india

www.engineering.careers360

https://www.coursera.org/in

https://www.udemy.com/

www.mathworks.in/products/matlab/

https://archive.org/details/texts

https://www.codecademy.com/

https://www.cse.org/

https://www.scribd.com/books

https://books.google.co.in/

MathGV.com/

http://www.engineeringchallenges.org/

https://www.lumosity.com/en/

http://elevateapp.com/

http://www.tryengineering.org/

http://www.engineergirl.org/

http://www.discoverengineering.org/

http://www.eng-tips.com/

http://efymag.com

http://efymagonline.com/

www.dspguide.com

https://www.engineer4free.com/

www.howstuffworks.com

http://nptel.iitm.ac.in

http://www.opencircuitdesign.com/

http://www.futuresinengineering.com/

INFOSPARK

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