# 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.1

**Under**

**Student Chapter IEEE, CSI & ISTE & Technical Association CYNOSURS**

# INFOSPARK

## HALF YEARLY TECHNICAL MAGAZINE

## DEPARTMENT OF
## COMPUTER SCIENCE AND ENGINEERING

## CSE

## 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-1 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 first 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

**CyberSecurity**

Cybersecurity focuses on protecting computer systems and networks from cyberthreats and attacks. As companies continue storing information on the cloud and conduct operations online, the need for improved cyber security also grows.

Individuals, businesses, and governments experience significant financial losses due to cyberattacks. For example, the ransomware attackin the eastern U.S. in May 2021 cost the Colonial Pipeline about $5 million and inflated gas prices for consumers.

Most industries, including healthcare, financial institutions, and insurance, need better cybersecurity technologies to protect their proprietary and customer data. Because of this demand, the BLS projects a 31% job growth rate for information security analysts from 2019 to 2029. Information security analysts earned a median annual salary of $103,590 as of 2020.

Cybersecurity specialists work at consulting firms, computer companies, and business and financial organizations. Major employers include Apple, Lockheed Martin, and Capital One.

**Potential Jobs:**
- Information Security Analyst
- Chief Information Security Officer
- Information Security Consultant
- IT Security Manager

**Mr.G. Bhanu Prasad**
Associate Professor

## Edge Computing

In contrast to cloud computing, where data is processed and stored far away from the end user in large data centers, edge computing puts computer data at "the edge," close to the end user. Experts do not expect the cloud to disappear completely, but rather work in tandem with edge computing as it brings processing to users, streamlining anything from factory production to self-driving car response.

Technology like autonomous cars, video conferencing, and augmented reality all benefit from edge computing. For example, when an autonomous car makes a split-second decision to brake and avoid a collision, an on-board computer system — edge computing — eliminates the delay of waiting for a server in the cloud to respond.

The BLS projects a 22% job growth rate from 2019 to 2029 for software developers, including edge computing software developers, and reports a median annual salary of $110,140 as of 2020. Industries like telecommunications, security, and oil and gas employ workers with edge computing expertise. Entry-level positions such as software developer or computer network architect usually require a bachelor's.

**Mr.G. Prabhakar**
Associate Professor

## STUDENT ARTICLES

**AEROSOL JET PRINTING**

The 3-D printing has been gaining widespread attention for electronic applications. Aerosol jet printing has emerged as a powerful technique to print new-age sensors and devices on various substrates. In this paper, we use simulation studies to optimize the dimensions and design of aerosol jet printed strain sensor for a good performance. Physical dimensions such as the end loop length, number of grids, grid line width, gauge length, and five different sensor designs are simulated to study their effect on the performance of the strain sensor. This paper helps to identify the factors that affect the sensitivity and gauge factor of the flexible strain sensor fabricated using aerosol jet printing technology.Aerosol jet printing works by spraying out an aerosol – a suspension of small liquid droplets in air – in aprocess that parallels spray painting. Unlike spray paint, however, this aerosol is very precisely deposited, supported by a series of steps that ensure a small, focused beam of material.The process begins in the aerosol chamber (a), which stores the printing ink. This ink contains particles of your desired printing material in an appropriate liquid solvent. Within this aerosol chamber, you'll also find the atomizer, which aerosolizes the ink into small, airborne droplets.From there, an inert gas (b) is pumped in, carrying the aerosol with it. Once the stream is out of the chamber, a virtual impactor (not depicted) removes excess gas to create a denser aerosol mist.Finally, a sheath gas stream (c) is introduced, surrounding the aerosol to help it focus and prevent clogging. This aerosol stream exits the nozzle (d) with a variable diameter and is deposited onto your desired substrate (eg: a smartphone casing). This substrate is held on a moving build platform (e), with the aerosol's long focal distance helping it better accommodate 2D and 3D substrates alike. To target deposition, a controllable shutter precisely blocks and releases the stream based on inputted CAD data.

CHUNCHU VANDANA
20RH1A6216

## MOBILE RECYCLING FACILITIES

An unexpected by product from the explosion of the global hydraulic fracturing industry has been demand for highly mobile water treatment facilities. Investment is being channelled into reverse osmosis units that will allow companies to treat high volumes of water to extract gas and injected into the subsurface.Mobile phones contain a range of materials including metals, plastics and several valuable components - such as silver - which can be extracted and re-used. There are an increasing number of options for recycling and re-using old mobile phones.It is important to ensure that your personal data is removed from your mobile phone before you pass it on or send it for recycling."There will be knock-on benefits as products [will be developed] with new applications where the price tolerance is much lower," says Peter Adriaens, professor of environmental engineering and entrepreneurship at the University of Michigan.Adriaens adds: "As these technologies develop and learn to treat high volumes of water, we will see cheaper, more potable treatment systems and we will start to move away from massive centralised treatment systems."If you'd rather not 'recycle' your phone using any of the above, you can dispose of it at most household waste and recycling centres in the containers marked "small electricals". Search below for your nearest recycling location.If you simply wish to recycle the battery pack of your mobile phone.

KALLEM HARIKA

21RH5A6202

## IR SENSOR

IR sensor is an electronic device that emits the light in order to sense some object of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. Usually, in the infrared spectrum, all the objects radiate some form of thermal radiation. These types of radiations are invisible to our eyes, but infrared sensor can detect these radiations.application of IR SENSOR Night Vision DevicesRadiation ThermometersIR Imaging DevicesIR technology is used in a wide range of wireless applications which includes remote controls andsensing. The infrared part in the electromagnetic spectrum can be separated into three main regions: near IR, mid-IR & far IR. The wavelengths of these three regions vary based on the application. For the near IR region, the wavelength ranges from 700 nm- 1400 nm, the wavelength of the mid-IR region ranges from 1400 nm – 3000 nm & finally for the far IR region, the wavelength ranges from 3000 nm – 1 mm.

G.Manasa

21RH5A0508

## THE IMPACT OF RANSOMWARE

Ransomware is malicious software designed by some of cybercriminals to block a computer system until some amount of money is paid to them.Although Ransomware is usually aimed at individuals, it's only a matter of time before business is targeted as well.The process is similar to how a virus or malware gets into a computer. Emails messages claiming to contain important attachments drive-by download—from websites or ads that seem to offer valuable/illegal stuff for free. Fake antivirus/anti-malware downloads, social engineering methods, friends on social networks enticing you to click on certain links, through botnets, etc.,Exploitations and Infection: when an attack has been successfully done, the malicious ransomware files need to execute on a computer. Though some attacks like phishing attacks, exploit kit exploitation has been done. In the case of Crypto Locker malware, the angel exploits kit is a preferred method to gain execution.Delivery and execution: During this phase, the actual ransomware executables are delivered to the victim's system. Through which it can attach the victim system.Backup spoliation: The ransomware targets the backup files and folders on the victim's system and removes and removes them to prevent restoring from backup.

D.DEEKSHITHA

20RH1A6219

## LOW CARBON PLASTIC RECYCLING PROCESS DEVELOPED USING 'SUPERCRITICAL' WATER

The team from the University of Birmingham used water under incredibly high pressure and temperature called 'supercritical', where its properties and operational behaviour are completely different from ambient/hot water.Supercritical water can be a solvent for all organic materials including plastics. Its gas-like penetration power makes it a superior medium to decompose mixtures of complex waste plastics into value-added materials, which are feedstock for manufacturing new plastics.The team wants to further develop the process, dubbed CircuPlast, to improve the conversion of non-recyclable end-of-life plastics into high-value chemicals for use as feedstock for the plastics industry.The process has been licensed to engineering consultants Stopford. The firm's technology & innovation director Dr Ben Herbert said: "This agreement enables Stopford to fast-track the development of the CircuPlast technology to meet the plastics management and sustainability requirements of multiple industry sectors."2David Coleman, CEO of University of Birmingham Enterprise, said: "The growth of plastics production has long outstripped the capacity for recycling, with the UK alone producing over two million tonnes of plastic packaging waste each year, of which just over half is recycled. We are delighted the university is working with Stopford to deliver a viable way of recycling much more plastic packaging that will help meet sustainability goals."CircuPlast will be an eco-friendly technology using 'supercritical' water rather than industrial solvents for the repurposing of waste plastics adopting a circular approach. The technology will provide a sustainable alternative to fossil-oil-derived feedstocks with no $CO_2$ emissions in the production or disposal phases.Lead researcher Dr Bushra Al-Duri, of the University of Birmingham's School of Chemical Engineering, added: "Supercritical water technology represents the next generation for treatment and recycling of 'stubborn', complex, and hazardous waste that is currently treated by incineration or sent to landfill.

20RH1A05A8

K.Dakshayani

**SILENT SOUND TECHNOLOGY**

Everybody has the experience of talking aloud in the cell phone in the midst of the disturbance while travelling in trains or buses. There is no need of shouting anymore for this purpose. 'Silent sound technology' is the answer for this problem.'Silent Sound' technology aims to notice every movement of the lips and transform them into sounds, which could help people who lose voices to speak, and allow people to make silent calls without bothering others.Rather than making any sounds, your handset would decipher the movements your mouth makes by measuring muscle activity, then convert this into speech that the person on the other end of the call can hear. So, basically, it reads your lips.This new technology will be very helpfulto make silent calls without disturbing others, even we can tell our PIN number to a trusted friend or relative without eavesdropping.At the other end, the listener can hear a clear voice. the awesome feature added to this technology is that "it is an instant polyglot" I.E, movements can be immediately transformed into the language of the user's choice. This translation works for languages like English, French & German. But, for the languages like Chinese, different tones can hold many different meanings. This poses Problem said Wand. he also said that in five or may be in ten years this will Be used in every day's technology. The purpose of this paper is to give the amazing solution for those who had lost their voice but wish to speak over phone. It is developed at the Karlsruhe Institute of Technology and you can expect to see it in the near future. When demonstrated, it seems to detect every lip movement and internally converts the electrical pulses into sounds signals and sends them neglecting all other surrounding noise. It is definitely going to be a good solution for those feeling annoyed when other speak loud over phone.

G. Pavani
20RH1A0592

## BIO-COMPUTER
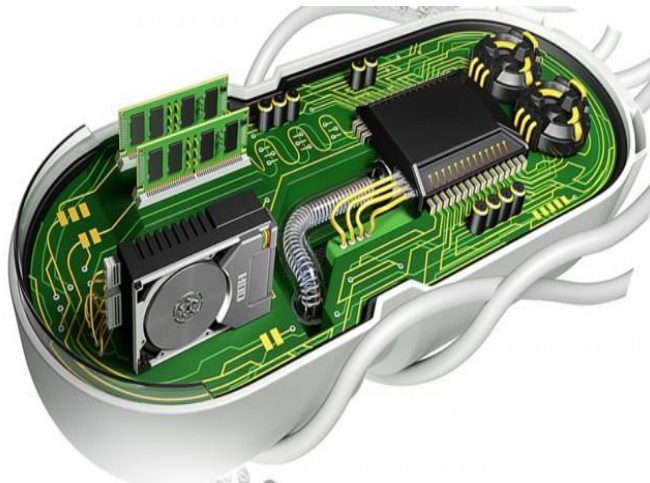


Biological computers are a kind of biosensors which have emerged as an interdisciplinary field that draws together molecular biology, chemistry , computer science and mathematics. The highly predictable hybridization chemistry of DNA is the ability to completely control the length and content of oligonucleotides and the wealth of enzymes available for modification of the DNA and make use of nucleic acids an attractive candidate for all of these nanoscale applications . These are mainly used for monitoring body′s activities by inducing therapeutic effects at molecular and cellular level. Biocomputing is one of the new fields in research which deals with computer science and biology but doesn′t fit to both . A ′DNA computer′ has been used for the first time to find the only correct answer from over a million possible solutions to a computational problem . The implantable biological computer is a device which could be used in various medical applications where intercellular evaluation and treatment are needed or required. It is especially useful in monitoring intercellular activity including mutation of genes. The main advantage of this technology over other like technologies is the fact that through it, a doctor can focus on or find and treat only damaged or diseased cells



K.Anvitha
20RH1A05A0

## ROBO FISH POWERED BY HUMAN CARDIAC CELLS

A Synthetic fish built from plastic and gelatine and powered by human cardiac cells might oneday be useful for treating heart disease.An artificial fish built from human heart cells couldteach us how the organ functions.The human heart can pump without signals from the brain, afeature known as automaticity. This is coordinated using electrical signals and mechanicalfeedbackwithinheart celltissue, but theprocessisn't fullyunderstood.
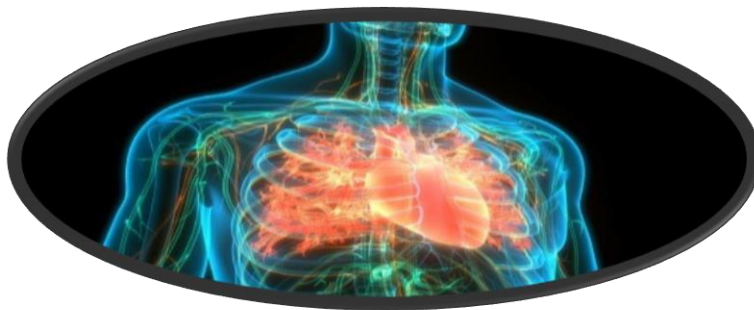


Bio hybrid organisms, which are devices containing biological components, provide a way to study physiological control mechanisms inliving organisms and may inspire robotic solutions to various challenges. Lee et al.Designed a swimming fish analog using a bilayer construct made of cardiac cells. Thesecells generate autonomous, rhythmic, antagonistic muscle movements that are either light induced or self paced,thusex ploiting botht hemechano electrical signaling and automaticity of cardiac cells. The bio hybrid fish showed increased performance over previous bio hybrids and provided insight into how mechanoelectrical signaling can be used for self-paced muscleactuation.



G. SREEYA
18RH1A0571

## PAPER BATTERY

A paper battery is an electric battery which was engineered to use a spacer formed largely of cellulose -the major constituent of paper. This helps incorporates nano-scale structures to act as high surface-area electrodes to perk up conductivity.In addition to being unusually thin, paper batteries are more flexible and environmentally-friendly compared to other batteries. These batteries allow integration into a wide range of products; and their functioning is similar to conventional chemical batteries with a significant difference that they are non-corrosive and do not require widespread housing.This battery produces electricity in the same way as the conventional lithium-ion batteries, but all the components that have been incorporated into are lightweight, flexible sheet of paper.These devices are formed by combining cellulose with an infusion of aligned carbon nanotubes.The electrolyte and the ions that carry the charge can be varied depending the use of the battery.A conventional Li-ion battery can be incorporated in cellulose-nanotube composite as shown in the blow image.The creation of the Paper Battery drew from a diverse pool of disciplines, and these batteries require expertise in materials science, energy storage, and chemistry. However, in August 2007, a research team at Rensselear Polytechnic Institute Led by Drs. Robert Linhardt, John H. Broadbent, Pulickel M. Ajayan, OmkaramNalamasu with a joint meeting in Material Science and engineering developed the Paper Battery, which is also known as Nano Composite Paper. In December 2009,Yi Cui and his team at Stanford University successfully made an actual prototype.

G.Pooja
20RH1A6622

## CHATBOT TECHNOLOGY

The use of chatbots evolved rapidly in numerous fields in recent years, including Marketing, Supporting Systems, Education, Health Care, Cultural Heritage, and Entertainment.Artificial Intelligence (AI) increasingly integrates our daily lives with the creation and analysis of intelligent software and hardware, called intelligent agents. Intelligent agents can do a variety of tasks ranging from labour work to sophisticated operations. A chatbot is a typical example of an AI system and one of the most elementary and widespread examples of intelligent Human-Computer Interaction (HCI).Chatbots can mimic human conversation and entertain users but they are not built only for this. They are useful in applications such as education, information retrieval, business, and e-commerce. They became so popular because there are many advantages of chatbots for users and developers too. Most implementations are platform-independent and instantly available to users without needed installations. Concerning the user's trust in chatbots, it depends on factors relative to the chatbot itself, like how much it responds like a human, how it is self-presented, and how much professional its appearance.

Sahruthi Garipelly
20RH1A6625

## 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.

K . Pravalika

20RH1A6633

## DETECTION OF DIGITAL PHOTO IMAGE FORGERY

Digital images can be obtained through a variety of sources including digital cameras. With rapidly increasing functionality and ease of use of image editing software, determining authenticity and identifying forged regions, if any, is becoming crucial for many applications. This paper presents methods for authenticating and identifying forged regions in digital photo images that have been acquired. Our reexamination of some of these recently successful experiments shows that variations in image clarity in the experimental datasets were correlated with authenticity, and may have acted as a confounding factor, artificially improving the results.Digital image forgery is the process of manipulating photographic images using image-processing tools like digital photo editing software to produce a digital image. There is a need to identify the authenticity of the image. In case of copy move type, some part of the image is cut and pasted somewhere in the image so that there are no manipulations like rotation, scaling etc. In the other case, due to the above-mentioned types, the data becomes highly correlated Manipulation of early photographic images was not an easy task, requiring a high level of technical expertise and specialized equipment. Alterations had to be made to the negatives, thus, if access could be obtained to the negatives, the authenticity or otherwise of the image could be determined by visual examination. A comparative study of the existing algorithms helps to investigate new methods.Tampering with photographic images dates back almost to the time when permanent photographic images were first created. One of the earliest instigators of photographic image tampering was Vladimir Lenin, who, for political reasons, instructed that certain individuals be removed from photographs.

A.Adithi Reddy

20RH1A6701

## THE DATAFICATION OF OUR WORLD

Business Intelligence (BI) is a topic of growing importance for both industry and academia. Although still viewed from its technology roots, it is slowly broadening to encompass the data infrastructure, applications, tools and best practices required for the effective capture, representation and delivery of data to inform decision making and action. The lines between enterprise and social intelligence are also becoming increasingly blurred, as action from decision making is oriented at influencing people's (future) behaviour. From an industry perspective, BI is consequently seen as a fruitful foundation for innovation, competition and productivity. From an academic perspective, the richness and importance of the area for research is becoming increasingly apparent .Data is the underlying resource for BI (accepting limitations of data protection and privacy). Arguably, it is the increasing availability of data (so-called 'big data' ultimately) that provides the impetus for BI, most typically characterised by industry commentators. Datafication can be conceptualised via three innovative concepts that allow the logic of value creation to be rethought – dematerialisation, liquification and density. Dematerialisation highlights the ability to separate the informational aspect of an asset/resource and its use in context from the physical world. Liquification highlights the point that, once dematerialised, information can be easily manipulated and moved around (given a suitable infrastructure), allowing resources and activity sets that were closely linked physically to be unbundled and 'rebundled' – in ways that may have traditionally been difficult, overly time-consuming or expensive.

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A.Jahnavi Reddy

20RH1A6702

## GENERATIVE AI

Translating an image or extracting realistic textual descriptions from it. Better not feel feverish since a more responsible AI (that is Generative AI) apparently coming out as the 2022 buzzword will artificially translate, create great content (video, text, or audio) for you and your enterprise. Conceptually, it is well-versed with revealing the underlying patterns in accordance with the implications of RL or Reinforcement Learning algorithms that later on Encodes any type of input. Recognizes it.Classifies, and then generates content making you believe that it is real, 100% legitimate. Indistinguishably, the concepts Generative AI responds to can compute and map visualizations of real-time entities thereby supervising, modeling the predictions beyond your reach. By the year 2025, as per CRN's insights, you will spot the use-cases of this buzzword in politics, security departments, medical diagnosing, and coding too firmly amplifying the strengths of business models so that people can access the content really valuable to them.

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AnugulaAkshara
20RH1A6705

## LOW-CODE/NO-CODE SOLUTIONS

Low-code/no-code solutions have an amazing ability. And it is – speeding up software development processes!! From now onwards, developers or competitive coders need not embed coding languages intensively. Are low-code or no-code solutions not only time but also cost-saving?? Yes, the way they powerfully and technically ramp up the development process:saves a lot of time and cost which developers or coders need to invest in learning and writing lots of codes. Besides, their unique and company-ready features may rapidly help the remaining less coding-fluent programmers who are well-versed with the ins and outs of other opportunities that capably will increase the visibility of your businesses online.Still, paying out hundreds and thousands of dollars in order to maintain & build applications accepting the conventional ways of programming? Better start knowing more about the workflows andcommercial packages of these low or no-code solutions reaping fruits corresponding to the efforts of lesser competent tech-enthusiasts (mostly developers and programmers) already shifted to your workspace.

Bantu sandhya
20RH1A6706

## ZERO-TRUST POLICIES

The Zero Trust Network, or Zero Trust Architecture, model was created in 201 0 by John Kindervag, who at the time was a principal analyst at Forrester Research Inc. Now, seven years later, CIOs, CISOs and other corporate executives are increasingly implementing Zero Trust as the technologies that support it move into the mainstream, as thepressure to protect enterprise systems and data grows significantly, and as attacks become more sophisticated.Zero-trust models shift the focus to the individual user without a need for VPN technology, so access controls are enforced no matter where the user is or what device they're using. Any user ordevice attempting to access a network or its resources requires authorization, which creates higher security limits on file-sharing, application downloads, and data usage. It also extends to employees using their personal devices, which can alleviate some of the worry that well-meaning employees could cause an unintentional breach. Zero Trust Worksby Execution of this framework combines advanced technologies such as risk based multi-factor authentication, identity protection, next-generation endpoint security, and robust cloud workload technology to verify a user or systems identity, consideration of access at that moment in time, and the maintenance of system security. Zero Trust also requires consideration of encryption of data, securing email, and verifying the hygiene of assets and endpoints before they connect to applications. Zero Trust is a significant departure from traditional network security which followed the "trust but verify" method. The traditional approach automatically trusted users and endpoints within the organization's perimeter, putting the organization at risk from malicious internal actors and legitimate credentials taken over by malicious actors, allowing unauthorized and compromised accounts wide-reaching access once inside. This model became obsoletewith the cloud migration of business transformation initiatives and the acceleration of a distributed work environment due to the pandemic that started in 2020.

20RH1A6708
B.RUKMINI

## 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

## 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