



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 : 2022-23 VOL1

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.

Vision



DEPARTMENT MISSION

- 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.

Mission



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, Eclipse, 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



Ch. Malla Reddy

Founder Chairman, MRGI

Hon'ble Minister, Govt. of
Telangana State

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 2022-23. 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 interested in the educational and literary activities.

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: 2022-23, 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 the various 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 conducive 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.



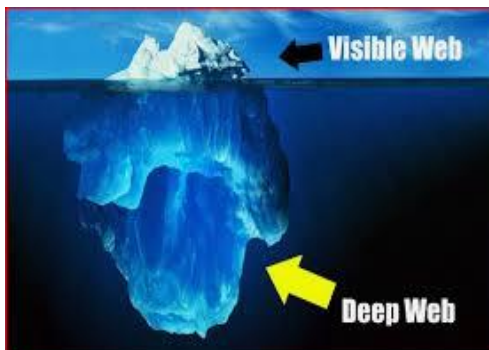
Dr. C.V.P.R. PRASAD Professor and HOD

FACULTY ARTICLES

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 sources 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 want to share or preserve this information without sharing it with everyone. 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 necessary for all forms of fintech to function properly.



Dr.D.B.K.Kamesh
Professor

DIGITAL RUPEE

Digital currency or rupee is an electronic form of money, that can be used in contactless transactions. The Central Bank Digital Currency (CBDC) will be a digital currency issued by the central bank, i.e. the Reserve Bank of India (RBI) and it will be based on Block Chain and other technologies. One of the main reasons why the RBI is going to launch a digital rupee is that India doesn't want to miss the virtual currency bandwagon.

A digital rupee will be fundamentally different from private cryptocurrencies like Bitcoin because it will be backed by the state and will have an intrinsic value. The government has called Bitcoin and other cryptocurrencies virtual assets, which means they will not be legal tender and digital rupee will be counted as currency in circulation.

A large part of transactions in India's economy are still carried out using untreacable cash, this can be replaced by digital rupee.

Thus it can be concluded that the digital rupee will replace physical cash. It is an online token and has no physical presence and it is a perfect replacement of cash for an economy.



Dr. Nagamani chippada
Professor

STUDENT ARTICLES

BLOCKCHAIN TECHNOLOGY

Though the Blockchain Technology was invented in 1991, it was popularized by a person (or group of people) using the name Satoshi Nakamoto in 2008 to serve as the public transaction ledger of the cryptocurrency bitcoin, based on work by Stuart Haber, W. Scott Stornetta, and Dave Bayer. The identity of Satoshi Nakamoto remains unknown to date. A blockchain is a digital record of transactions. The name comes from its structure, in which individual records, called blocks, are linked together in single list, called a chain. Blockchains are used for recording transactions made with cryptocurrencies, such as Bitcoin, and have many other applications. Blockchain is the technology that underpins the cryptocurrency Bitcoin, but Bitcoin is not the only version of a blockchain distributed ledger system in the market. There are several other cryptocurrencies with their own blockchain and distributed ledger architectures. The blockchain is a chain of data blocks. Each block can be thought of as a page in a ledger. The individual blocks are composed of several components. Generally as block contains Hash, Data, Previous Hash. Hashing is the process of converting a given key into another value. The result of a hash function is known as a hash value or simply, a hash. A good hash function uses a one way hashing algorithm, or in other words, the hash cannot be converted back into the original key. Blockchain uses SHA 256 Hashing. Immutability, Provenance, Single Source of Truth, Standardization, Smart Contract are the properties of blockchain. Banking, Supply Chain Management, Luxury Goods/Limited Edition, Healthcare, Shared Economy- Private Transport and Ridesharing, Government Services are some of the Applications.

B.Durga Sony
20RH1A6613



ARTIFICIAL INTELLIGENCE IN DIGITAL MARKETING

Artificial Intelligence is a method in computer science where it is taught to understand and mimic human conversation and human behavior. Artificial Intelligence has produced a new intelligent machine which thinks, responds and performs tasks just like humans based on the data fed. AI can perform highly technical and specialized tasks such as robotics, speech and image recognition, also natural language processing and problem-solving etc.

Digital marketing is when you apply digital tools and data and a variety of different technologies, to support marketing. The authors continued to say that technology results are intended to identify the level of digital marketing resources. The objective of Chaffey & Ellis-Chadwick is to let you know about a common-sense tactic, even if you obtain the newest technology that does not put you in the driving seat with it. It does not mean a win automatically.



Artificial Intelligence (AI) will change how keyword research is done. Artificial Intelligence will become more ubiquitous so that Search Engine Optimization (SEO) specialists understand the knowledge about automated learning and automation.



Avutha Anusha
20RH1A6204

RECURRENT NEURAL NETWORKS(RNN)

A Recurrent Neural Network is a type of artificial neural network commonly used in speech recognition and natural language processing. Recurrent Neural Network recognize data's sequential characteristics and use patterns to predict next likely scenario. A recurrent neural network is an extension of a conventional feedforward neural network, which is able to handle a variable-length sequence input. The reason that RNN can handle time series is that RNN has a recurrent hidden state whose activation at each time is dependent on that of the previous time. Long short-term memory units are one type of RNN, which make each recurrent unit to adaptively capture dependencies of different time scales. LSTMs have cell and forget gate to modulate the flow of information. Recurrent neural networks leverage backpropagation through time algorithm to determine the gradients, which is slightly different from traditional backpropagation as it is specific to sequence data. The principles of BPTT are the same as traditional backpropagation, where the model trains itself by calculating errors from its output layer to its input layer. Recurrent neural networks are particularly good in the processing sequence of data, like music, audio, video, speech recognition, that is predicting the pattern in time series. A single time step of the input is provided to the network. Then calculate its current state using set of current input and the previous state. Once all the time steps are completed the final current state is used to calculate the output. The output is then compared to the actual output that is the target output and the error is generated. The error is then back-propagated to the network to update the weights and hence the network is trained.



M AMULYA

21RH5A6204

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.

T. ShreyaaMadhury

20RH1A6254



VIRTUAL REALITY

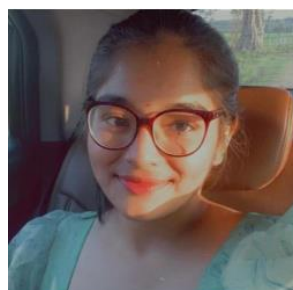
Virtual reality is a technology that attempts to regenerate computer images and videos to produce real-life visual experiences that are beyond those achieved on the ordinary computer monitor and phone. VR systems do so by using computer vision and advanced graphics to generate 3D images and video by adding depth, and by reconstructing the scale and distances between static 2D images.

Virtual reality is three types

1. NON-IMMERSIVE VIRTUAL REALITY.
2. SEMI-IMMERSIVE VIRTUAL REALITY.
3. FULLY IMMERSIVE VIRTUAL REALITY.

Virtual reality or VR is a technology that creates a virtual environment. People interact in those environments using, for example, VR goggles or other mobile devices. It is a computer-generated simulation of an environment or 3-dimensional image where people can interact in a seemingly real or physical way. •Virtual reality is a fully digital, computer-generated, threedimensional experiential environment. Unlike traditional user interfaces that only allow users to view a screen, VR allows the user to step inside an experience, to be immersed in and interact with a 3D world that can either simulate or differ completely from the real world.

T.BHAVANA
20RH1A6253



AI CHATBOTS

A **chatbot** or **chatterbot** is software application used to conduct an on-line chat conversation via text or rest-to-speech, in lieu of providing direct contact with a live human agent. A chatbot is a type of software that can help customers by automating conversations and interact with them through messaging platforms. Designed to convincingly simulate the way a human would behave as a conversational partner, chatbot systems typically require continuous tuning and testing, and many in production remain unable to adequately converse, while none of them can pass the standard Turing test. AI chatbots can understand language outside of a set of pre-programmed commands and continue learning based on the inputs it receives. They can also make changes based on patterns and become smarter over time as they experience new situations. This means AI bots can be applied to a range of uses – from sentiment analysis to making predictions about what a visitor is looking for on your website. But, there's a key difference between AI chatbots and just plain chatbots– and at its core, that difference boils down to understanding the difference between artificial intelligence and automation. Building an artificial intelligent bot yourself requires some serious expertise. I won't go into too much detail explaining the nuances of NLP, deep learning, and other algorithmic forms of intelligence. At the base level, an AI chatbot is fed input data, which it interprets and translates into a relevant output – or the response the user receives after asking a question. So the AI chatbot receives information from a programmer. And then over time it's “trained” to understand context through several algorithms that involve tagging parts of speech.

20RH1A6251
Syeda Sufiya Rana



AMAZON S3

Amazon Simple Storage Service (S3) is a highly reliable web service that allows developers to securely store and retrieve object data in the AWS cloud. After Amazon EC2, Amazon S3 is one of the most commonly used services. Data on Amazon S3 is spread across multiple devices and availability zones within a region automatically. Amazon S3 is an object-based storage service. It is ideal for storing files but cannot be used to install an operating system; thus, it cannot provide the storage for an EC2 instance. Data within Amazon S3 is stored using a key-value system, with keys being globally unique.



Amazon S3

Amazon S3 offers a range of storage classes designed for different use cases. For example, you can store mission-critical production data in S3 Standard for frequent access, save costs by storing infrequently accessed data in S3 Standard-IA or S3 One Zone-IA, and archive data at the lowest costs in S3 Glacier Instant Retrieval, S3 Glacier Flexible Retrieval, and S3 Glacier Deep Archive. You can store data with changing or unknown access patterns in S3 Intelligent-Tiering, which optimizes storage costs by automatically moving your data between four access tiers when your access patterns change. These four access tiers include two low-latency access tiers optimized for frequent and infrequent access, and two opt-in archive access tiers designed for asynchronous access for rarely accessed data.

GIRI SAI NIKITHA

20RH1A6226



AUGMENTED REALITY

Augmented Reality (AR) is a new technology that involves the overlay of computer graphics on the real world. One of the best overviews of the technology is, that defined the field, described many problems, and summarized the developments up to that point. That paper provides a starting point for anyone interested in researching or using AR.

AR is within a more general context termed Mixed Reality (MR), which refers to a multi-axis spectrum of areas that cover Virtual Reality (VR), AR, telepresence, and other related technologies. Virtual Reality is a term used for computer-generated 3D environments that allow the user to enter and interact with synthetic environments. The users are able to “immerse” themselves to varying degrees in the computer's artificial world which may either be a simulation of some form of reality or the simulation of a complex phenomenon.



The AR components are, the scene generator is the device or software responsible for rendering the scene. Rendering is not currently one of the major problems in AR, because a few virtual objects need to be drawn, and they often do not necessarily have to be realistically rendered in order to serve the purposes of the application. The tracking system is one of the most important problems on AR systems mostly because of the registration problem. The objects in the real and virtual worlds must be properly aligned with respect to each other, or the illusion that the two worlds coexist will be compromised.

G.SHIVAN
20RH1A6225



FACE UNLOCKING IN SMARTPHONES

Facial recognition is a part of biometric technology that identifies a person by face .It is described as Biometric Artificial Intelligence which is used to capture a person's facial features like eye retina, nose, face shape .Initially Android operating system introduced face unlocking from its Android version(4.0) in 2011 but the main drawback of this unlocking technique was it can only be used to store 2D images so it was very easy for anyone to fool the system and unlock the phone. Next Samsung came up with an iris scanner which works based on retina of the eye, just like human fingerprints are unique retina of eye is also unique no one can copy it .one disadvantage of iris technology is that it generally requires close proximity to camera, which can cause discomfort to eyes. Face ID is a type of facial recognition technology that Apple company has designed in 2017.It is more promising with its accuracy and security and it is based on 3D facial recognition sensor.Of all the biometric measurements, facial recognition is considered the most natural and also this makes sense, since we typically recognize ourselves and others by looking at faces, rather than thumbprints and iris.Facial recognition technology is been in use for the past few years and with the improvements in security and speed, the technology is evolving slowly to newer heights and advanced levels..

B.Vyshnavi
20RH1A6208



COMPUTER GRAPHICS

Computer graphics deals with generating images with the aid of computers. Today, computer graphics is a core technology in digital photography, film, video games, cell phone and computer display and many specialized applications. A great deal of specialized hardware and software has been developed, with the displays of most devices being driven by computer graphics hardware. It is a vast and recently developed area of computer science. The phrase was coined in 1960 by computer graphics researchers Verne Hudson and William Fetter of Boeing. It is often abbreviated as CG, or typically in the context of film as computer generated imagery (CGI). The non-artistic aspects of computer graphics are the subject of computer science research. Some topics in computer graphics include user interface design, sprite graphics, rendering, ray tracing, geometry processing, computer animation, vector graphics, 3D modelling, shaders, GPU design, implicit surfaces, visualization, scientific computing, image processing, computational photography, scientific visualization, computational geometry and computer vision, among others. The overall methodology depends heavily on the underlying sciences of geometry, optics, physics, and perception. Computer graphics is responsible for displaying art and image data effectively and meaningfully to the consumer. It is also used for processing image data received from the physical world, such as photo and video content. Computer graphics development has had a significant impact on many types of media and has revolutionized animation, movies, advertising, video games, in general.

Bachawar Pallavi
20RH1A6205



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.

A.Mani Manognya

20RH1A6202



WIRELESS RECHARGEABLE SENSOR NETWORKS

When extending the life of Wireless Rechargeable Sensor Networks (WRSN), one challenge is charging networks as they grow larger. Overcoming this limitation will render a WRSN more practical and highly adaptable to growth in the real world. Most charging algorithms require a priori full knowledge of sensor nodes' power levels in order to determine the nodes that require charging. In this work, we present a probabilistic algorithm that extends the life of scalable WRSN without a priori power knowledge and without full network exploration. We develop a probability bound on the power level of the sensor nodes and utilize this bound to make decisions while exploring a WRSN. We verify the algorithm by simulating a wireless power transfer unmanned aerial vehicle, and charging a WRSN to extend its life. Our results show that, without knowledge, our proposed algorithm extends the life of a WRSN on average 90% of what an optimal full knowledge algorithm can achieve. This means that the charging robot does not need to explore the whole network, which enables the scaling of WRSN. We analyze the impact of network parameters on our algorithm and show that it is insensitive to a large range of parameter values.

20RH1A05F5
N. Sai Nikitha



E CASH PAYMENT

Electronic payment systems come in many including digital checks, debit cards, credit cards, and stored value cards. The usual security features for such systems are privacy (protection from eavesdropping), authenticity (provides user identification and message integrity), and non-repudiation (prevention of later denying having performed a transaction). The type of electronic payment system focused on in this paper is electronic cash. As the name implies, electronic cash is an attempt to construct an electronic payment system modelled after our paper cash system. Paper cash has such features as being: portable (easily carried), recognizable (as legal tender) hence readily acceptable, transferable (without involvement of the financial network), untraceable (no record of where money is spent), anonymous (no record of who spent the money) and has the ability to make "change." The designers of electronic cash focused on preserving the features of anonymity. Thus, electronic cash is defined to be an electronic payment system that provides, in addition to the above security features, the properties of user anonymity and payment.

D.Chandana
21RH5A0504



COCKPIT – CREW SYSTEM DESIGN AND INTEGRATION

Computer technology is racing ahead at an alarming rate. New computers and revisions of current ones are available almost monthly, each with additional capabilities to offer. The physical size of a computer that once filled a large room has been reduced to a small integrated circuit module on a circuit board with far greater computing power. The light weight, high-speed computational capability is ideally suited for use in aircraft and is being exploited in many ways. Individual computers presently being used for systems such as flight controls, navigation, air, data, and threat detection can easily be replaced by a single sophisticated computer which integrates those functions and many more. This new technology is undoubtedly the one that will singularly have the most far-reaching effects on crew systems in both the near term and the long term.

CH.SINDHUTA

20RH1A0548



REINFORCEMENT LEARNING

Reinforcement learning is an area of Machine Learning. It is about taking suitable action to maximize reward in a particular situation. It is employed by various software and machines to find the best possible behaviour or path it should take in a specific situation. Reinforcement learning differs from supervised learning in a way that in supervised learning the training data has the answer key with it so the model is trained with the correct answer itself whereas in reinforcement learning, there is no answer but the reinforcement agent decides what to do to perform the given task. In the absence of a training dataset, it is bound to learn from its experience. The problem is as follows: We have an agent and a reward, with many hurdles in between. The agent is supposed to find the best possible path to reach the reward. The following problem explains the problem more easily. The above image shows the robot, diamond, and fire. The goal of the robot is to get the reward that is the diamond and avoid the hurdles that are fired. The robot learns by trying all the possible paths and then choosing the path which gives him the reward with the least hurdles. Each right step will give the robot a reward and each wrong step will subtract the reward of the robot. The total reward will be calculated when it reaches the final reward that is the diamond.

CHINNANGARI KAVYA

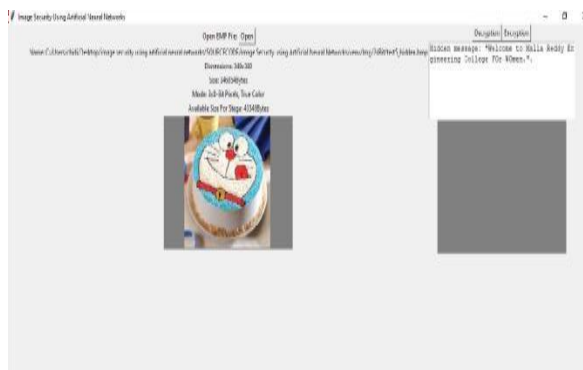
20RH1A0547



IMAGE SECURITY USING ARTIFICIAL NEURAL NETWORK

Cryptography is the method of protecting information and multimedia through the use of codes. So, that only the desired person can read and process the information. Cryptography is associated with two processes: Encryption and Decryption.

Encryption is scrambling plaintext into cipher text. Decryption is the process of retrieving the plain text back. In the recent years there has been quite a development in the field of artificial intelligence mainly the introduction of the artificial neural networks (ANN). The ANN is considered to an information processing unit which to a great extent resembles the working of the human brain. In this paper images are encrypted and decrypted using deep neural networks that are Convolution Neural Network (CNN) based chaotic algorithm. Chaotic system is highly sensitive to initial conditions. The algorithm used for image encryption is Advanced Encryption Standard AES).



To protect important information we use cryptography. Steganography is different from cryptography, where the existence of the message itself is not disguised, but the content is obscured. Steganography could be considered as the dark cousin of cryptography. Cryptography assures privacy whereas Steganography assures secrecy. For e.g. Sending of encrypted credit card details over the internet is well known to a malicious user. But, the actual content is randomized or confused and hence not revealed. But, in Steganography the fact that the credit card details is being sent is kept secretly.

K.Mounika
20RH1A05A1



BRAIN GATE TECHNOLOGY

The Brain Gate System is established on Cyber kinetics stage technology to sense, transfer, examine and put on the language of neurons. The principle of operation behind the Brain Gate System is that with intact brain function, brain signals are generated even though they are not sent to the arms, hands and legs. The signals are interpreted and translated into cursor movements, offering the user an alternate Brain Gate pathway to control a computer with thought, just as individuals who have the ability to move their hands use a mouse. The 'Brain Gate' contains tiny spikes that will extend down about one millimeter into the brain after being implanted beneath the skull, monitoring the activity from a small group of neurons. It will now be possible for a patient with spinal cord injury to create brain signals that convey the intention of moving the paralyzed limbs, as signals to an implanted sensor, which is then output as electronic impulses. These impulses assist the user to work mechanical devices with the help of a computer cursor. Matthew Nagle, a 25-year-old Massachusetts fellow with unadorned spinal cord damage, has been paralyzed from the neck down since 2001].After taking part in a clinical trial of this system, he has opened e-mail, switched TV channels, turned on lights . He even moved a robotic hand from his wheelchair. This character the first time that neural movement signals have been recorded and decoded in a human with spinal cord injury. The system is also the first to permit a human to regulate his nearby situation using his mind.

20RH1A6749
Sarala Lakshmi



AIRCRAFT GPS TRACKING

GPS aircraft tracking is a means of tracking the position of an aircraft fitted with a GPS receiver. By communication with GPS satellites, detailed real-time data on flight variables can be passed to a server on the ground. This server stores the flight data, which can then be transmitted via telecommunications networks to organizations wishing to interpret. Accurate real-time data provided by GPS aircraft tracking may be offered to air traffic control using ADS-B technology. This can safely reduce airspace separation of aircraft. GPS aircraft tracking also enables airlines to track their fleet of aircraft over the ACARS system, and allows aircraft to be more easily located in the event of an accident. The data is processed to gather "OOOI" information about movements within the airport and to compute flight time. Finally, GPS aircraft tracking permits a flight school to track a trainee pilot and debrief his/her flight path afterwards.

20RH1A0543
CH.HANUSRI



IMPORTANT WEBSITES

www.ieee.org/india

www.engineering.careers360

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