



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 ISTE, CSI & Technical Association Electro Spikes

INSPERON

HALF YEARLY TECHNICAL MAGAZINE

**DEPARTMENT OF
INFORMATION TECHNOLOGY**

IT

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www.mallareddyecw.com

DEPARTMENT VISION

To emerge as a center of excellence in the department of IT is to empower students with new wave technologies to produce technically proficient and accomplished intellectual IT professionals specifically to meet the modern challenges of the contemporary computing industry and society.

Providing the students with most conducive academic environment and making them towards serving the society with advanced technologies.

Vision



DEPARTMENT MISSION

The mission of the department of Information Technology is to afford excellence education for students, in the conventional and modern areas of information technology and build up students with high-quality principled trainings, thus manifesting their global personality development.

To impart holistic technical education using the best of infrastructure, outstanding technical and teaching expertise.

Training the students into competent and confident world class professionals with excellent technical and communication skills.

To provide quality education through innovative teaching and learning process that yields advancements in state-of-the-art information technology.

To inculcate the spirit of ethical values contributing to the welfare of the society by offering courses in the curriculum design.

Mission



ABOUT THE DEPARTMENT

The Dept. of Information Technology with an intake of 180 in B.Tech Programme The programmes ensure that the student effectively meets the highest benchmarks of competence required by the industry.

The Department has state of the art laboratories with latest software's like Windows 2008, Visual Studio 2012, Eclipse, WinRunner, QTP, J2EE, .NET, Fedora & Weka Tool.

The Dept established IEEE & ISTE student chapters and department 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.

The Department also offers Value added Certification Courses BEC, Microsoft and CISCO certification through Business English Certification in association with Cambridge University, London, U.K., Microsoft & CISCO Certification through Center for Development of Communication Skills, Microsoft Innovation Center and CISCO Networking Academy respectively. More than 85% of students are placed in MNC s like Campgemini, WIPRO, TCS, IBM, NTT Data, HCL, Tech Mahindra, etc. The Department also publishes the Registered Journal "International Journal of Research in Signal Processing, Computing and Communication-System design (IJRSCSD) with an ISSN: 2395-3187.

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 activities 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 a problem, design algorithm, identify and define the computing requirements within realistic constraints in multidisciplinary areas by understanding the core principles and concepts of Information Technology

PSO2: Knowledge of data management system like data acquisition, big data so as to enable students in solving problems using the techniques of data analytics like pattern recognition and knowledge discovery.

PSO3: Effectively integrate IT based solutions into the user environment.

PEO'S

PEO1

- Apply current industry computing practices and emerging technologies to analyze, design, implement, test and verify IT based solutions to real world problems.

PEO2

- To produce employable graduates who will be placed in various engineering positions in the computational world in firms of international repute.

PEO3

- To pursuit of advanced degrees in engineering at different levels of research and consultancy. They get exposed to several other domains resulting in lifelong learning to broaden their professional knowledge.

PEO4

- Use theoretical and practical concepts of various domains to realize new ideas and innovations, entrepreneurship, employment and higher studies.

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 IT department of MRECW are bringing out the volume-2 of the Technical magazine INSUPERON 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 interested in the educational and literary activities

Principal's Message

I congratulate the department of IT, MRECW for bringing out the first issue of the prestigious half yearly department technical Magazine INSUPERON 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

INSUPERON-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. Subba Reddy Borra

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 summing 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 summing 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. We then 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.PuttaSrivani
Professor

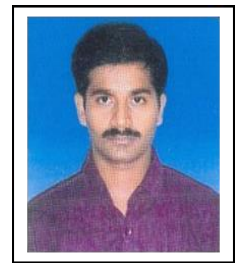


Quantum Computing : Quantum computing uses powerful computers to solve problems at the atomic and subatomic levels. Unlike classic computers, which perform calculations and store data in binary code, quantum computers use quantum bits, also known as qubits. This allows quantum computers to crunch numbers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



Dr.D.B.K.Kamesh
Professor

STUDENT ARTICLES

HYDROGEN PLANS

Carbon emissions are a huge concern when it comes to commercial flights, but there is a potential solution, and it has received a lot of funding.

A £15 million UK project has unveiled plans for a hydrogen-powered plane. This project is known as Fly Zero and is being led by the Aerospace Technology Institute in conjunction with the UK government.

The project has come up with a concept for a mid-size plane powered completely by liquid hydrogen. It would have the capacity to fly roughly 279 passengers halfway around the world without stopping. If this technology could be actualised, it could mean a zero-carbon flight with no stops between London and Western America or London to New Zealand with a single stop.

ALLURI SHABARI
(18RH1A1202)



IMAGE SEGMENTATION

Image Segmentation is a technology which can segment an image into conceptual parts but contrary to object detection, here every pixel in an image is assigned a category. Image Segmentation can be used to locate objects and their boundaries.

How it works

Usually, the algorithms employed in such tasks are based on convolution-deconvolution methods. For example, one algorithm is using CNNs to create feature maps, but at the same time, subsampling layers are introduced to keep the whole process computationally feasible. The computational burden lies in fact that the classification decision is done per pixel. For this reason, by reducing the neurons, computational efficiency can be improved. The next step though is to apply transpose convolution during which the network is trained to reconstruct the previously reduced neurons.

Business use cases

This technology is mainly used in medical imaging, GeoSensing, and precision agriculture.

KONDA YASHASHWINI
(18RH1A1227)



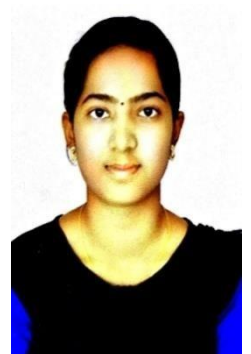
LIFI TECHNOLOGY

LiFi is a Visible Light Communication (VLC) technology that offers wireless data transmission over LED light bulbs. It was developed in 2011 by Harald Haas, a Professor at the University of Edinburgh. In this article, we will explore how Li-Fi works, its benefits and applications in everyday lives. The main difference between Wi-fi and Li-fi is that while Wi-fi transmits through radio waves, Li-fi uses visible light communication to transmit data. LiFi capability is also being discussed by several large mobile companies such as Apple. There are many industries where LiFi works with partners, including defense, healthcare, lighting, IT infrastructure, telcos, and device integrators.

We depend on wireless data in our daily lives. Unfortunately, Wi-Fi will not be available forever. In order to support this digital revolution, radio frequency spectrum is running out. Wireless connectivity is being used more and more with each passing year, and this is leading to a phenomenon called the spectrum crunch.

As data demands increase, Wi-Fi will be unable to keep up and global networks will need to be future-proofed to meet today's needs. Our capacity to utilize spectrum with LiFi is more than 1000 times that of radio frequencies. LiFi achieves higher data rates thanks to the availability of more access points, and its radio connection.

G.PRANAYA
(18RH1A1220)



NEURALINK

Neuralink is a developing high bandwidth brain-machine interfaces to connect humans and machines. It is a neurotechnology company developing BMIs and co-founded by Elon Mask and others. Neuralink was launched in 2016 and was first publicly reported in March 2017. The goal is to eventually begin implanting devices in paralyzed humans, allowing them to control phones or computers.

Neuralink tests their devices by surgically implanting them in the brains of live monkeys, pigs and other animals. a company that also works in the area of brain-computer interfaces, has expressed concern about the rejection reactions that probes can cause. The probes, composed mostly of polyimide, a biocompatible material, with a thin gold or platinum conductor, are inserted into the brain through an automated process performed by a surgical robot.

The central problem of interacting with AI is actually “bandwidth”. You can take the information much more easily than you push it out using your voice or your actions, but you’re already connected to a machine is an idea of Elon Mask . Hence, his goal is to allow humans to more quickly communicate with machines directly from their brains.

V.KEERTHI
(19RH1A12H3)



INTERNET OF BEHAVIOUR (IOB) THE CHANGE IN 2022 :

Internet of behaviour (IOB) is the extension of Internet Of Things. As IOT deals with data , information and how the devices are connect with each other . And Internet Of Behaviour also works with the same parameters, adding user behavior into the mix to understand how certain patterns and impressions can determine user experience.

The Combine impact of IOT and IOB is that many companies use IOT to persuade the changes of customer IOB is used to evaluate the Emotions, Choices , Augmentations and companionship . IOB is mashup of three disciplines : Technology, Analytical data and Psychology is the study of human behaviour.

IOB Collect the data from range of sites and technologies, including a company's website, social media profiles, sensors, telematics, beacons, health monitors , and a variety of other devices.Data is collected and analyzed for a variety of purposes. These reasons include assisting businesses in making educated business decisions, customizing marketing techinques, developing products and services, and driving user experience design, among others.

SHRAVANI JOSHI
(20RH5A1204)



DECENTRALIZED FINANCE

Cryptocurrencies have exploded into a trillion-dollar industry today, sparking a wave of worldwide financial disruption.

At the heart of cryptocurrencies is a remarkable history of innovation that goes back to the 1980s, with advancements in cryptography. Since then, a series of events have shaped crypto space; the first cryptocurrency, Bitcoin, being the most prominent. Despite its spectacular growth in the past 12 years, financial services have very slowly appeared for Bitcoin — mostly due to its inherent lack of stability and adoption. Mainstream institutions won't accept a Bitcoin loan because of its significant price volatility — it makes Bitcoin a poor asset to plan any investment accurately.



Things change quickly in the crypto space, and decentralized finance (DeFi) is a current trend — it's an exciting space to be, undoubtedly. If you're still unaware, let's dig a little deeper into DeFi and learn more about it.

Short for decentralized finance, DeFi is an umbrella term for a variety of applications and projects in the public blockchain space geared toward disrupting the traditional finance world. Inspired by blockchain technology, DeFi is referred to as financial applications built on blockchain technologies, typically using smart contracts. Smart contracts are automated enforceable agreements that do not need intermediaries to execute and can be accessed by anyone with an internet connection.

K. SREEJA
(20RH1A1286)



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, whereas virtual 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.

K. HARIKA
(20RH1A1287)



INVISIBLE TECHNOLOGY

Invisible technology is defined as the state of object that cannot be seen., Invisibility is often consider be the supreme form of camouflage.

A way to think about invisible technologies is that they are the set of infrastructure, tools and tech that have become indistinguishable from your daily life. So ingrained with our day-to-day that we don't even reflect that we're using them. Electricity and the internet are two examples. Given the definition above, even Google Search would qualify as an invisible technology. Once something works well enough, we tend to forget it exists. Until it doesn't work, that is.

The rise of invisible technology is linked to the phenomenon of tech burnout and information overload.As the industry develops better sensor technology, and smarter software via AI—and as the IoT's expansion increases the number of internet-connected smart devices in our lives by an order of magnitude or two—the need to protect the user from mental burnout from technology will be one key to succeeding with any product in the future.

NIVEDITA
(20RH1A1298)



ARTIFICIAL INTELLIGENCE COMMUNICATING SECURITY

Artificial Intelligence is the advancement of computer systems capable of accomplishing tasks that require intelligence. These tasks include decision-making, speech and emotion-recognition and visual perception etc.

Artificial intelligence has been continuously gaining influence in different sectors, even in business, by innovation to learn specific tasks with minimal command or input.

Changes in communication:

Development in communication technology and the integration of AI into systems of communication has led to leaps of improvements in speech recognition and translation. Access to data and powerful computing capacity is available for your communication needs. Apps equipped with powerful microchips can “hear” and translate words of a different dialect or language while in a conversation.



Changes in security:

Cyber security is a big concern nowadays. AI-enabled software assists in identifying vulnerabilities in a network effectively adjust to combat attacks, and provide solutions to counter with proper defense strategies. The role of AI in cyber security is also extensive to secure the systems.

M.PRIYANKA
(20RH1A12A4)



SMART SENSORS

The introduction of handheld computers, the present trend has started preferring small computers to do computation. This has made computer manufacturers to go for almost gadget like computers. Reducing the size of handheld computers can only be taken so far before they become unusable. Keyboards become so tiny you require needle-like fingers to operate them and screens that need constant curs or control stored simple text.

The introduction of SmartQuill has solved some of these problems. Lyndsay Williams of Microsoft, UK is the inventor of SmartQuill, a pen that can remember the words that is used to write, and then transform them into computer text. The pen is slightly larger than ordinary fountain pen, with a screen on the barrel. User can enter information into these applications by pushing a button. Information can be entered using his/her own handwriting. User can use any platform for writing like paper, screen, tablet or even air. There is also a small three-line screen to read the information stored in the pen. Users can scroll down the screen by tilting the pen. The pen is then plugged in to an electronic docking station, text data is transmitted to a desktop computer, printer, modem or to mobile telephones to send files electronically.

M. JASWITHA
(20RH1A12B3)



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.

N.SOWJANYA
(20RH1A12C0)



BLUE BRAIN

Blue brain is the name the world's first virtual brain. That means a machine can function as human brain. Today scientists are in research to create an artificial brain that can think, response, take decision, and keep anything in memory. The main aim is to upload human brain into machine.



The Blue Brain Project is an attempt to reverse engineer the human brain and recreate it at the cellular level inside a computer simulation.

Goals of the project are to gain a complete understanding of the brain and to enable better and faster development of brain disease treatments. The research involves studying slices of living brain tissue using microscopes and patch clamp electrodes. Data is collected about all the many different

N. SANKEERTHANA
(20RH1A12C8)



VR/AR FOR LIVE SHOPPING

Live Shopping has successfully been able to combine the accelerated transformations of VR/AR and help a range of industries (such as fashion, gaming, etc.) fulfill the ambitions of their customers online. Crossing all boundaries, customers can now watch online:

The products and services, try them in addition to know their specifications and end up purchasing them at best, affordable prices. Besides, making automated payments, in a hassle-free way to purchase products of a particular brand is supported with high-end security protocols in combination with responsive and immediate human-like interactions.

Meditating if VR/AR can potentially leverage amazing transformations in the future of the e-commerce industry? Trustworthily, it will for sure bring value to industries for the long-term by overlapping the demerits of traditional e-commerce tactics thereby boosting up user engagement and also, profit margins.

RAVULARUCHITHA
(20RH1A12F0)



CLOUD COMPUTING: THE THIRD WAVE OF DIGITAL REVOLUTION

As a metaphor for the Internet, ‘the cloud’ is a familiar cliché, but when combined with ‘computing,’ the meaning gets bigger and fuzzier. Cloud computing encompasses any subscription-based or pay-per-use service that, in real time over the Internet, extends IT’s existing capabilities. In a cloud computing system, there’s a significant workload shift. Local computers no longer have to do all the heavy lifting when it comes to running applications. The network of computers that make up the cloud handles them instead. Hardware and software demands on the user’s side decrease.

The only thing the user’s computer needs to be able to run is the cloud computing system’s interface software, which can be as simple as a Web browser, and the cloud’s network takes care of the rest.

A fundamental concept behind cloud computing is that the location of the service, and many of the details such as the hardware or operating system on which it is running, are largely irrelevant to the user. It’s with this in mind that the metaphor of the cloud was borrowed from old telecoms network schematics, in which the public telephone network (and later the internet) was often represented as a cloud to denote that the just didn’t matter -- it was just a cloud of stuff. This is an oversimplification of course; for many customers location of their services and data remains a key issue.

S. VAISHNAVI
(20RH1A12F2)



WEB 3.0

Web 3.0 is the upcoming third generation of the internet where websites and apps will be able to process information in a smart human like way through technologies like Machine Learning. It is the semantic web aimed at being a more autonomous, intelligent and open internet.

It will operate through decentralized protocols -the founding of blockchain and cryptocurrency technology. Web 3.0 makes internet accessible everyone everywhere, at any time. At some point internet connected devices will no longer be concentrated on computer and smartphones.

SHREYA REDDY PATIL
(20RH1A12F8)



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.

S. SRIVALLI
(20RH1A12F9)



CHILD ACTIVITY DETECTION SYSTEM

The automatic recognition of child activity using multi-sensor data enables various applications such as child-development monitoring, energy-expenditure estimation, child-obesity prevention, child safety in and around the home, etc. We formulate the activity recognition task as a classification problem based on multiple sensors embedded in a wearable device.



The approach we propose in this paper is to apply spectral analysis techniques of multiple sensor data for activity recognition. Quadratic Discriminant Analysis (QDA) classifier is then trained using manually annotated data and applied for activity recognition. The obtained experimental results for the recognition of 7 activities based on a limited data set are promising and show the potential of the proposed method

T. SHIVANI
(20RH1A12G2)



THE BRAIN'S SECRET TO LIFE-LONG LEARNING CAN NOW COME AS HARDWARE FOR ARTIFICIAL INTELLIGENCE

The hardware is a small, rectangular device made of a material called perovskite nickelate, which is very sensitive to hydrogen. Applying electrical pulses at different voltages allows the device to shuffle a concentration of hydrogen ions in a matter of nanoseconds, creating states that the researchers found could be mapped out to corresponding functions in the brain.

When the device has more hydrogen near its centre, for example, it can act as a neuron, a single nerve cell. With less hydrogen at that location, the device serves as a synapse, a connection between neurons, which is what the brain uses to store memory in complex neural circuits.

Through simulations of the experimental data, the Purdue team's collaborators at Santa Clara University and Portland State University showed that the internal physics of this device creates a dynamic structure for an artificial neural network that is able to more efficiently recognize electrocardiogram patterns and digits compared to static networks. This neural network uses "reservoir computing," which explains how different parts of a brain communicate and transfer information.

T. KAVYA
(20RH1A12G4)



IMPORTANT WEBSITES

www.ieee.org/india

www.engineering.careers360

www.technologyreview.com

www.mathworks.in/products/matlab/

www.microwaves101.com/

www.ece.utoronto.ca/student-life-links

<https://www.ece.org/>

Science Commons.org

[MathGV.com:](http://MathGV.com)

<http://www.engineeringchallenges.org/>

<http://engineering.stanford.edu/announcement/stanford-announces-16-online-courses-fall-quart>

<http://www.tryengineering.org/>

<http://www.engineergirl.org/>

<http://www.discoverengineering.org/>

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

<http://efymag.com>

<http://efymagonline.com/>

<http://electronicsforu.com>

www.dspguide.com

www.howstuffworks.com

<http://nptel.iitm.ac.in>

<http://www.opencircuitdesign.com/>

<http://www.futuresinengineering.com/>

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