



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
Maisammaguda, Dhulapally, Secunderabad – 500 010, Telangana

A.Y : 2019-20 VOL.1

Under
Student Chapter ISTE, CSI & Technical Association Electro Spikes

INSPERON

HALF YEARLY TECHNICAL MAGAZINE

**DEPARTMENT OF
INFORMATION TECHNOLOGY**

IT

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 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 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-1 of the Technical magazine INSUPERON in A.Y 2019-20. 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: 2019-20, 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. Madhatee Latha

Principal

HOD'S MESSAGE

It is an occasion of immense pleasure for the department of IT, MRECW to bring out the volume-1 of the technical magazine-INSUPERON. It gives me great satisfaction to note that the response to the magazine has been overwhelming. The wide spectrum of articles gives us a sense of pride that our students and faculties possess creative potential and original thinking in ample measures. Each article is entertaining, interesting and absorbing. I applaud the contributions for their stimulated thoughts and varied hues in articles contributed by them



**Dr. Indumathi Krishnan
Lakshmi**

HOD

FACULTY ARTICLES

WIRELESS USB

Wireless USB was a short-range, high-bandwidth wireless radio communication protocol created by the Wireless USB Promoter Group which intended to increase the availability of general USB-based technologies. It is unrelated to Wi-Fi

In February 2004: The Wireless USB Promoter Group was formed to develop the technical standards for wireless universal serial buses. In May 2005: The Wireless USB Promoter Group unveiled the complete wireless USB technology standard.

Up to 127 wireless devices can be connected to the host. W-USB can be used as either a W-USB device or a host. In order to connect to a common wired USB device, the W-USB specification defines a device line adapter. In addition, the W-USB device has a fully compatible USB interface.

In order to allow common wired USB devices to be connected, the specification defines *device wire adapters*. Likewise, hosts connect to W-USB systems through use of a host wire adapter.



G.NAVYATHA
ASSISTANT PROFESSOR



Snowflake, the cloud-based data warehousing company, has gained a ton of traction over the last several years. The firm recently announced its goal of an eventual IPO, and has raised a tremendous amount of funding up to this point. Snowflake any offers a cloud data platform that provides its users with secure and easy access to data with near infinite scalability.” The product’s main competitive advantage

is less scale and concurrency limitations when compared to competing solutions, due to its unique architecture. The Snowflake database runs on a SQL database engine “with a unique architecture designed for the cloud”, instead of relying on big data platforms like Hadoop. Because the solution is a SAAS, there is no hardware required, and maintenance is handled entirely by the company. This is a very powerful value proposition for companies and users who don’t want the hassle of tuning and maintaining their data warehouse. A solution that’s entirely cloud-based certainly has its perks. Snowflake also has a “Data Exchange”, which allows customers to share and exchange data sets with employees, partners, stakeholders, and so on.



D.SRIVALLI
ASSISTANT PROFERSSOR

STUDENT ARTICLES

VIRTUAL REALITY IN THE CLASSROOM

Virtual Reality, or VR, is the use of computer technology to create a simulated environment which can be explored in 360 degrees. Unlike traditional interfaces, VR places the user inside the virtual environment to give an immersive experience. To allow this feeling of presence, a VR headset is used, such as the ones available for borrow at OISE Library. Other notable examples of VR headsets include Oculus Rift, Samsung Gear VR, HTC Vive, Google Daydream View or Google Cardboard. These headsets remove vision of the real world and provide video to each eye allowing for depth of vision. This technology is then supported by head and body tracking to connect the virtual world to what the user is seeing.

Virtual reality is an emerging technology in classrooms to supplement the teaching of a subject or topic to in order to 'feel' the content. Beyond engagement, VR allows students to explore, experience, and become immersed in virtual environments. There are two ways virtual reality can be used in the classroom: a student explores a virtual environment using a computer, keyboard, and mouse; or a student explores using some input device, e.g. controller, virtual reality headset

A.SAMHITHA
(18RH1A1201)



3D PRINTING

Digital fabrication technology, also referred to as 3D printing or additive manufacturing, creates physical objects from a geometrical representation by successive addition of materials. 3D printing technology is a fast-emerging technology. This paper presents the overview of the types of 3D printing technologies, the application of 3D printing technology and lastly, the materials used for 3D printing technology in the manufacturing industry.

A virtual design of the object is created. CAD (Computer Aided Design) uses a 3D modeling program or 3D scanner for virtual design. The software slices the final model into hundreds or thousands of horizontal layers. The printer creates the object layer by layer, resulting in one three dimensional object. This lets small design and engineering firms extend their reach by testing out more ideas, It helps in creating amazingly realistic prototypes with the look and feel of a real product. Example: Lamborghini, while developing its new flagship model Aventador has made extensive use of 3D printing technology to build a functional prototype of the car. Quick, low-volume tooling and custom fixtures give manufacturers the flexibility to embrace more opportunities, End-User Parts, Fashion & Retail, Medical: Artificial Arms for Disabled, Secrets of the Heart, Medical Equipment, Bioprinting Tissues and organs.

B.PARVATHI DEVI
(18RH1A1204)



MEDICAL METAVERSE

It is feasible to implement the three basic functions of the MIoT, namely, comprehensive perception, reliable transmission, and intelligent processing, by applying a metaverse platform, which is composed of AR and VR glasses and the MIoT system, and integrated with the technologies of holographic construction, holographic emulation, virtuality- reality integration, and virtuality-reality interconnection. In other words, through interactions between virtual and real cloud experts and terminal doctors, we will be able to carry out medical education, science popularization, consultation, graded diagnosis and treatment, clinical research, and even comprehensive healthcare in the metaverse. The interaction between virtual and real cloud experts and terminal users (including terminal doctors, patients, and even their family members) could also facilitate different medical services, such as disease prevention, healthcare, physical examination, diagnosis and treatment of diseases, rehabilitation, management of chronic diseases, in-home care, first aid, outpatient attendance, consultation, etc. In addition, it is noteworthy that security is a prerequisite for the Metaverse in Medicine, and a reliable security system is the foundation to ensure the normal operation of such a platform

ANDE MOUNIKA SAI
(18RH1A1203)



BLUE EYES TECHNOLOGY

The basic idea behind this technology is to give the computer human power. We all have some perceptual abilities. That is, we can understand each other's feelings. For example we can understand one's emotional state by analyzing his facial expression. If we add these perceptual abilities of humans to computers, they would enable computers to work together with human beings as intimate partners. The "BLUE EYES" technology aims at creating computational machines that have perceptual and sensory ability like those of human beings. This paper discusses the concept of blue eyes technology

The BLUE EYES technology aims at creating computational machines that have perceptual and sensory ability like those of human beings. It uses a non-obtrusive sensing method, employing most modern video cameras and microphones to identify the user's actions through the use of imparted sensory abilities. The machine can understand what a user wants, where he is looking at, and even realize his physical or emotional states. It has the ability to gather information about you and interact with you through special techniques like facial recognition, speech recognition, etc.

B.PARVATHIDEVI
(18RH1A1204)



IMAGE TAGGING

Image tagging is the technology based on CNNs which enables a computer to assign a category to an image. Image tagging can be used with unstructured datasets to actually structure them. We provide input data in the form of batches of images into the first convolutional layer. A convolutional layer performs cross-correlation to find neurons (features) which are more important in identifying the category, an image belongs to. A pooling (subsampling) layer reduces the number of neurons produced in the previous convolutional layer, to avoid memorization and biases. This helps to make a model more robust, so it performs accurate on unseen data. Depending on the CNNs architecture, we might need to repeat two previous processes multiple times. Finally, we have a fully connected layer. It connects every neuron to every other neuron to produce predictions. The output then is the probability for an image to belong to every category in our dataset.

BOGA SATHWIKA
(18RH1A1206)



MEDICAL METAVERSE

It is feasible to implement the three basic functions of the MIIoT, namely, comprehensive perception, reliable transmission, and intelligent processing, by applying a metaverse platform, which is composed of AR and VR glasses and the MIIoT system, and integrated with the technologies of holographic construction, holographic emulation, virtuality- reality integration, and virtuality-reality interconnection. In other words, through interactions between virtual and real cloud experts and terminal doctors, we will be able to carry out medical education, science popularization, consultation, graded diagnosis and treatment, clinical research, and even comprehensive healthcare in the metaverse. The interaction between virtual and real cloud experts and terminal users (including terminal doctors, patients, and even their family members) could also facilitate different medical services, such as disease prevention, healthcare, physical examination, diagnosis and treatment of diseases, rehabilitation, management of chronic diseases, in-home care, first aid, outpatient attendance, consultation, etc. In addition, it is noteworthy that security is a prerequisite for the Metaverse in Medicine, and a reliable security system is the foundation to ensure the normal operation of such a platform.

CHERUKUTHOTASAIPREETHIKA
(18RH1A1208)



FACE MASK PROTOTYPE CAN DETECT COVID-19 INFECTION

Face mask that can diagnose the wearer with Covid-19 within about 90 minutes. The masks are embedded with tiny, disposable sensors that can be fitted into other face masks and could also be adapted to detect other viruses. The sensors are based on Freeze-dried cellular machinery that the research team has previously developed for use in paper diagnostics for viruses

The face mask sensors are designed so that they can be activated by the wearer when they're ready to perform the test, and the results are only displayed on the inside of the mask, for user privacy. The new wearable sensors and diagnostic face mask are based on technology that Collins began developing several years ago. These cell-free circuit components are freeze-dried and remain stable for many months, until they are rehydrated., which can be any RNA or DNA sequence, as well as other types of molecules, and produce a signal such as a change in colour.

DAPPUMANASA
(18RH1A1211)



CYBORGS

A being that is part human and part machine. The term was coined in 1960 by Manfred Clynes and Nathan Kline in an article they wrote about how humans can survive in space. For centuries, various cultures have fantasized about half human-half artificial beings; however, in the 20th century this concept materialized in the form of artificial limbs, pacemakers and other bionic devices.

A cybernetic organism, or cyborg, is the melding of man and machine and ranges in scope from creating computers that have human attributes, such as independent thinking or the ability to learn, to the artificial heart, pacemaker, and a variety of synthetic implants. Cyborg advocates hypothesize that in the future mankind will use science and technology to transform into a virtually immortal being. Still human, but with machine parts that perfect natural organs, muscle fiber, and bone.

In modern society, cyborgs have taken on a new meaning, particularly as computers have become more powerful and ubiquitous. While religious and ethical questions about cyborgs remain, people no longer fear machines that outthink, outperform, and are physically more powerful than humans. Science fiction, movies, and television shows portraying the cyborg-driven future have not only dispelled fear, but actually set expectations for further advances in providing computers with human attributes and vice versa for the betterment of both.

Since machines, such as pacemakers and kidney dialysis units, keep people alive, many argue that the world is already a cyborg community. Given the pace of technological development, there is little doubt that the human/cyborg melding will proceed.

DESAI GOWRINIKHITHA
(18RH1A1213)



VIRTUAL REALITY AND AUGMENTED REALITY

The next exceptional technology trend – Virtual Reality (VR) and Augmented Reality (AR). VR immerses the user in an environment while AR enhances their environment. Although this technology trend has primarily been used for gaming thus far, it has also been used for training, as with VirtualShip, a simulation software used to train U.S. Navy, Army and Coast Guard ship captains.

We can expect these forms of technologies being further integrated into our lives. Usually working in tandem with some of the other emerging technologies we've mentioned in this list, AR and VR have enormous potential in training, entertainment, education, marketing and even rehabilitation after an injury. Either could be used to train doctors to do surgery, offer museum goers a deeper experience, enhance theme parks, or even enhance marketing.

DHARURSAHITHI
(18RH1A1214)



ROBOTIC PROCESS AUTOMATION

Robotic Process Automation, or RPA, is another technology that is automating jobs. RPA is the use of software to automate business processes such as interpreting applications, processing transactions, dealing with data, and even replying to emails. RPA automates repetitive tasks that people used to do.

Although Forrester Research estimates RPA automation will threaten the livelihood of 230 million or more knowledge workers or approximately 9 percent of the global workforce, RPA is also creating new jobs while altering existing jobs. McKinsey finds that less than 5 percent of occupations can be totally automated, but about 60 percent can be partially automated.

G.MOUNI
(18RH1A1217)



DevSecOps

A simple DevSecOps definition, it is short for development, security and operations. Its mantra is to make everyone accountable for security with the objective of implementing security decisions and actions at the same scale and speed as development and operations decisions and actions.

Every organization with a DevOps framework should be looking to shift towards a DevSecOps mindset and bringing individuals of all abilities and across all technology disciplines to a higher level of proficiency in security. From testing for potential security exploits to building business-driven security services, a DevSecOps framework that uses DevSecOps tools ensures security is built into applications rather than being bolted on haphazardly afterwards.

By ensuring that security is present during every stage of the software delivery lifecycle, we experience continuous integration where the cost of compliance is reduced and software is delivered and released faster.

ETTAMMEGHANA
(18RH1A1218)



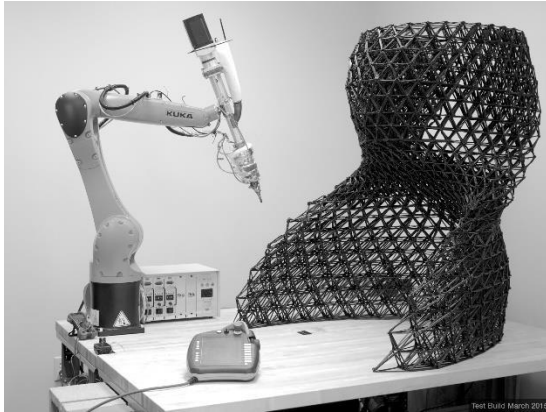
IMAGE CAPTIONING

Image Captioning can be used when we are interested in representing the image content in words. Image Captioning can be conceived in the encoder-decoder framework. First, image embeddings are extracted by using pre-trained CNNs (encoding step), and further, the embeddings are used as input to Long Short Term Memory (LSTM, a type of neural network which can process sequences of data and therefore is used for text datasets) networks which learn to decode the embeddings into text. An image is inserted into CNNs to extract feature maps which are abstract representations of the image. LSTM then uses these feature maps to produce the distribution of words given the input. LSTM samples then the next word from the distribution and the process repeats itself until the caption is ready. It is important to stress at this point that these different feature maps provide us the points of interest in the image (i.e., attention).

K.ROHINI
(18RH1A1221)



DIGITAL FABRICATION



When you think about digital fabrication, the first thing that springs to mind is 3D printing. But it's so much more than that. It could revolutionize the whole construction industry.

Digital fabrication is a type of manufacturing process where the machine used is controlled by a computer. The fundamental point of digital fabrication is turning data into objects. "It's bringing programmability to the physical world". There are a vast range of digital fabrication techniques, but the important aspect that unifies them is that the machines can reliably be programmed to

make consistent products from digital designs.

This means that the designs can be downloaded and made, reliably and repeatedly, all over the world, without a maker needing to have specialist equipment. Digital fabrication encourages creativity and customization.

A.SNEHASREE
(19RH1A1202)



INTERNET OF THINGS

IOT, Is an internet of things from the name itself. we can describe that the things which has IP address are connect through internet like buildings and other items embedded with software, sensors and electrons.

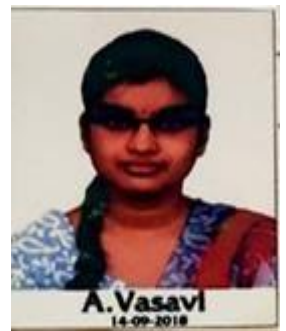
This network connectivity enables the objects to collect and exchange the data.

The main impact of IOT, anything that can be connected will be connected

Example:

What if your alarm clock wakes up you at 6am and then notifies your coffeemaker to start brewing coffee for you

The best application of IOT is Smart Hom“Smart home makes life smarter”.



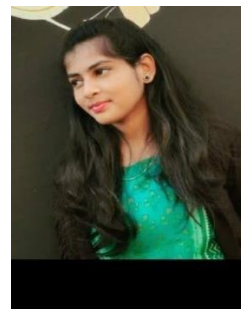
VASAVI (19RH1A1206)

BLUE BRAIN TECHNOLOGY

Artificial Brain is a software or hardware which is similar to functioning of biological human brain in terms of Memory, Feelings, Emotions, and decision making. This can be done using reverse engineering techniques on human brain so functioning of brain can be understood. The structure of human brain is still complex to understand by scientists.

Main objective behind Artificial brain is to establish a connection in between human brain and artificial brain so that machine can work like a human brain and important content of human like knowledge, feelings, memories of a person be downloaded to artificial brain by applying high computational algorithms using supercomputers with large storage facilities which can be used forever for different purposes until erased. Life span of every human being is limited, if a person dies knowledge and intelligence will be void. Before death of human beings, all contents of brain can be extracted using an Artificial brain and can be used forever. The artificial brain can also be used in research of treatment for diseases like Alzheimer's and Parkinson's disease

Main aim of the blue brain project is to extract information from human brain and store it virtually on computer. So that even after death of humans, knowledge can be preserved for years in the form of a virtual brain.



PRIYANKA(19RHA1207)

ALEXA DEVELOPMENT

Alexa is well on its way to pervading all aspects of life -- the AI assistant will follow you through your smart home to your car, into the office, and during your afternoon jog. Even so, Amazon says that building a completely ambient voice assistant is a long-term project that requires contributions from a large ecosystem of developers.

"We believe that through the work of our developers and device makers, we're building something that fundamentally changes the way people interact with technology," Nedim Fresko, Amazon's VP

of Alexa Devices and Developer Technologies, said to ZDNet.

A.LAKSHMIRISHIKA
(19RH1A1209)



DRONES

A drone is a flying robot that can be remotely controlled with sensors and gps. Drones can be used in deserted areas, in military, and many other places. It is easy to find people in open areas to find people when they lost the way and it can be maintained long time charge in a way it doesn't destroy.

Drones even used for events and decoration purposes. These drones can fly at high to check the places and it is helpful to monitor the weather. Drones are used for agriculture, biological monitoring, and sports coverage.

These are not allowed to fly near airports and aircraft.

In the agriculture sector, today farmers in different countries of the world are monitoring crops and spraying medicines through drones. Thus, it can be said that the use of drones is also being revolutionized in the field of agriculture.

Drone Technology is typically used in situations where manned flight is considered too risky or difficult. A typical unmanned aircraft is made of a lightweight composite material to reduce weight and increase its maneuverability. The strength of this composite material allows military drones to cruise at extreme altitudes and thus proves to be very beneficial in the defense system of the country.

B.AKHILA
(19RH1A1221)



EXASCALE COMPUTING

What is Exascale Computing?

The fastest supercomputers in the world today solve problems at the petascale, or 1 quadrillion (10^{15}) operations each second. While these petascale systems are quite powerful, the next milestone in computing achievement, exascale, will be transformative because of the degree of problem-solving capability it will enable—and the benefits in our everyday lives will be far-reaching.

Exascale computing can help humanity simulate and analyze the world in ways that will help solve our most pressing and complex challenges. It can profoundly change how we live and work, such as improving weather forecasting, healthcare, and drug development, and has important applications in areas of physics, genomics, sub-atomic structures and AI. Arm Neoverse is leading a revolution in high-performance computing (HPC), delivering technologies that power the world's fastest supercomputer and enabling HPC in the cloud.

B.ANITHA
(19RH1A1223)



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](http://ScienceCommons.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/>

INSPERON



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