GITAM
DEEMED TO BE UNIVERSITY

WIRELINE

Connecting EECE

HALF-YEARLY TECHNICAL E-MAGAZINE

DEPARTMENT OF ELECTRICAL, ELECTRONICS AND COMMUNICATION ENGINEERING

**GITAM SCHOOL OF TECHNOLOGY
GITAM (DEEMED TO BE UNIVERSITY)
HYDERABAD**

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About the Department

Department Vision:

GITAM will be an exceptional knowledge-driven institution advancing a culture of honesty and compassion to make a difference in the world

Department Mission:

1. Empower the students with knowledge to face real-world challenges for holistic development.

2. Conduct multidisciplinary research that impacts society, addressing key challenges through innovative solutions.

3. Foster a culture emphasizing empathy, respect, and commitment, upholding ethical standards.

About the Department:

The **Department of Electronics and Communication Engineering (ECE)** was established in the academic Year **2009** and has since grown into a distinguished hub for education and research. The Department offers a comprehensive range of academic programs, including **B. Tech, M. Tech, and Ph.D.**, catering to students aspiring for excellence in electronics and communication engineering.

The Department boasts **40 highly qualified faculty members**. Their expertise and dedication are instrumental in fostering a culture of innovation and academic rigor. The Department's emphasis on **research and development** is one of its core strengths, with a sharp focus on cutting-edge areas such as **VLSI Design, Embedded Systems, Power Systems, Power Electronics, Control Systems, Wireless Communications, Internet of Things (IoT), Artificial Intelligence (AI), and Machine Learning (ML)**.

The faculty members are actively engaged in high-impact research and have collectively published more than **500 research papers** in reputed journals and conferences, contributing significantly to the advancement of technology. This research output enhances the Department's reputation and creates opportunities for collaborative projects with industry and academia.

About the Magazine

"**WIRELINE**- *Connecting EECE*" is the E-Magazine of the Department of Electrical, Electronics, and Communication Engineering at the School of Technology, GITAM University, Hyderabad Campus. It provides a great opportunity for the students and Faculty of the Department to share their knowledge, literature, talents, achievements, motivations, and news related to technology on one common platform.

This magazine is an important means for students to express their inner feelings. It also helps them in developing positive & desirable qualities. This magazine contains ten segments: **Technical Events, Workshops, Guest Lectures, Seminars, Faculty Development Programmes, Achievements, Delegates Visiting, Cultural/Sports, Industrial Visits, and Placements.**

This magazine can't cover everything. It's selective and shows our view of the Department of EECE at GITAM University Hyderabad Campus. If we've made any mistakes or left anything out, we apologize. We have acted in good faith at all times. We hope that you enjoy the reading.

-**Editorial Committee**

Pro-Vice Chancellor's Message

Prof. D. Sambasiva Rao, Ph.D.
Pro Vice-Chancellor,
GITAM University, Hyderabad Campus

Dear Readers,

The Department of Electrical, Electronics, and Communication Engineering's Technical E-Magazine "WIRELINE" initiative is commendable. This effort underscores the Department's dedication to fostering technical expertise and skill development among students, equipping them to meet the evolving demands of industry and academia.

This E-Magazine offers a platform for students to share innovative ideas and collaborate on projects beyond conventional classroom learning. It promotes creativity, technical proficiency, and critical thinking while preparing students for the challenges of a rapidly advancing technological world.

Congratulations to the Department for this forward-looking initiative and to the editorial team and faculty members for their exceptional efforts in bringing this vision to reality. Their meticulous planning ensures the E-Magazine will serve as a dynamic forum for intellectual exchange and professional growth, encouraging students to articulate complex technical ideas effectively.

This venture promises to be a hallmark of the Department's achievements, inspiring further innovation and excellence. I wish the Department every success in this endeavor. I am confident it will continue to motivate students and Faculty to excel and contribute meaningfully to the advancement of their field.

Director's Message

Prof. Rama Sastry Vedala

Director – GITAM School of Technology, Hyderabad &
Dean – Core Engineering, GITAM

Dear Readers,

My heartfelt congratulations to the Department of Electrical, Electronics, and Communication Engineering for releasing the inaugural issue of the Technical E-Magazine "WIRELINE." This initiative provides a dynamic platform for students and Faculty to collaborate, share ideas, and showcase their talents for holistic development.

In today's world, education transcends the acquisition of knowledge, encompassing skill development, character building, and enhancing the employability of students. With the strong GITAM culture as our foundation, we can achieve these educational objectives and contribute to building a new Aatmanirbhar Bharat.

The rapidly changing global landscape compels educators to reflect and adapt our educational system to meet evolving challenges. I am confident that this e-magazine will be a significant milestone in fostering creativity, innovation, and intellectual growth among students and Faculty. I am sure each issue will mark our progress, ignite imaginations, and bring aspirations to life.

I commend the editorial team for their dedication and hard work in realizing this vision. I wish all Faculty and students involved in this endeavor success and a promising future.

CONTENTS

TECHNICAL EVENTS

G-Electra's 2nd Anniversary and Project Expo

On October 8, 2024, G-Electra (smart systems club) celebrated its second anniversary with a Project Expo, marking a significant milestone for the club. The event allowed members to showcase their innovation and technical expertise in Artificial Intelligence (AI), Robotics, Internet of Things (IoT), and Smart Systems. With enthusiastic participation from students and support from volunteers, the event emphasized G-Electra's spirit of collaboration and commitment to advancing technology for real-world applications. The expo highlighted cutting-edge projects, bringing together students, Faculty, and industry experts to foster creativity and knowledge exchange. The event was a great success, with high participant engagement and contributions from dedicated volunteers who ensured everything ran smoothly.

Event Highlights:

● **Project Expo:**

The expo featured various AI, Robotics, IoT, and Smart Systems projects. These projects, developed by G-Electra members, aimed to address key societal challenges using advanced technology and engineering solutions.

● **Judges Panel:**

The projects were evaluated by an esteemed panel of judges:

- Dr. Pritee Parwekar
- Dr. S. Aparna
- M. Ragupathy
- Shaik Jhani Bhasha

Participant Engagement:

The expo witnessed enthusiastic engagement from participants across various departments and levels of expertise. Each team actively demonstrated their projects, engaging with attendees, explaining their processes, and answering questions about their technology and applications. This interactive engagement helped foster a deeper understanding of the work behind each project and facilitated meaningful discussions between participants and attendees.
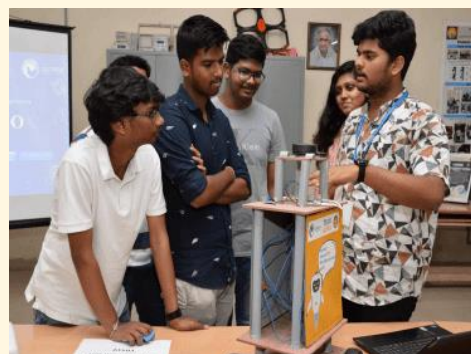
Awards and Recognition:

The event concluded with an awards ceremony recognizing the most outstanding projects:

● First Prize:

Code Traid (BRAIN TUMOR PREDICTION) – For their innovative approach and technical excellence.

● Second Prize:

Tech Tinkers (FREE FLIGHT DRIVING WING) – Recognized for their creativity and problem-solving skills.

● Third Prize:

Electra Enigma (WASTE MANAGEMENT SYSTEM) – Commended for their impressive execution and project design.

Workshop

"Arduino Atelier 2: Empowering Innovation Through Hands-On Learning"

The G-Electra Smart Systems Club, in collaboration with the Department of Electrical, Electronics, and Communication Engineering, successfully organized the "Arduino Atelier 2" workshop. This event was designed to provide students with practical, hands-on experience in Arduino programming, allowing them to explore and understand the vast capabilities of Arduino technology. The workshop was met with enthusiastic participation, making it a resounding success.


Workshop Details

The workshop offered participants an in-depth introduction to Arduino, covering basic concepts and advancing to more complex programming and project implementation. It was designed to cater to beginners and those with prior Arduino experience.

The session began with an introduction to the basic components of Arduino, including hardware and software environments. Esteemed faculty member Mr. M. Naresh Kumar led the session, explaining the fundamentals of Arduino and guiding students through writing and installing simple programs.

Participants were then introduced to interfacing Arduino with various sensors and electronic components. The hands-on experience allowed them to build and test basic circuits, fostering a deep understanding of how Arduino interacts with different components.

As part of the workshop, participants implemented a range of projects, each designed to enhance their understanding of Arduino applications:

Clap Switch: Participants engaged with this hands-free control project, where they learned how to use a microphone module to detect the sharp sound of a clap and control electrical appliances. The system was designed to process audio input through the microphone sensor, which, upon detecting a clap, sends a signal to the Arduino. The Arduino then sends a signal, allowing the LED to turn on or off. This practical project highlighted the basics of sound detection, debounce techniques, and the convenience of hands-free operation, making it ideal for smart home applications.
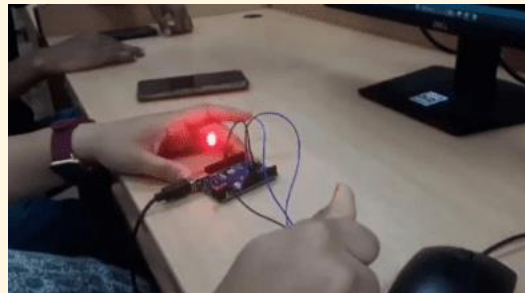
Mini Weather Station: Participants built a compact weather monitoring system using an Arduino Uno, a DHT11 sensor, and an LCD to show real-time temperature and humidity readings. This project taught them how to collect and display environmental data, making it suitable for small-scale weather monitoring.
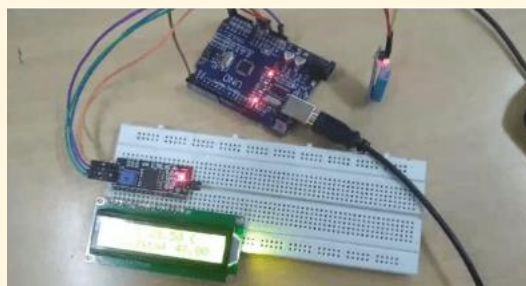

Smart Agriculture: This project focused on modern agricultural practices, using an Arduino-based soil moisture monitoring system to measure the water content in the soil. Participants used a soil moisture sensor connected to the Arduino, which provided real-time feedback on soil moisture levels through serial communication. The system helps determine when the soil requires watering, making it a valuable tool for efficient water management in farming. This project highlighted the potential of Arduino in precision agriculture, helping to optimize resource usage and improve crop yields.

Music Activated Lights: This project focused on creating a system that utilizes a microphone sensor to detect audio signals, allowing the Arduino to synchronize LED patterns with music. The sensor captures the intensity and rhythm of sound, which the Arduino then processes to control the LEDs, creating a dynamic and visually engaging light display. As the music plays, the LEDs respond by flashing or changing colors in time with the beats, enhancing the auditory experience with a captivating visual element.

Automatic Night Light: This project introduced participants to ambient light sensing using a Light Dependent Resistor (LDR) and Arduino. The automatic night light system uses the LDR to monitor the surrounding light levels continuously. When the ambient light drops below a predefined threshold, the Arduino automatically activates an LED, providing illumination during low-light conditions. This project emphasized energy efficiency and automation, demonstrating how Arduino can be used for practical, real-world applications like home lighting systems.
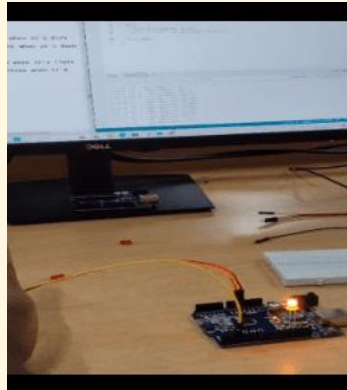
Participant Engagement

The workshop was well-attended by students from various departments, all eager to learn and apply new skills. The participants enthusiastically participated throughout the sessions, engaging with the material and asking insightful questions. Their curiosity and willingness to experiment were evident as they worked on their projects, often exploring more advanced functionalities of Arduino.1

Student Team

"Robotics 1.0: Igniting Innovation Through Hands-On Learning"

G-Electra (Smart Systems) Club of GITAM (Deemed to be) University, Hyderabad, successfully hosted Robotics 1.0 in collaboration with the Department of EECE and association with the Indian Institute of Technology Bombay (IITB). It was an engaging and educational event aimed at inspiring students and enthusiasts to explore the exciting world of robotics. The event served as a platform for participants to learn from experts, gain insights into robotics competitions, and experience live demonstrations of robotic technologies.

The event was a thoughtfully designed platform to provide participants with a well-rounded understanding of robotics. It combined technical education, hands-on demonstrations, and career-oriented insights to create a holistic learning experience. Attendees were introduced to the latest advancements in robotics through sessions conducted by industry experts, who shared valuable knowledge about emerging technologies and their applications. These sessions laid a strong foundation for understanding robotics' potential and its transformative impact on various industries.

Participant Engagement:

The Robotics 1.0 Workshop attracted an overwhelming response from students and robotics enthusiasts eager to expand their knowledge and actively participate in the diverse array of planned activities. The event maintained an engaging atmosphere, from the seamless and well-organized verification of registrations to the dynamic and interactive sessions.

Participants displayed exceptional curiosity and enthusiasm during the detailed explanation of the IIT Bombay Zonal Competitions. This segment provided valuable insights into the competition's structure, challenges, and expectations, motivating attendees to aspire for excellence in robotics. The workshop's highlight was undoubtedly the live demonstration of a pickup and line-following robot. This hands-on display captivated the audience, showcasing the practical applications of robotics and inspiring them to envision their innovative creations.

The interactive Q&A sessions following each segment allowed participants to clarify their doubts, exchange ideas, and delve deeper into the intricacies of robotics. The enthusiasm during these discussions was palpable, as attendees actively engaged with the resource persons, demonstrating their keen interest in exploring the limitless potential of robotics.

Overall, the Robotics 1.0 Workshop was a dynamic platform for learning, collaboration, and inspiration, motivating participants to embark on their own robotics journeys.

Outcome:

Robotics 1.0 successfully provided participants with an immersive and comprehensive experience in the dynamic field of robotics. Designed for beginners and those with prior knowledge, the workshop ensured that all attendees could gain valuable insights and hands-on skills. Led by an expert resource person, the sessions covered everything from the basics of robot mechanics to advanced design techniques, guiding participants step-by-step through building their functional robots.

A key outcome was that participants gained practical knowledge in robot construction, equipping them for robotics competitions, including those organized by IITs. They received in-depth guidance on creating stable and effective line-following and pickup robots, focusing on building reliable, real-world models. This hands-on approach and discussions on current industry trends and future innovations provided participants with a well-rounded understanding of robotics and its various applications in areas like healthcare, manufacturing, and autonomous systems.

One of the workshop's highlights was a live demonstration of a fully functioning robot, which brought theoretical concepts to life. This demonstration allowed participants to see first-hand how coding, mechanics, and problem-solving strategies translate into real-world solutions, deepening their understanding of how robots function.

Media Coverage

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సృజనాత్మకంగా ఆలోచించాలి

- అదే విజయానికి సోపానం అవుతుంది
- గీతం రోబోటిక్స్, కార్యశాలలో కిరణ్ మాటిక్స్ ఎండీ ఉద్బోధ

Date: 10/10/2024, Medak, Page: 9
Source: https://epaper.prabhanews.com

నవతెలంగాణ

సృజనాత్మక యోచనే విజయానికి సోపానం

Date: 10/10/2024, Edition: MEDAK, Page: 1
Source: https://epaper.navatelangana.com/

సృజనాత్మక యోచనే విజయానికి సోపానం

గీతం 'రోబోటిక్స్' సదస్సులో కిరణ్ మాటిక్స్ ఎండీ ఉద్బోధ

షటన్ రెడ్, అక్టోబర్ 9, ప్రజాహిత:

Robotics Workshop Held at GITAM

DECCAN NEWS SERVICE
■ HYDERABAD

The G-Electra Smart Systems Club of the Department of Electrical, Electronics, and Communication Engineering (EECE) at GITAM School of Technology (GST) organized a one-day workshop titled 'Robotics 1.0' on October 9, 2024. The workshop aimed to equip participants with the knowledge and skills necessary to compete in national tech fests held at prestigious institutions such as the IITs and other top engineering colleges across India.

The primary resource persons for the event were Kiran, Managing Director of Kiranmatics, along with his embedded developers, Rajnikanth Sen and Hema. During the in-

augural session, Kiran highlighted the significance of robotics in fostering creativity, critical thinking, and problem-solving skills among students through real-world challenges. He emphasized that teamwork and cooperation are essential for any robotics project, encouraging students to view mistakes as valuable learning opportunities that can lead to better solutions.

Kiran provided detailed insights into the structure and requirements for various tech fests, including Hackathon Robotics, Finance, and Olympiad, and categorized the types of robots into Artificial Intelligence, Autonomous Robots, and Manually Operated Robots. He covered essential components for building a

robot, such as chassis, motors, wheels, differential mechanisms, batteries, DPDT switches, gripper mechanisms, Arduino Uno, joysticks, breadboards, infrared (IR) sensors, and the LSRB algorithm.

The Kiranmatics team offered hands-on experience, guiding students through building and operating basic robotic systems. They also addressed questions from partic-

ipants, ensuring a practical and interactive learning experience.

The event commenced with a welcome note by M. Sai Krishna, President of G-Electra, while James, the Student Co-ordinator for the workshop, concluded the session with a vote of thanks, all under the supervision of M. Naresh Kumar, the faculty coordinator. This workshop inspired

GITAM students to explore the field of robotics and prepared them to excel in national tech competitions.

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www.suryaa.com

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సృజనాత్మక యోచనే విజయానికి సోపానం

గీతం 'రోబోటిక్స్' కార్యశాలలో కిరణ్ మాటిక్స్ ఎండీ ఉద్బోధ

GITAM HYDERABAD

హైదరాబాద్ ,మేజర్ న్యూస్ (ప్రతినిధి : సృజనాత్మకంగా ఆలోచించడం, విమర్శనాత్మక ఆలోచనలను అమలు చేయడం, వాస్తవ-ప్రపంచ సవాళ్ల ద్వారా సమస్య పరిష్కార నైపుణ్యాలను పెంపొందించుకోవడం వంటివి రోబోటిక్స్ రంగంలో రాణించడానికి తోడ్పడతాయని కిరణ్ మాటిక్స్ మేనేజింగ్ డైరెక్టర్ కిరణ్ అన్నారు. గీతం స్కూల్ ఆఫ్ టెక్నాలజీలోని ఈఈసీఈ విభాగానికి చెందిన 'జే-ఎలక్ట్రా' క్లబ్ బుధవారం 'రోబోటిక్స్ 1.0' పేరిట ఒకరోజు కార్యశాలను నిర్వహించింది. మనదేశంలోని ఐఐటీలు, ప్రముఖ ఇంజనీరింగ్ కళాశాలలు జాతీయ స్థాయిలో నిర్వహించే సాంకేతిక పోటీలలో పోటీపడేందుకు అవసరమైన జ్ఞానం, నైపుణ్యాలను గీతం ఇంజనీరింగ్ విద్యార్థులలో పెంపొందించే లక్ష్యంతో దీనిని ఏర్పాటు చేశారు. కిరణ్ తో పాటు ఎంబెడెడ్ డెవలపర్స్ రజనీకాంత్ సేన్, హేమలు ఈ కార్యశాలలో ముఖ్య శిక్షకులుగా వ్యవహరించారు.

ఏదైనా రోబోటిక్స్ ప్రాజెక్టుకి జట్టు సమష్టి కృషి, సహకారం చాలా కీలకమని, ఇందులో ఎదురయ్యే అపజయాలను విజయాలకు సోపానాలను మలుచుకోవాలని వారు నొక్కి చెప్పారు. హ్యాకథాన్, రోబోటిక్స్, ఒలింపియాడ్ పేరిట ప్రతియేటా దేశవ్యాప్తంగా జాతీయ స్థాయి సాంకేతిక పోటీలు నిర్వహిస్తుంటారని, వాటిల్లో పోటీ పడడానికి పేర్లు ఎలా నమోదు చేసుకోవాలో కిరణ్ మాటిక్స్ సభ్యులు వివరించారు. కృత్రిమ మేధతో స్వతంత్రంగా వ్యవహరించే రోబోట్ లు, మనుషుల ప్రమేయంతో నడిచే రోబోట్ లు, వాటిని నిర్మించడానికి అవసరమైన ఛాసిస్, మోటార్లు, వివిధ రకాల చక్రాలు, బ్యాటరీలు, స్పీడ్ లు, ఆర్డినో యునో, జాయ్ స్టిక్స్, ఇన్-ఫ్రారెడ్ (ఐఆర్) సెన్సార్లు, ఎల్ఎన్ఆర్వీ అల్గోరిథం వంటి పరికరాలు, అవి పనిచేసే విధానాలు వారు

విశదీకరించారు. ప్రాథమిక రోబోటిక్ సిస్టమ్ లను నిర్మించడం,నిర్వహించడం వంటి వాటిపై విద్యార్థులకు కిరణ్ మాటిక్స్ సభ్యులు మార్గనిర్దేశం చేస్తూ,వారికి ప్రయోగాత్మక అనుభవాన్ని అందించారు. అందులో చురుకుగా పాల్గొన్న స్వీయ అనుభవం గడించేలా విద్యార్థుల ను ప్రోత్సహిస్తూ,వారు అడిగిన ప్రశ్నలకు సమాధానాలిచ్చారు. శౌలత, జే-ఎలక్ట్రా అధ్యక్షుడు ఎం.సాయికృష్ణ స్వాగత వచనాలతో కార్యశాల ప్రారంభం కాగా, విద్యార్థి సమన్వయకర్త జేమ్స్ వందన సమర్పణతో ముగిసింది. అధ్యాపక సమన్వయకర్త ఎం.నరేష్ కుమార్ దీనిని పర్యవేక్షించారు. గీతం విద్యార్థులకు రోబోటిక్స్ పై అవగాహన కల్పించి, వారిని జాతీయ సాంకేతిక పోటీలలో పాల్గొని, రాణించేలా ఈ కార్యశాల ప్రేరేపించింది అనడంలో అతిశయోక్తి లేదు.

Conclusion

Robotics 1.0 was a resounding success, achieving its goal of offering a thorough introduction to robotics. The event provided a valuable platform for students to explore both the theoretical and practical aspects of robotics, guided by an expert in the field. From the basics of robot mechanics to the intricacies of advanced design, participants gained technical knowledge that will serve them well in future endeavors, including robotics competitions like those organized by IITs. The live demonstration of line-following and pickup robots further enriched their understanding, turning abstract concepts into tangible, real-world applications.

Beyond technical skills, Robotics 1.0 fostered a sense of community and collaboration among participants, encouraging them to share ideas and work together on challenges. The workshop also offered a broader perspective on the robotics industry, highlighting current trends and future opportunities. This comprehensive approach left participants inspired and equipped with a clearer vision of potential career paths in robotics. The event concluded with a sense of accomplishment and enthusiasm, with attendees leaving with new skills and the motivation to continue their journey in this exciting and ever-evolving field.

Guest Lectures

Guest Lecture on "Advanced Driver Assistance Systems (ADAS)"

On **August 9, 2024**, an insightful guest lecture on **"Advanced Driver Assistance Systems (ADAS)"** was organized, featuring the esteemed **Prof. P. Srihari** from the **National Institute of Technology Karnataka (NITK), Surathkal** as the resource person.

The session provided students and Faculty with a comprehensive understanding of the cutting-edge technologies in ADAS, which are pivotal in enhancing vehicle safety, automation, and driver comfort. Prof. Srihari shared his vast knowledge and expertise on sensor integration, machine learning applications in autonomous systems, and advancements in vehicular safety mechanisms.

The lecture also emphasized the real-world implications and future trends in the automotive industry, offering attendees a glimpse into the evolving landscape of intelligent transportation systems. Prof. Srihari's engaging presentation and practical insights captivated the audience, sparking thought-provoking discussions and inspiring innovation.
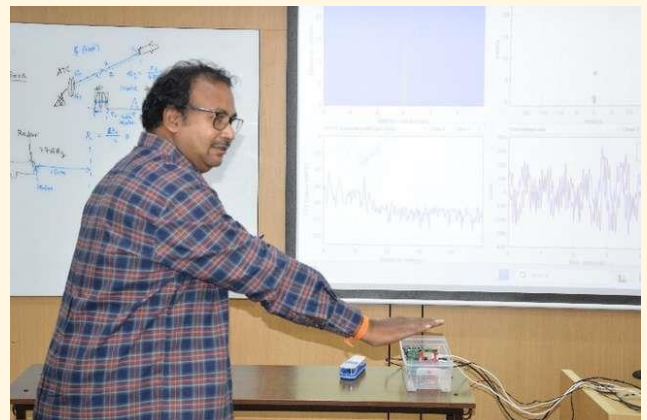
Webinars

International Webinar: "Next-Gen Electronics: Diving Deep into Laser Amplifiers"

An **International Webinar** on **"Next-Gen Electronics: Diving Deep into Laser Amplifiers"** was successfully organized on **July 12, 2024**, featuring the distinguished **Dr. Gourav Sen**, Executive Vice President of Research and Development at **FAMETEC GMBH-EBNER INDUSTRIEOFENBAU, Linz, Austria**, as the esteemed resource person.

The webinar offered an in-depth exploration of cutting-edge advancements in laser amplifiers, shedding light on their pivotal role in next-generation electronic systems. Dr. Gourav Sen, a globally renowned expert, provided valuable insights into the principles, applications, and innovations surrounding laser amplification technology.

During the session, participants thoroughly understood how laser amplifiers are revolutionizing fields such as telecommunications, medical technology, industrial processing, and scientific research. Dr. Sen shared his expertise on the challenges and opportunities in developing these technologies, offering participants a unique perspective on the future of electronics.

The engaging presentation was followed by an interactive Q&A session, where attendees could discuss technical queries and explore potential research collaborations. The webinar was a resounding success, drawing participation from students, researchers, and industry professionals alike.

We thank **Dr. Gourav Sen** for delivering an enlightening session and inspiring the audience with his expertise. This event underscores our commitment to fostering global knowledge exchange and providing exposure to state-of-the-art technologies shaping the future of electronics.
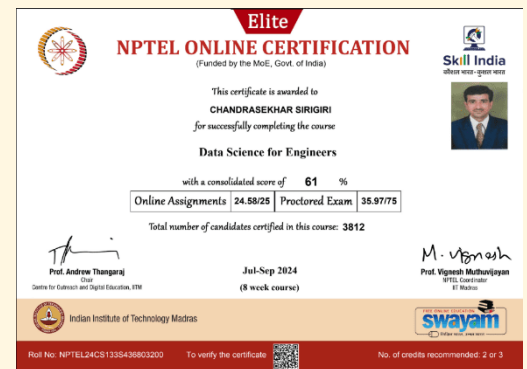
Achievements

NPTEL Courses

Dr. Chandrasekhar Sirigiri successfully completed the NPTEL certification course on "Introduction to Machine Learning," an 8-week program carrying 2 academic credits. This certification highlights his dedication to continuous learning and expertise in the field of machine learning
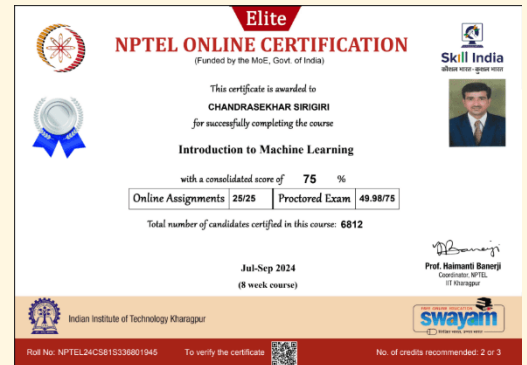
Dr. Chandrasekhar Sirigiri successfully completed the NPTEL certification course on "Data Science for Engineers," an 8-week program carrying 2 academic credits. This achievement reflects his commitment to advancing knowledge and expertise in the field of data science and engineering.

Dr. Chandrasekhar Sirigiri successfully completed the NPTEL certification course on "Computer Vision," a 12-week program carrying 3 academic credits. This accomplishment highlights his dedication to acquiring advanced knowledge and expertise in the domain of computer vision.
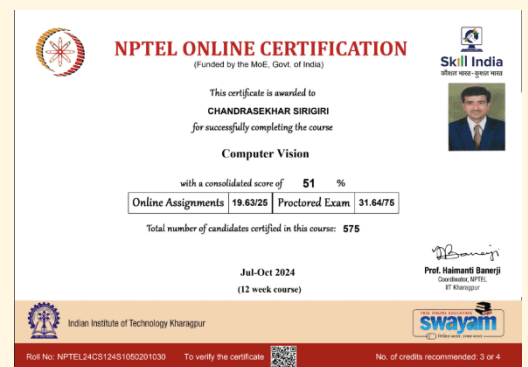
Mr. S. Francis Xavier successfully completed the NPTEL certification course on "Data Science for Engineers," an 8-week program carrying 3 academic credits. This accomplishment demonstrates his commitment to advancing expertise in the field of data science and engineering.

Mr. S. Francis Xavier successfully completed the NPTEL certification course on "Learning Analytics Tools," a 12-week program carrying 4 academic credits. This achievement highlights his dedication to expanding his knowledge and skills in the field of learning analytics.
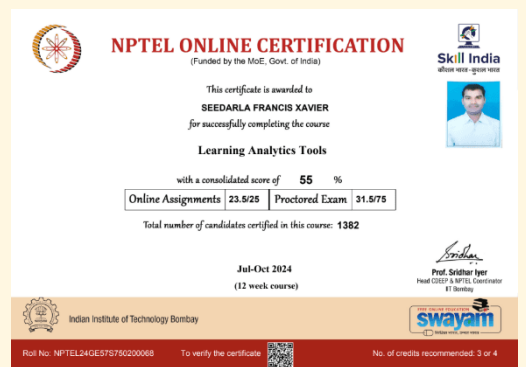
Dr. Ch. Praveen Kumar successfully completed the NPTEL certification course on "Operating Systems Fundamentals," a 12-week program carrying 3 academic credits. This achievement highlights his dedication to deepening his knowledge and expertise in the core concepts of operating systems.
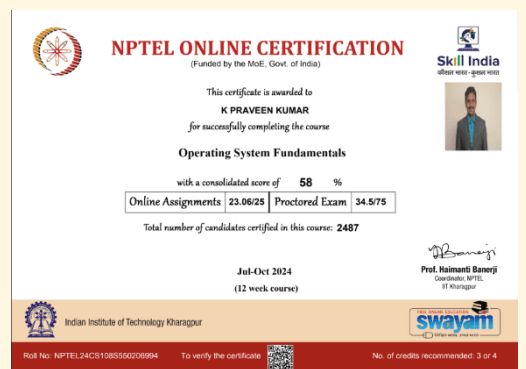

Mr. R. Chandru successfully completed the NPTEL certification course on "Introduction to Machine Learning," an 8-week program carrying 2 academic credits. This accomplishment highlights his commitment to expanding his knowledge and skills in the field of machine learning.

Mr. R. Chandru successfully completed the NPTEL certification course on "Data Science for Engineers," an 8-week program carrying 2 academic credits. This achievement reflects his dedication to advancing his knowledge and expertise in the field of data science and engineering.
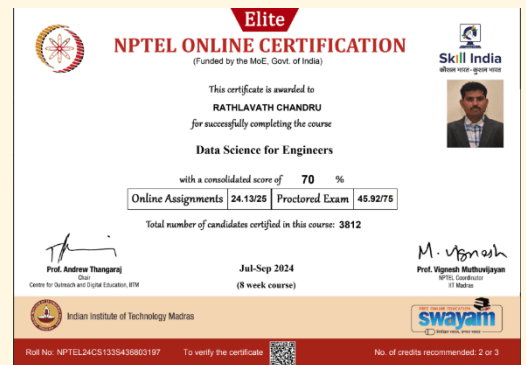
Dr. K. Praveen Kumar successfully completed the NPTEL certification course on "Operating Systems Fundamentals," a 12-week program carrying 3 academic credits. This accomplishment reflects his commitment to deepening his understanding of core operating system concepts and enhancing his technical expertise.
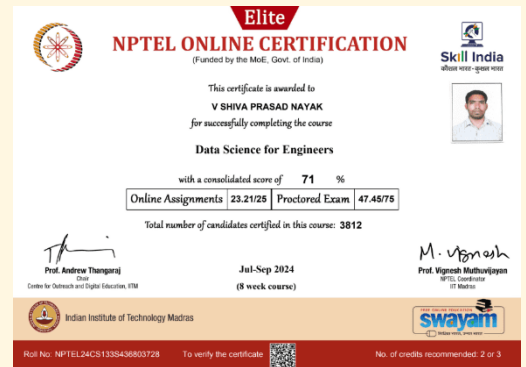

Dr. K. Praveen Kumar successfully completed the NPTEL certification course on "Introduction to Internet of Things," a 12-week program carrying 3 academic credits. This achievement underscores his dedication to advancing his expertise in the rapidly growing field of IoT and emerging technologies.
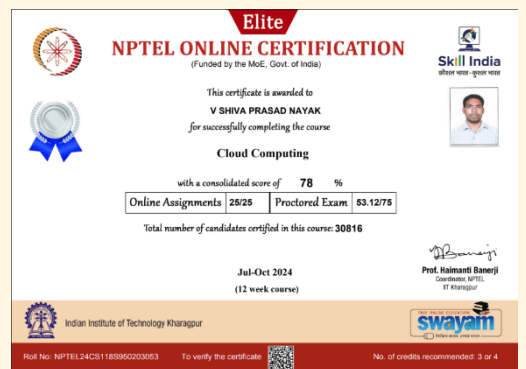

Mr. V. Shiva Prasad successfully completed the NPTEL certification course on "Introduction to Machine Learning," an 8-week program carrying 2 academic credits. This accomplishment highlights his commitment to expanding his knowledge and expertise in the field of machine learning.
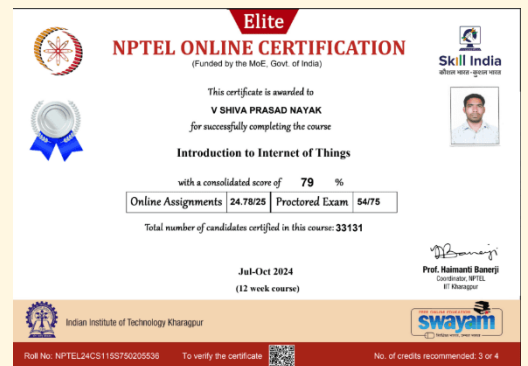
Mr. V. Shiva Prasad successfully completed the NPTEL certification course on "Data Science for Engineers," an 8-week program carrying 2 academic credits. This achievement reflects his dedication to advancing his expertise in the field of data science and engineering.
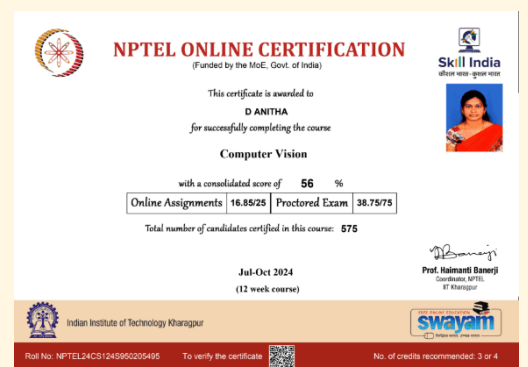
Mr. V. Shiva Prasad successfully completed the NPTEL certification course on "Cloud Computing," a 12-week program carrying 3 academic credits. This achievement demonstrates his commitment to enhancing his knowledge and expertise in the field of cloud computing and emerging technologies.
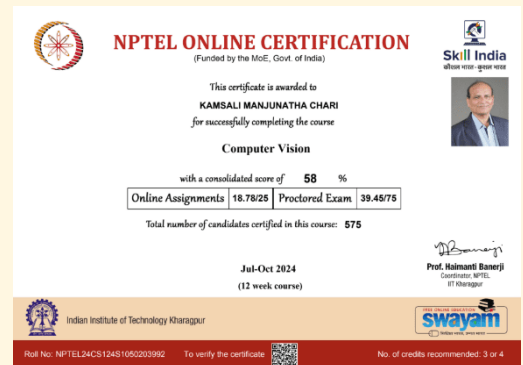
Mr. V. Shiva Prasad successfully completed the NPTEL certification course on "Introduction to Internet of Things," a 12-week program carrying 3 academic credits. This accomplishment highlights his dedication to advancing his expertise in the rapidly evolving field of IoT and related technologies.
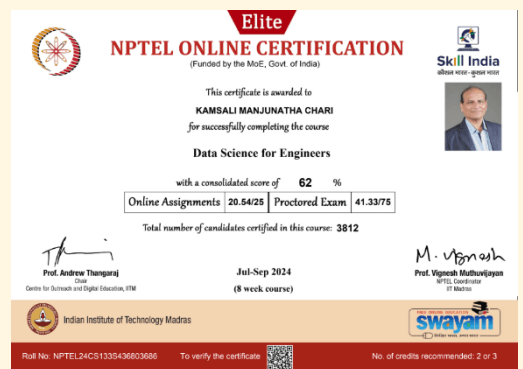
Dr. D. Anitha successfully completed the NPTEL certification course on "Computer Vision," a 12-week program carrying 3 academic credits. This achievement underscores her commitment to enhancing her expertise in the field of computer vision and its applications.
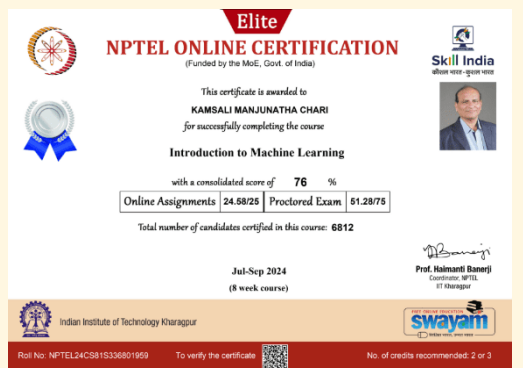
Prof. K. Manjunatha Chari successfully completed the NPTEL certification course on "Computer Vision," a 12-week program carrying 3 academic credits. This accomplishment highlights his dedication to advancing his knowledge and expertise in the field of computer vision and its applications.
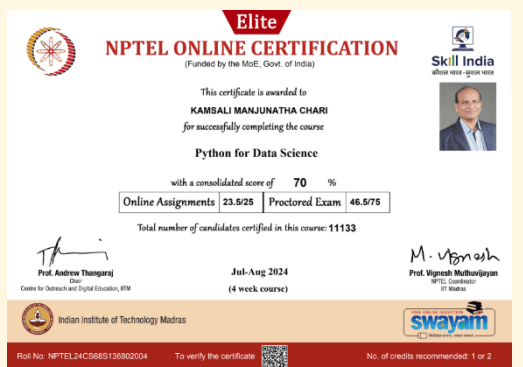
Prof. K. Manjunatha Chari successfully completed the NPTEL certification course on "Data Science for Engineers," an 8-week program carrying 2 academic credits. This achievement reflects his commitment to expanding his knowledge and expertise in the field of data science and engineering.
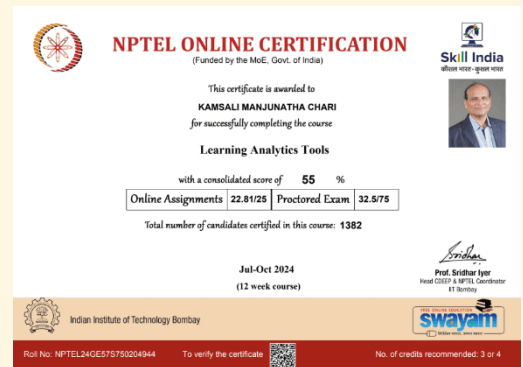
Prof. K. Manjunatha Chari successfully completed the NPTEL certification course on "Introduction to Machine Learning," an 8-week program carrying 2 academic credits. This accomplishment highlights his dedication to expanding his expertise in the field of machine learning.

Prof. K. Manjunatha Chari successfully completed the NPTEL certification course on "Python for Data Science," a 4-week program carrying 1 academic credit. This achievement reflects his commitment to enhancing his skills in Python programming and data science.
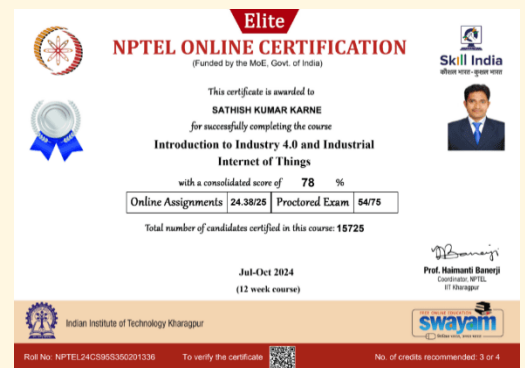
Prof. K. Manjunatha Chari successfully completed the NPTEL certification course on "Learning Analytics Tools," a 12-week program carrying 3 academic credits. This accomplishment highlights his dedication to advancing his expertise in learning analytics and educational technologies.

Dr. G. Srinivas successfully completed the NPTEL certification course on "Introduction to Industry 4.0 and Industrial Internet of Things," a 12-week program carrying 3 academic credits. This achievement reflects his dedication to advancing his knowledge in the fields of Industry 4.0 and IoT technologies.

Mr. K. Sathish Kumar successfully completed the NPTEL certification course on "Introduction to Industry 4.0 and Industrial Internet of Things," a 12-week program carrying 3 academic credits. This accomplishment highlights his commitment to expanding his knowledge in the fields of Industry 4.0 and IoT technologies.

Mr. A. Sambasiva Rao successfully completed the NPTEL certification course on "Introduction to Industry 4.0 and Industrial Internet of Things," a 12-week program carrying 3 academic credits. This achievement reflects his dedication to advancing his expertise in Industry 4.0 and IoT technologies.

Mr. N. Prashanth successfully completed the NPTEL certification course on "Introduction to Machine Learning," an 8-week program carrying 2 academic credits. This accomplishment highlights his commitment to expanding his knowledge and expertise in the field of machine learning.

Mr. M. BinduPriya successfully completed the NPTEL certification course on "Introduction to Machine Learning," an 8-week program carrying 2 academic credits. This achievement reflects her dedication to enhancing her skills and knowledge in the field of machine learning.

Student Achievements

Team Alpha's Resounding Success at SIH 2024

We are delighted to celebrate the remarkable achievement of **Team Alpha**, whose innovative approach and technical prowess earned them the coveted **First Prize** at the Internal Smart India Hackathon (SIH) held on **September 9, 2024**. Their Self-Guided Aid and Connectivity Rover project exemplified excellence in the **Hardware Category**, combining creativity, problem-solving, and practical application to address real-world challenges.

The team comprised a dynamic group of students, each contributing their unique skills and expertise:

- **M Sai Krishna** (HU22EECE0100051)
- **Sri Kaushik Chowdary T** (HU22EECE0100425)
- **G. Showry James** (HU22EECE0100077)
- **Thigulla Charitha Reddy** (HU22EECE0100280)
- **M. Gowri Shankar Royal** (2023004399)

Guided by the esteemed **Dr. K Praveen Kumar**, the team demonstrated exceptional innovation and dedication throughout the competition. Their project, the **Self-Guided Aid and Connectivity Rover**, is a testament to their ingenuity and commitment to creating impactful technological solutions. This advanced rover is designed to provide autonomous assistance and seamless connectivity, showcasing potential applications in various industries, from healthcare to disaster management.

The Internal SIH served as a platform for students to showcase their creativity and technical acumen. Team Alpha's success underscores their ability to translate complex ideas into actionable, efficient solutions. The rover's design and functionality impressed the judges, earning high praise for addressing pressing real-world problems focusing on sustainability, automation, and user-centric innovation.

Congratulations to **Team Alpha** on this outstanding achievement! We look forward to seeing more groundbreaking contributions from these talented innovators as they continue to lead the way in advancing technology for a better tomorrow.

Team Blaze Triumphs at Internal SIH 2024

We are proud to announce that **Team Blaze**, composed of talented **4th Year students**, secured the **Second Prize** at the **Internal Smart India Hackathon (SIH)** held on **September 9, 2024**. The team's innovative Suction-Based Automatic Waste Collection System project impressed the judges with its creativity, functionality, and potential to revolutionize waste management systems.

The winning members of Team Blaze are:

- **Palle Deepak** (HU21EECE0100126)
- **G Anirudh** (HU21EECE0100130)
- **Gurpreet Singh Bawa** (HU21EECE0100236)
- **Chittei Amoolya** (HU21EECE0100203)
- **K Manikantha** (HU21EECE0100311)
- **Jilla Abhishek** (HU21EECE0100193)

The team, under the guidance of **Mr. M Naresh Kumar**, demonstrated exceptional problem-solving skills and ingenuity in the **Hardware Category**. The **Suction-Based Automatic Waste Collection System** is designed to streamline the waste collection process using advanced suction technology, offering a more efficient and automated approach to waste management. This innovative solution showcases the team's ability to address environmental challenges with cutting-edge technology.

The success of Team Blaze at the Internal SIH is a testament to their creativity, technical prowess, and dedication to developing practical solutions that can make a real-world impact. Their project not only highlights their innovative spirit but also their commitment to advancing technology for the betterment of society.

The remarkable success of **Team Blaze** at the **Internal Smart India Hackathon (SIH)**, where they secured the **Second Prize** for their project, **Suction-Based Automatic Waste Collection System**, is a monumental achievement. Their triumph highlights their technical expertise and underscores the power of creativity, determination, and teamwork. The team's ability to tackle a critical issue like urban waste management and develop a functional, innovative solution reflects the true spirit of engineering excellence.
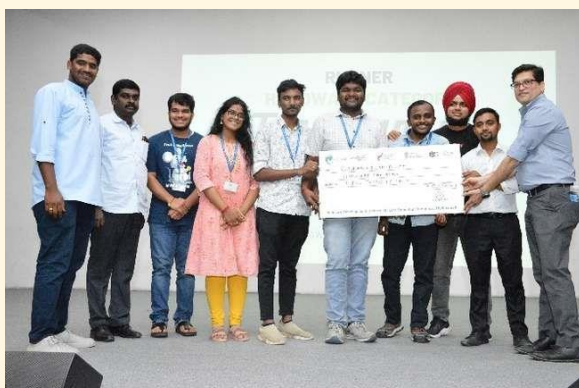
Team Code Runners Secures 3rd Place at SIH 2024

We are proud to announce that **Team CodeRunners** from the 3rd Year has achieved an impressive **3rd place** at the **Internal Smart India Hackathon (SIH)** held on **September 9, 2024**. The team showcased their exceptional skills and innovative thinking through their Brain Tumor Classification and BrainyBot projects.

The talented team members include:

- **Alekhya Madhiraju** (HU22CSEN0300042)
- **Vineet Bellary** (HU22CSEN0300148)
- **Karthikeya Sachin** (HU22CSEN0300073)
- **Gudimella Pooja** (HU22CSEN0300405)
- **Bhuvanesh Bakaram** (HU22CSEN0100550)
- **N.V. Dheeraj** (HU22CSEN0101847)

Under the expert guidance of their mentors, **Team CodeRunners** demonstrated exceptional technical proficiency and an innovative approach to solving complex problems in **artificial intelligence** and **medical technology**. Their project, **Brain Tumor Classification**, leveraged cutting-edge machine learning techniques to aid in the early detection of brain tumors, a critical challenge in modern medicine. By analyzing medical imaging data and using algorithms to identify patterns indicative of tumors, the team presented a solution that could revolutionize diagnostic processes, offering the potential for quicker, more accurate diagnoses and ultimately improving patient outcomes.

The second project, **BrainyBot**, showcased the team's ingenuity in robotics. Designed to perform various tasks, this robot exemplified its ability to combine hardware and software solutions to address real-world challenges.

The recognition they received is a testament to the hard work, determination, and **innovative spirit** they brought to the competition. **Team CodeRunners** has set a high bar for their peers, exemplifying the power of **collaborative innovation** and their potential to contribute to groundbreaking technological advancements.

International Journals

Professor. T. Madhavi has published a paper titled **"Red Deer Optimization-Based Delay Minimization for mm-Wave Communication System Enabled with Mobile Edge Computing"** in the **Journal of Information and Knowledge Management**. The paper, indexed in Scopus at the international level, was published in **August 2024, Volume 22, Issue 4, Quartile 2**. This esteemed publication showcases her contributions to communication systems and mobile edge computing.

Professor. T. Madhavi has published a paper titled "**Development of a Conceptual Model for Secured Communication in Wireless Ad hoc Networks**" in the **International Journal of Engineering Trends and Technology**. The paper, indexed in Scopus at the international level, was published in **November 2024, Volume 72, Issue 11, Quartile 4**. This noteworthy publication underscores her contributions to securing communication in wireless ad hoc networks.

Professor. T. Madhavi has published a paper titled **"5G High Band S-Slotted Doppelganger Patch Antenna"** in the journal **AIP Conference Proceedings**. The paper, indexed in Scopus at the international level, was published in **July 2024, Volume 3028, Issue 1**. This esteemed publication highlights her contributions to developing advanced antenna technologies for 5G applications.

Professor. P. Trinatha Rao has published a paper titled "**A Comprehensive Analysis of Dynamic PAPR Reduction Schemes in MIMO-OFDM Systems**" in the **International Journal of Informatics and Communication Technology**. The paper, indexed in Scopus at the international level, was published in **August 2024, Volume 13, Issue 2**. This significant contribution highlights his expertise in PAPR reduction techniques for MIMO-OFDM systems.

Professor. P. Trinatha Rao has published a paper titled "**Devising and Formulating a Suitable Shielding Material to a Shape for the Optimal Protection of Public Against EMF Radiation from the Mobile Tower**" in the **Journal of Electrical Systems (JES)**. The paper, indexed in Scopus at the international level, was published in **July 2024, Volume 20, Issue 10, Quartile 10**. This important work underscores his contributions to public safety and protection against EMF radiation from mobile towers.

Dr. K. Praveen Kumar has published a paper titled "**Reinforced Black Widow Algorithm with Restoration**" in the journal **Smart Science**. The paper, indexed in Scopus at the international level, was published in **July 2024, Volume 12, Issue 4, Quartile 1**. This publication highlights his significant contributions to developing advanced algorithms in smart science.

Dr. P. V. Rama Krishna has published a paper titled **"Artificial Rabbits' Optimization-Based Reconfiguration and Distributed Generation Allotment in the Distribution Network"** in the **International Journal of Power Electronics and Drives**. The paper, indexed in Scopus at the international level, was published in **September 2024, Volume 15, Issue 3, Quartile 2**. This noteworthy publication showcases his contributions to optimizing power distribution networks through innovative techniques.

Dr. P. V. RamaKrishna has published a paper titled **"Lifetime (Bx) Improvement of Grid-Connected Inverter Using Si-Si C H-IGBT/Diode for PV Application: A Reliability Approach"** in the **Indonesian Journal of Electrical Engineering and Computer**. The paper, indexed in Scopus at the international level, was published in **August 2024, Volume 35, Issue 2, Quartile 2**. This publication underscores his contributions to enhancing the reliability and performance of grid-connected inverters for photovoltaic applications.

Dr. S. V. Padmavathi has published a paper titled **"Optimizing Solar PV System for Second-Order Fuzzy Logic Inverter Design for UPQC to Enhance Power Quality"** in the Journal of **Theoretical and Applied Information Technology**. The paper, indexed in Scopus at the international level, was published in **July 2024, Volume 102, Issue 14, Quartile 4**. This publication highlights her contributions to enhancing power quality through innovative solar PV system optimization and inverter design techniques.

Delegates Visited

UK Delegates Visit: A Valuable Interaction with Students

On **October 24, 2024**, a distinguished delegation from the **United Kingdom** visited the campus, marking an inspiring and knowledge-enriching occasion for students. The visit was centered around **interaction, mentorship, and knowledge exchange**, providing students with a unique opportunity to present their innovative projects to international experts.

During the session, the delegates thoroughly reviewed the students' projects, offering **valuable insights and constructive suggestions** to help refine and enhance their work. Their expertise in various domains enabled them to guide students in improving the **technical, practical, and innovative aspects** of their research and project implementations.

Impressed by the students' creativity, dedication, and problem-solving approach, the delegates **appreciated their efforts** and commended them for their commitment to innovation and excellence. Their encouragement served as a great **motivational boost**, reinforcing the importance of critical thinking, research-driven development, and global perspectives in academics.

Indian Air Force Delegates Visit GITAM Campus: Inspiring Students with Insights and Appreciation

The GITAM campus was honored to host distinguished Indian Air Force (IAF) delegates, who visited to engage with students and explore their innovative projects. During their visit, the delegates thoroughly examined the students' work, offering valuable insights and constructive suggestions to help enhance the students' research and project implementations.

Impressed by the students' creativity, technical expertise, and problem-solving approaches, the IAF delegates expressed their appreciation for the students' dedication and efforts. They recognized the potential impact of the students' projects in real-world applications and encouraged them to continue refining their ideas with a focus on innovation and national development.

This interaction proved to be a significant source of motivation for the students, as it provided them with the rare opportunity to receive expert guidance from esteemed professionals. The visit highlighted the importance of research and technology in the defense and aerospace sectors, inspiring the students to pursue excellence and contribute meaningfully to technological advancements in the country.

Industrial Visits

Industrial Visit to TOSHIBA Transmission & Distribution Systems (India) Pvt. Ltd.

Visit To: TOSHIBA Transmission & Distribution Systems (India) Pvt. Ltd.
Location: Sangareddy, Telangana
Date of Visit: 16/10/2024
Organized By: EECE Department
Faculty Coordinator: S. Francis Xavier

INTRODUCTION

Toshiba Transmission & Distribution Systems (India) Pvt. Ltd. (TTDI) is a key manufacturing unit of Toshiba Corporation, Japan. The Sangareddy, Telangana facility specializes in designing and producing power transformers, distribution transformers, and other transmission equipment. The visit was organized to give students practical exposure to the manufacturing processes, quality standards, and technological advancements in transformer production.

OBJECTIVES OF THE VISIT

- To understand the manufacturing process of transformers.
- To observe the latest technologies employed in the production and testing of transformers.
- To gain insight into the quality control measures adopted by the company.
- To bridge the gap between theoretical knowledge and practical applications.

To interact with industry professionals and understand the scope of power and energy sector careers.

KEY LEARNINGS

- **Understanding Transformer Components:** Core, windings, bushings, tap changers, and cooling systems.
- **Transformer Types:** Power transformers, distribution transformers, and specialty transformers.
- **Manufacturing Techniques:** Insights into automated and manual processes for high precision.
- **Testing Procedures:** Lightning impulse test, temperature rise test, and routine tests for quality assurance.
- **Industry Exposure:** Interaction with experienced engineers provided valuable career insights.

Photos of the visit

AGENDA OF THE VISIT

- **Welcome and Introduction Session**
- **Company Overview and Presentation**
- **Guided Tour of the Manufacturing Plant**
  - Core Assembly Section
  - Winding Section
  - Insulation and Drying Process
  - Tanking and Oil Filling
  - Testing and Quality Control
- **Q&A Session with Engineers and Technical Experts**
- **Feedback and Closing Remarks**

DETAILS OF THE VISIT

- Upon arrival, we were warmly welcomed by the company representatives, followed by a briefing about Toshiba's legacy in the power transmission and distribution industry. The tour began with the core assembly section, where students observed cutting, stacking, and assembling core laminations.
- In the winding section, we were shown how copper and aluminum windings are meticulously prepared and insulated. This was followed by the drying process, in which moisture was removed from the windings to ensure longevity and performance. The tanking and oil-filling stage illustrated how transformers are sealed and filled with insulating oil to enhance their dielectric strength.
- A significant highlight was the quality control and testing phase, where transformers undergo rigorous and impulse tests to ensure compliance with international standards.

CONCLUSION

- The visit to Toshiba T&D Systems was a highly educational experience that enhanced our understanding of transformer manufacturing and the importance of quality control in the power sector. This industrial visit bridged the gap between classroom learning and real-world applications, fostering a deeper interest in electrical engineering and power systems.

Industrial Visit to National Remote Sensing Centre (NRSC), ISRO

Visit To: National Remote Sensing Centre (NRSC), ISRO
Location: Hyderabad, Telangana
Date of Visit: 25/10/2024
Organized By: EECE Department
Faculty Coordinator: S. Francis Xavier

INTRODUCTION

The National Remote Sensing Centre (NRSC) is a premier organization under the Indian Space Research Organisation (ISRO), dedicated to remote sensing, satellite data management, and geospatial technology. The facility in Hyderabad is involved in acquiring, processing, and disseminating remote sensing data for various applications in natural resources management, disaster monitoring, and urban planning.

OBJECTIVES OF THE VISIT

- To understand the functioning and operations of remote sensing satellites.
- To observe the processes involved in satellite data acquisition and analysis.
- To gain insight into the application of remote sensing in various sectors.
- To bridge the gap between theoretical knowledge and practical applications.
- To interact with scientists and professionals in the field of space technology.

AGENDA OF THE VISIT

- **Welcome and Introduction Session**
- **Presentation on NRSC Activities and Achievements**
- **Guided Tour of Facilities**
  - Data Reception and Processing Facility
  - Image Interpretation and Analysis Section
  - Ground Station Operations
- **Demonstration of Remote Sensing Applications**
- **Q&A Session with Scientists and Experts**
- **Feedback and Closing Remarks**

DETAILS OF THE VISIT

- Upon arrival, we were warmly welcomed by the NRSC team, followed by a detailed presentation about the role of NRSC in national development and space technology. The tour began with the data reception and processing facility, where students observed how satellite signals are received and converted into useful imagery.
- In the image interpretation section, we were shown how to analyze satellite images for various applications such as agriculture, forestry, and urban planning. The ground station operations provided insights into satellite tracking and data acquisition.
- A highlight of the visit was the demonstration of disaster monitoring through remote sensing, showcasing NRSC's contribution to managing natural calamities.

KEY LEARNINGS

- **Understanding Remote Sensing Technology:** Satellite imaging, data processing, and analysis.
- **Applications:** Use of remote sensing in agriculture, disaster management, and environmental monitoring.
- **Satellite Operations:** Insights into satellite tracking, reception, and ground station operations.
- **Geospatial Technology:** Importance of GIS and mapping in resource management.
- **Industry Exposure:** Interaction with ISRO scientists provided valuable career insights.

Photos of the visit

CONCLUSION

The visit to NRSC, Hyderabad, was a highly educational experience that enhanced our understanding of remote sensing and satellite technology. This industrial visit bridged the gap between classroom learning and real-world applications, fostering a deeper interest in space technology and geospatial sciences.

Outreach

Empowering Education: Book Distribution Program at ZPHS Schools

G Electra Club conducted a highly successful philanthropic event as part of our WOW (Wellbeing Out of Waste) campaign. The event involved the distribution of free stationery to students at ZHPS, accompanied by vibrant interactions and the delightful surprise of handcrafted paper flowers presented by the students to our club members. This report details the planning, execution, and heart-warming moments that unfolded during this unique initiative.

Introduction:

The WOW campaign focuses on promoting sustainability and well-being by repurposing waste materials. Our recent event at ZHPS aimed to provide essential stationery to students while emphasizing the transformative power of repurposing waste to support their educational endeavors.

Planning and Coordination:

The G Electra Club Events Committee meticulously planned the event. The following key steps were taken:
● Coordination with ZHPS for permissions and logistical support
● Collection of stationery donations from club members and local businesses
● Books and stationery items were given by ITC in exchange for collective book waste from GITAM
● Design and printing of promotional materials to create awareness about the event

Interaction with Students:

The students' joyful nature and impressive creativity in crafting paper owers marked the event. The interaction included:
● Inspirational talks by club members emphasizing academic excellence, sustainability, and personal growth
● Appreciation for the student's creativity and the exchange of heartfelt moments

Impact:

The event left a lasting impact on both the students and G Electra Club members:
● ZHPS students received essential stationery, enhancing their educational resources
● Club members were deeply touched by the student's creativity, receiving handcrafted paper flowers as tokens of appreciation
● The event strengthened community ties, showcasing the harmonious relationship between G Electra Club and the local school

Placements

AXIS ENERGY

Mu Sigma (Do the MATH)

Accenture

TCS (Tata Consultancy Services)

Tech Mahindra

Prodapt

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