



**JB INSTITUTE OF ENGINEERING AND
TECHNOLOGY**
(UGC Autonomous)

*(Accredited by NAAC & NBA, Approved by AICTE & permanently
affiliated to JNTUH)*

GENEREX

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**DEPARTMENT OF ELECTRICAL
AND ELECTRONICS
ENGINEERING**

www.jbiet.edu.in



JB INSTITUTE OF ENGINEERING AND TECHNOLOGY

(UGC AUTONOMOUS)

(ACCREDITED BY NAAC & NBA, APPROVED BY AICTE & PERMANENTLY
AFFILIATED TO JNTUH) (BHASKER NAGAR, YENKEPALLY, MOINABAD MANDAL,
R.R DIST, HYDERABAD-75)E

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING





LATE SHRI J. BHASKAR RAO GARU

(B.COM, LLB)

FOUNDER CHAIRMAN

J.B. GROUP OF EDUCATIONAL INSTITUTIONS



SMT.J UASUMATHI DEVI
CHAIRPERSON
J.B.GROUP OF EDUCATIONAL INSTITUTIONS



About college



- As one of the top ten most preferred institutions in Telangana, JBIET continues to strive to impart technical (engineering) and professional education of very high standards.
- JBIET aims to mold young learners into globally competitive professionals who are professionally deft, intellectually adept, and socially responsible.
- The expert faculty at JBIET inculcate the best values and principles, ascribing to a modern curriculum; while the students imbibe pragmatic perception and a pro-active nature, which spurs them towards exploration and advanced inquiry, resulting in valuable insights.
- The Placement record of JBIET over the years is proof of our right efforts in enabling the best in class engineering, technical, and professional education to aspirants

A close-up photograph of a chessboard with several wooden chess pieces. A king piece is prominently featured in the center, with a knight and a pawn visible to its right. The background is slightly blurred, emphasizing the pieces in the foreground.

JBLET VISION

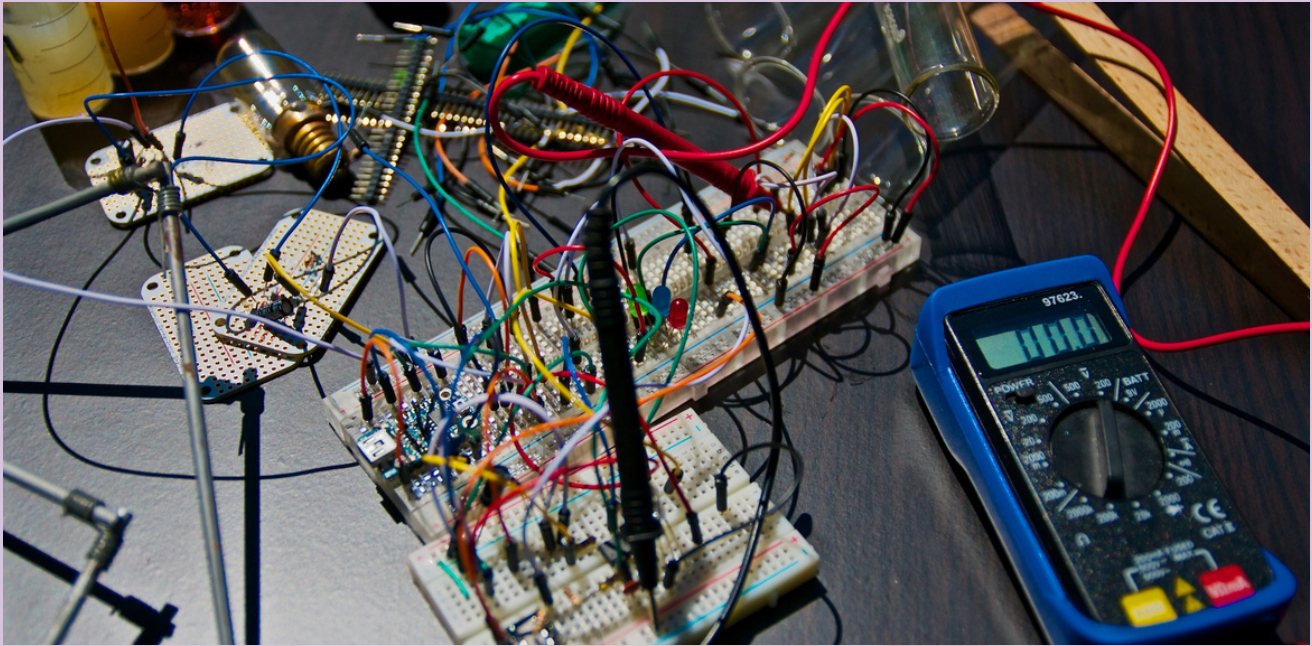
- To be a center of excellence in engineering and management education, research, and application of knowledge to benefit society with a blend of ethical values and global perception.

A photograph of a target with concentric red and white rings. The target is mounted on a black stand with three legs. The background is dark and slightly blurred.

JBLET MISSION

- To provide world-class engineering education, and encourage research and development.
- To evolve innovative applications of technology and develop entrepreneurship
- To mold the students into socially responsible and capable leaders

ABOUT DEPARTMENT



The Department of Electrical and Electronics Engineering was inceptioned in the academic year 1998–1999. In the long haul, with a vision of providing the finest postgraduate program, the department introduced the M.Tech. in Electrical Power Systems in the academic year 2004–2005. To add a jewel to the crown, the department inaugurated the IEEE students' chapter in 2017 and the IET students' chapter in 2020 to promote research attitude among the young aspirants. In the quality check of NBA, the department has been accredited under Tier-I.

The department is unique in its ways by promoting excellence in Electrical Engineering fulfilling its role in the era of the new millennium, and meeting the needs and demands of various industrial sectors. With the intent of instilling a research approach among students, the department is heedful in Research & Development projects. In its augmentation, the department is involved in collaborative research with industries. Coupled with its gradual proliferation, the department has signed MoUs with leading industries. The Department has established a Center of Excellence in Renewable Energy Sources for carrying out advanced research.

With determined hope and optimism, the department has dedicated and well-qualified faculty members who manifested to be specialized in Power Systems, Power Electronics, Electrical Drives and controls, Control Systems, Electrical Machines, Renewable Energy, etc. The curriculum is developed in such a way as to meet the industry requirements from time to time, also in synchronization with the AICTE model curriculum by covering emerging areas like Renewable Energy Systems, Embedded Systems, Electric Hybrid vehicles, Industrial Automation and Control, Artificial intelligence, etc. Besides, the students are replenished with advanced courses for enhancing their technical skills and programming abilities to get acquainted with new trends in technology and develop their overall potential in diversified aspects.



VISION ^{EEE} DEPARTMENT

- To be a Centre for State-of-the-art learning and research in the area of Electrical and Electronics Engineering, where the stakeholders could explore, experiment, and exhibit their expertise with an industrial outlook.



EEE DEPARTMENT MISSION

- To Equip the student with advanced learning skills in the field of Electrical and Electronics Engineering as well as the professional skills necessary to face the challenges of the future.
- To Engineer the student to engage in research activities leading to innovative applications of technology for the benefit of society.
- To Enable the student with the qualities of leadership and social responsibility.

SECRETARY'S MESSAGE



SHRI J V KRISHNA RAO
MBA HR-USA
SECRETARY, JBES

“Education is the passport to the future, for tomorrow belongs to those who prepare for it today”. JB Institute of Engineering & Technology was established in the year 1997 under the umbrella of JB Group of Educational Institutions, Hyderabad. At present JBIET is a UGC Autonomous Institution and permanently affiliated to JNTU Hyderabad. The Speedy development in the field of Information & Technology has accelerated the demand for value-based education in the stream of Engineering, Technology, and Management which is qualitative, progressive, and multidimensional in a competitive global environment. We provide quality education beyond the four walls of the classroom to cope with the corporate world. The aim of JBIET is not only to produce mere degree holders but the bright, talented men and women equipped with all-round development of personality. Our vision of the institute is to impart quality education with Life Skills in all core disciplines of knowledge by developing global leaders who are passionate, committed, and confident to take initiative in nation-building and create a peaceful environment for WORK, WORKER, AND WORKPLACE.

CHEIF EXECUTIVE OFFICER'S MESSAGE



MAJ GEN Dr S S DASAKA
SM, VSM (Retd)

At J.B. Institute of Engineering and Technology (JBIET), we are dedicated to maintaining our position as a leading engineering college in Telangana and Andhra Pradesh. Our faculty, comprised of experienced academics, industry experts, and researchers, are committed to delivering high-quality education that prepares our students for successful careers in their chosen fields. Our curriculum is regularly updated to align with industry requirements, ensuring that our graduates are industry-ready. We recognize the importance of co-curricular and extra-curricular activities in overall student development, and we provide Life Skills and Employability Skills Training from the first semester onward. Our campus, situated in a peaceful environment, provides an ideal atmosphere for learning. As part of the JB Educational Group of Institutions, we offer a range of undergraduate and postgraduate programs in Architecture, Pharmacy, Law, Medicine, and Dentistry. Our interdisciplinary approach fosters a creative and innovative spirit among our students through the JB Institute of Inventors Association of India (JBIIAI), which provides intellectual, logistical, and financial support from ideation to commercialization. Our goal is to turn our students into job providers rather than job seekers. We will guide you throughout your studies at the institute to help you become knowledgeable graduates/postgraduates. We look forward to your bright success alongside your parents/guardians as we move forward together. Remember Swami Vivekananda's words: "Arise, Awake, and Stop not till the goal is reached." We are excited to embark on this beautiful journey with you. Come join us! Wishing you all the best!

PRINCIPAL'S MESSAGE



DR. P.C. KRISHNAMACHARY

Welcome to the vibrant world of JB Institute of Engineering and Technology, Hyderabad, I on behalf of all the faculties and staff, congratulate you for choosing JBIET to reach your life goal. This Institute was established in the year 1998 under the aegis of the JB Group of Educational Institutions. JBGEI is the brainchild of our visionary leader and founder chairman Late Sri. J. Bhaskar Rao Garu. In Consonance with the needs of time and to cope with the dynamic changes in the era of technology dominant world.

At JBIET we the team are continuously working to fulfill the local, regional, national, and global aspirations of the youth of Telangana and Andhra in particular and India at large for providing world-class technical education to benefit all sections of society. In the current context of a rapidly changing Socio-Economic Scenario, the Demographic Dividend of India plays a major role in performing unexpected results. We go beyond the normal education system at our campus. The overall holistic development of the budding professional / technocrats of JBIETians with value addition education systems with Employability and Life Skills, Techno Sessions, Cultural Fest, Technical Fest, QUIZ, Guest Lectures, Industry Institute Interactions, and most importantly the curriculum design in consult with Industry and university is extending full support to empower our institution.

Our Institute is committed to maintaining an academically rich and professionally competitive tent environment by encouraging the enterprising skills of our students. Our institute has consistently produced excellent results and its alumni are making their mark in distinguished organizations in India and overseas. We are constantly making efforts to ensure that our students showcase their academic talent with high moral values and make responsible citizens of society and humanity. I am confident that we as an Institute will grow and contribute positively and actively to transforming society.

HEAD OF DEPARTMENT'S MESSAGE



DR P. DURAIPANDY
B.E.,PhD

It gives me immense pride in saying that we are highly proud of your achievements and accomplishments that you have established over these years. The dedication you showed throughout your graduate life is unimaginable. The great walk into your career and life as a whole begins now. In this era of nerve-racking global competition, the choices you have are too many and will leave you perplexed. My sincere advice to all of you is that you need to be thoughtful, and creative and choose a very right path that may lead you to the right destination.

I am very sure that you will be successful there too, as you have been successful here. We truly believe in you and your potential. Never stop learning and never stop winning! Learn from everyone, may it be great or mediocre. Be prepared in such a manner that no matter, how forceful or critical the challenges are; always encounter those with full strength and vigor.

I would like to appeal to my dear students to project you as good ambassadors of our college and never let self-centered motives malign the honesty and ethics you have acquired here over the years. It is your time to earn your name, make your career, and make your Parents and Mentors proud. I am sure your poised character will earn your accolades.

Always keep up the dedication and sincerity and hold your head high – without losing sight of self-respect, integrity, human values, and ethics. Render dedicated service to humanity and lived a happy and peaceful life.

May the Almighty always guide you on your path and bless you. Wish you all the very best in life. Stay connected!

PROGRAM EDUCATIONAL OBJECTIVES (PEOS):-

PEO1:	To Create an excellent academic learning environment by providing awareness on lifelong learning, apply the technical knowledge in the field of Electrical and Electronics Engineering to pursue higher studies or in their professional career.
PEO2:	To demonstrate technical knowledge to analyze, design, develop, optimize, and implement complex electrical systems. Also gain multidisciplinary knowledge through projects and industrial training, providing a sustainable competitive edge in R&D and meeting industrial needs in the field of Electrical and Electronics Engineering.
PEO3:	To possess professional and ethical attitudes with effective communication skills, entrepreneurial thinking and an ability to relate engineering issues to the broader social context. Also develop requisite skills to excel in their chosen profession with an awareness of contemporary issues and the need for life -long learning.

PROGRAM OUTCOMES (POS:-)

PO 1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex electrical and electronics engineering problems.

PO 2: Problem Analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and electrical sciences.

PO 3: Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.

PO 4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: Modern tool usage: 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.

PO 6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the electrical and electronics engineering practice.

PO 7: Environment and sustainability: Understand the impact of professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

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A high-speed train, likely a Shinkansen, is stopped at a modern train station platform. The train is blue and white, with a sleek, aerodynamic nose. The platform has large glass windows and a yellow safety line. The text "FACULTY ARTICLES" is overlaid in large, bold, yellow letters.

FACULTY ARTICLES

AERIAL ROBOTICS



**Mr. SANAM RATHNA
KUMAR**
Assistant Professor

The first digitally operated and programmable robot was invented by George Devol in 1954 and was ultimately called the Unimate. This later laid the foundations of the modern robotics industry. Robotics integrates many fields that deal with specific aspects of robotics.

For example, within mechanical engineering, the term robotics refers to the construction of the physical structures of a robots, while in computer science, robotics focuses on the study of robotic software. in its, including electrical, control, software, information, electronic, telecommunication, computer, mechatronic, materials, and biomedical engineering. The goal of robotics is to design machines that can help and assist humans.

The field of robotics develops machines that can automate tasks and do various jobs that a human might not be able to do. Robots can be used in many situations for many purposes, but today many are used in dangerous environments (including inspection of radioactive materials, bomb detection deactivation), manufacturing processes, or where humans cannot survive (e.g., in space, underwater, in high heat, and clean up and containment of hazardous materials and radiation). Robots can take any form, but some are made to resemble humans in appearance. This is claimed to help in the acceptance of robots in certain replicative behaviors that are usually performed by people. Such robots attempt to replicate walking, lifting, speech, cognition, or any other tasks mainly performed by a human.



VATRRAIN

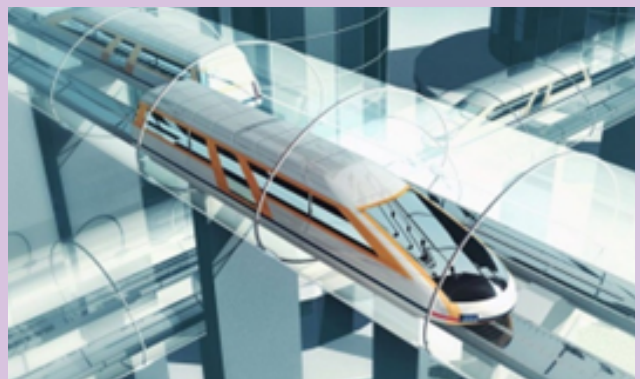


Mr. A SHIVA RAMAKRISHNA
Assistant Professor

The vactrain proper was invented by Robert H. Goddard as a freshman at Worcester Polytechnic Institute in the United States in 1904. Goddard subsequently refined the idea in a 1906 short story called "The High-Speed Bet" which was summarized and published in a Scientific American editorial in 1909 called "The Limit of Rapid Transit".

Esther, his wife, was granted a US patent for the vactrain in 1950, five years after his death. In 1909, Russian professor Boris Weinberg built the world's first model of his proposed version of the vactrain at Tomsk Polytechnic University. He later published a vactrain concept in 1914 in the book *Motion without Friction* (airless electric way). In 1955, Polish science-fiction writer Stanisław Lem in the novel *The Magellan Nebula* wrote about an intercontinental vactrain called "organic", which moved in a transparent tube at a speed higher than 1,666 km/h (1,035 mph). Later in April 1962, the vactrain appears in the story "Mercenary" by Mack Reynolds, where he mentions Vacuum Tube Transport in passing.

An interview with Robert Salter appeared in the Los Angeles Times (June 11, 1972). He discussed, in detail, the relative ease with which the U.S. government could build a tube shuttle system using technologies available at that time. Maglev being poorly developed at the time, proposed steel wheels. The chamber's door to the tube would be opened, and enough air admitted behind to accelerate the train into the tube. Gravity would further accelerate the departing train down to cruise level. Rising from cruise level, the arriving train would decelerate by compressing the rarefied air ahead of it, which would be vented. Pumps at the stations would make up for losses due to friction or air escaping around the edges of the train, the train itself



WEARABLE TECHNOLOGY TRENDS



**Mr. CH.SHRAVAN KUMAR
REDDY**
Assistant Professor

For the past two decades, wearable technology trends have evolved significantly. Smart wearable devices are now equipped with sensors and are often connected to the Internet and the cloud. That wasn't always the case, as the first Bluetooth headset was sold in the year 2000, bringing a lot of excitement.

In 2022, device usage is projected to grow to 1.1 billion users. Many of these devices will use 5G as their protocol of choice. According to Allied Market Research, the smartwatches segment is predicted to rise at the highest pace, with a CAGR of 19.9%. The health & sports segment led the wearable technology trends with over 39 % market share in 2015, and this is expected to continue during the forecast period (2015-2022). During the projected span, however, the entertainment market is expected to expand at the fastest rate of 35.7%.

In addition to health, sports, and entertainment, wearable technology has one even more important function: saving lives. Tim Cook presented a couple of videos he'd got from Apple Watch users at a recent Apple gathering. These consumers praised the Apple Watch for detecting their health issues and encouraging them to see a doctor, which was crucial to saving their lives.

Both Fitbit and Huami make watches with built-in thermometers that can monitor the increase in body temperature that also occurs as people get sick with viruses.

In addition to informing someone that they should consider keeping away from other individuals for a few days, the aggregated data gathered from these devices can aid epidemiologists in tracking the spread of a virus across communities and, in the future, may aid in the containment of outbreaks before they become global pandemics.



Articles



WATER SAVING MANAGEMENT IN AGRICULTURE USING SMART IOT



Ponugupati

Prithvi

19671A0235

Despite the perception people may have regarding the agricultural process, the reality is that today's agriculture industry is data-centered, precise, and smarter than ever. The rapid emergence of the Internet-of- Things (IoT) based technologies redesigned almost every industry including "smart agriculture" which moved the industry from statistical to quantitative approaches.

Such revolutionary changes are shaking the existing agriculture methods and creating new opportunities along a range of challenges. This article highlights the potential of wireless sensors and IoT in agriculture, as well as the challenges expected to be faced when integrating this technology with traditional farming practices. IoT devices and communication techniques associated with wireless sensors encountered in agriculture applications are analyzed in detail. What sensors are available for specific agriculture applications, like soil preparation, crop status, irrigation, insect, and pest detection are listed. How this technology helps the growers throughout the crop stages, from sowing to harvesting, packing, and transportation is explained. Furthermore, the use of unmanned aerial vehicles for crop surveillance and other favorable applications such as optimizing crop yield is considered in this article. State-of-the-art IoT-based architectures and platforms used

in agriculture are also highlighted wherever suitable. Finally, based on this thorough review, we identify current and future trends of IoT in agriculture and highlight potential research challenges. Agriculture is the main source of food production in our country. In India, agriculture contributes 18% of the country's Gross Domestic Product (GDP) which employs more than half of the total population. The Indian government has stressed and highlighted the need for innovations to be in above mentioned criteria in agriculture, thus seeking an indication of technology exposure and innovative implementation practices to enhance productivity. The productivity in agriculture, food security, erratic conditions in climates, and soil conditions require new ideas and innovations.

This largely depends on the irrigation system and current techniques in irrigation which helps to achieve more productivity per drop of water. Automation in irrigation systems helps farmers manage their work much easier and helps to make decisions even in the absence of farmers.



IoT, sensors, and smartphone tools are the technologies that help farmers know the status of their land, the amount of water needed, the temperature of the soil, humidity, weather conditions, and pH level. IoT is the term that was first coined by the Massachusetts Institute of Technology in the year 1999. Definitions focus on the technical aspects of IoT while the other is based on the applications and functionalities. A few definitions define IoT as "an extension of the current Internet to all objects that can communicate directly or indirectly with electronic equipment and connected to the Internet". Other defined as "a novel paradigm that is rapidly gaining ground in the scenario of modern wireless telecommunications. IoT is automating all the aspects of farming and agricultural methods to make the process more efficient and effective. This study aims to analyze recently developed IoT technologies in the agriculture and farming industries to present a summary of sensors, technologies, and sub-verticals such as water management and crop management.

MICROCONTROLLER BASED PRE-PROGRAMMED SUN TRACKING SOLAR PANEL



Narsapoor Sravani
19671A0228

Solar panel absorbs the energy from the Sun, convert it into electrical energy, and store the energy in a battery. For efficient usage of solar energy, the Solar panels should absorb energy to a maximum extent.

This can be done only if the panels are continuously placed towards the direction of the Sun. So, the solar panels should continuously rotate in the direction of the Sun. We will use LDRs (Light-dependent resistors) to sense the light and a servo motor to automatically rotate the solar panel in the direction of the sunlight. The advantage of this project is that the Solar panels will always follow the sunlight will always face the sun to get charged all the time and can provide the supply with the maximum power.



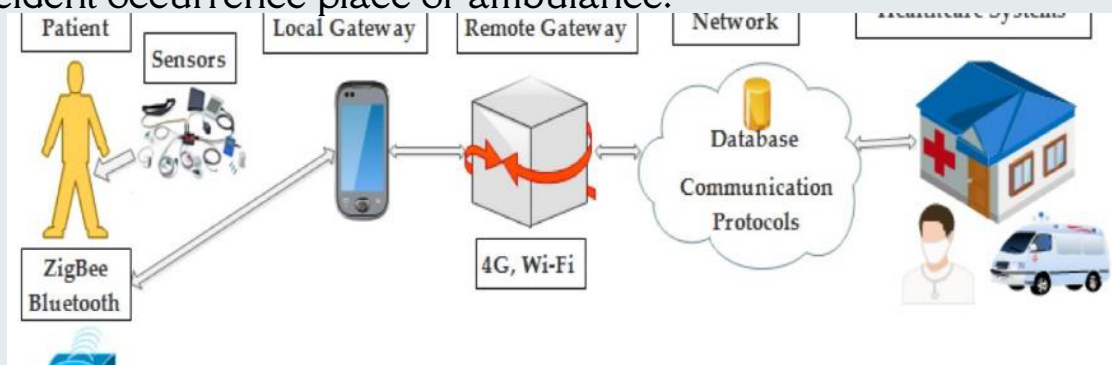
FINGERPRINT BASED MEDICAL INFORMATION SYSTEM AND ONLINE FIRST AID RECOMMENDER FOR EMERGENCY USING IOT



Kasam Kavya
19671A0221

The fingerprint Based Medical System introduces an efficient way to store patient's clinical records. It is used to determine the patient's past health record quickly and easily by using fingerprint recognition technology. The medical information system will enable a reliable electronic medical record system stored in the database.

To provide security to the information many MQTT algorithms are introduced. The sensitive medical information is protected by using IoT techniques and thus sending the information message to the doctor like blood group, BP value, glucose level, and cardiac pulmonary. This system replaces the conventional paper-based medical records with electronic medical record systems. This system also takes the current health details of the patients like temperature, respiratory rate, and heartbeat rate. By considering the past and present medical data of the emergency people, this system helps the doctors to decide the type of first aid to be given in emergencies like accident occurrence place or ambulance.



SMART TRASH RECEPTACLE MONITORING AND ALERTING MANAGEMENT SYSTEM



**Nagamalla
Harish**

In the present scenario, we see the garbage bins being overloaded and the garbage spills out resulting in pollution. The detection, monitoring, and management of waste is one of the primary problems of the present era.

The traditional way of monitoring the waste in waste bins is a complex, cumbersome process that takes more human effort, time, and cost and is not compatible with present-day technologies in any way. Hence our problem statement is to design a system based on a microcontroller using a GSM module for collecting garbage from a particular area whose garbage bins are overflowing with prior concern. This system monitors the garbage bins and informs about the level of garbage collected in the garbage bins via a text message.



VEHICLE MONITORING BASED ON LI-FI TECHONOLGY

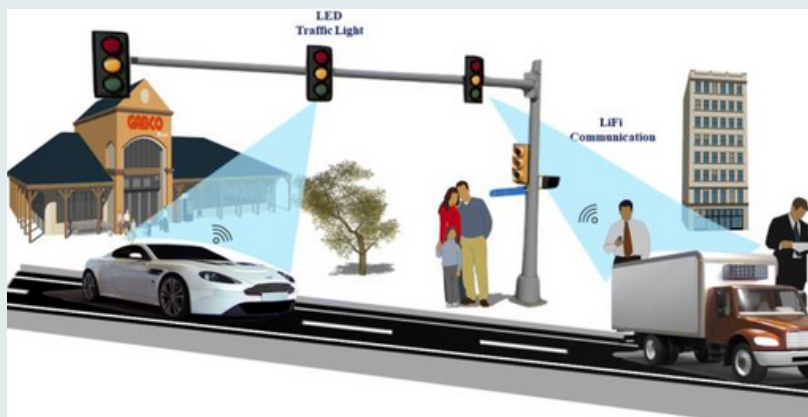


**BASAVA
RAJU**

20671A0201

Nowadays, traffic accident detection is becoming one of the interesting fields due to its tremendous application in intelligent transportation systems.

The main causes behind these road accidents are the lack of unskilled drivers, consuming alcohol while driving, speeding, and sleeping while driving. Plenty of solutions have been applied to prevent these road accidents. But most of them failed to prevent this. In this work, we present an advanced accident detection using LIFI technology. This work provides an intelligent system for accident prevention and detection for human life safety. That prevention part has various sensors like an eye blink sensor, an alcohol sensor, and an ultrasonic sensor. If the sensor detects whether the rider consumes alcohol or the distance between two vehicles is low then it sends that information to another vehicle that is going in front of it. So that they can be alert. And if the driver is sleeping while driving means then the eye blink sensor detects it and gives an alert to the driver.



PROGRAMS ORGANIZED

Workshop on

SCOPE OF JOBS FOR ELECTRICAL ENGINEERS

The program was conducted on 26th Oct 2021 in JBIETthe EEE Department in association with AEP certification. The 3rd and 4th year B.tech Students from the department of EEE have participated. The objectives and outcomes of the program are :

- Students are the best sources to bridge the gap between academia and industry. Thus Imparting industry-required skills to the student enables a definite transformation
- Students will be benchmarked on industry equivalent experience at the professional level by AEP certification so that they will be eligible to impart AEP certifications.
- Students will be enabled on the specific industry required skills such as industry domain-based software tools, area of disciplines, and area of expertise
- Students will be able to prepare and get ready for various jobs across industries.
- It is about transforming students at par with industry subject matter experts across the domains, areas of disciplines, and areas of expertise to fulfill industry skill requirements during academic enablement is the main motto of this workshop.
- About AEP Certification, it is an organization formed by a group of industry professionals, that offers a patent skills and experience benchmarking model called AEP Certification (Authorized Engineering Practitioner's Certification) for Engineering graduates and working professionals across streams through a customized curriculum designed by industry professionals.
-
- We collaborate with potential stakeholders with authorized industrial training backgrounds as Associate Representative Partners (ARPs) to impart and Execute AEP Certification and corresponding training on the programs installed by industries and professionals



Expert Lecture on

EXPERT LECTURE ELECTRIC TRACTION

The importance of Electric Traction is discussed in this session. The Speaker of session Dr. C. Nagamani presented the keynote address on “Electric Traction”.

Students have come to know about railways, how it works and even regarding research areas. For ensuring continuity and reliability of power supply for traction it is important that effective communication is to be maintained between the officials of Railway and Supply Authorities.

She inspired the audience by interacting on topics such as:

1. Mechanics of Train Movement and Features required for Traction Motors.
2. Power Circuit Diagram of EMU, Block diagram of AC Electric Locomotive.
3. The Existing Drive System of Electric Locomotive & Freight Locomotives.
4. Comparative Study of Operational Parameters of Various Railways & Future Research envisaged by RDSO.

This Expert Lecture is conducted with the motive of sharing the knowledge of Dr. Nagamani, Associate professor in EEE Department.

The overall organization and deliverance of the Expert Lecture was helpful and satisfied the participants. The objective of the Expert Lecture was achieved. The overall session benefited 53 Students.



Guest Lecture on **POWER SYSTEMS – LOAD FREQUENCY CONTROL**

Engineering has delivered the Lecture.

The course content delivered in the Guest Lecture is as follows:

The importance of Load Frequency Control is discussed in this session.

The Speaker of the session J. Giri presented the keynote address on **“Power Systems – Load Frequency Control”**. He discussed that Load frequency control of an interconnected power system means the interconnection of more than one control area through tie lines. Sudden load variation in any control area of an interconnected power system will lead to both frequency change and tie line power deviation.

He enlightened the students on topics such as :

- Load Frequency Control of Single area system.
- Load Frequency Control of Two area system.
- The effect of load frequency control on Generator, Motor and Governor.
- Different methods of Load Frequency Control.

The main goals of Load Frequency control that is to maintain the real frequency and the desired power output (megawatt) in the interconnected power system and to control the change in

This Guest Lecture is arranged with the motive of sharing the knowledge of Mr. J. Giri, who has a long years of experience in Power Systems. The overall organization and deliverance of the Guest Lecture was helpful and satisfied the participants.

The objective of the Guest Lecture was achieved. The overall session benefited 78 Students.

The image is a composite of two parts. On the left is a promotional poster for a guest lecture. The poster is for JB Institute of Engineering & Technology, UGC Autonomous, Department of EEE. It announces a 'Guest Lecture on POWER SYSTEMS' with the topic 'Load Frequency Control'. The speaker is Mr. J. Giri, a Resource Person. The event is in association with OHM Institute, Hyderabad, and is scheduled for 11-11-2021 at 10.30am in the Placement Seminar Hall. The poster also lists the roles of the Co-convenor, Convener & HOD, and Principal. On the right is a photograph of a classroom full of students sitting at desks, attending the lecture. A Google Maps overlay is visible on the photo, showing the location of Ranga Reddy, Telangana, India, with coordinates Lat 17.330091° and Long 78.298829°, and a timestamp of 11/11/21 11:42 AM.

JB INSTITUTE OF ENGINEERING & TECHNOLOGY
UGC Autonomous
(Accredited by NAAC & NBA)
Department of EEE

**Guest Lecture on
POWER SYSTEMS**
Topic: **Load Frequency Control**

IN ASSOCIATION WITH
**OHM INSTITUTE
HYDERABAD**

11-11-2021 10.30am
Venue: Placement Seminar Hall

Mr. J. GIRI
Resource Person
(M.Tech (IT) Karpur, AIR 102 in GATE-2005,
APJSCCL State First number in 2002)

Co-convenor Convener & HOD Principal

Ranga Reddy, Telangana, India
Amdapur X Road , Yenkapally, Rangareddy
Telangana 500075, India
Lat 17.330091°
Long 78.298829°
11/11/21 11:42 AM

Webinar on

WHAT NEXT ?

Department of EEE organized One day webinar on *What Next?*. About 80 members from the EEE department participated in this Webinar. The Session was best source to bridge the gap between Academia and Industry. From the Session, students have learned how to transform from their basics to professional level in Various Domains.. The Session was handled by expert from Mr.N.Sriram, Operations Head-HIEE, Hyderabad- India.

LIVE webinar

What Next ?

Mr. N. Sriram Nanduri

3:30 AM

August 8th 2021

970 24465

What could be going on your mind.... What is more Important What is the one you need to act on first.

HEALTH
FRIENDS
TIME
WORK
CAREER
FAMILY
Further Education

SKILL THE RECRUITERS LOOK FOR....

- ❖ Commercial awareness (or business acumen) This is about knowing how a business or industry works and what makes a company tick. ...
- ❖ Communication. ...
- ❖ Teamwork. ...
- ❖ Negotiation and Persuasion. ...
- ❖ Problem solving. ...
- ❖ Leadership. ...
- ❖ Organization. ...
- ❖ Perseverance and motivation.

Activate Window

Industrial Lecture on

FUTURE TRENDS IN ELECTRICAL ENGINEERING

Mr. Md. Akber Ansari, Chief Consultant at Electromotion Technologies, and Mr. Md. Fahad, Training Head at Electromotion together have delivered the Lecture.

The course content delivered in the Industrial Lecture is as follows:

The importance of Electrical Engineering and its trends & scope is discussed in this session.

The Speaker of the session Md. Akber Ansari presented the keynote address on “Future Trends in Electrical Engineering”. He discussed about what are the Opportunities available for an Electrical Engineer after Graduation. He also discussed the Companies that provide Job Opportunities for Electrical Engineers. The Speaker of the session Md. Fahad presented the Operation of the PLC Kit.

This Industrial Lecture is arranged with the motive of sharing the knowledge of Mr. Md. Akber Ansari, who has a long years of experience in the Electrical domain. The overall organization and deliverance of the Industrial Lecture were helpful and satisfied the participants.

The objective of the Industrial Lecture was achieved. The overall session benefited 70 Students.



Guest Lecture on **BEST PRACTICES IN OPERATION AND MAINTENANCE OF SOLAR POWER PLANTS**

Mr. Ramchander Nirudi, Associate Professor and Consultant of Solar PV Projects from B.V. Raju Institute of Engineering and Technology delivered the Lecture.

The course content delivered in the Guest Lecture is as follows:

The importance of Operation and maintenance of Solar Plants is discussed in this session.

The Speaker of the session M. Ramchander Nirudi presented the keynote address on “Best Practices in Operation and Maintenance of Solar Power Plants”. He discussed the major elements of maintenance in Solar Plants with the best suitable real examples which are essential for the understanding of efficient Solar Plant operation. He projected a clear understanding of the importance of a thermal image camera to find out the thermal spots of Solar Cells to improve the efficiency of Solar Panels.

He inspired the audience by lively interacting on topics such as:

- ▣ Solar Photovoltaic Electricity Generation
- ▣ Types of Maintenance of Solar Power Plants
- ▣ Top Solar Data Analytics Companies of 2020 in India.
- ▣ Major Elements of Photovoltaic Operation and Maintenance.
- ▣ In-House versus Outsource Photovoltaic Operation & Maintenance.
- ▣ Operation, Maintenance, and Troubleshooting of Solar Plants.

He discussed equipment failures in inverters. He emphasized career opportunities and growth in the solar sector. He projected on comprehending the theoretical concepts and relating to the practical aspects of Solar Plants.

Also, feedback about the session was collected from all the participants to improve the sessions that will be conducted shortly. The sample details collected from the participants and enclosed.

This Guest Lecture is arranged with the motive of sharing the knowledge and practical experience of Mr. Ramchander Nirudi, who has a long years of experience in solar projects. The overall organization and deliverance of the Guest Lecture were helpful and satisfied the participants.

The objective of the Guest Lecture was achieved. The overall session discussion benefited the faculties, Research Scholars, and Students, who were present 165.

This Guest Lecture would help the participants in the classes in an effective way and also it would help them to do their implementation in research/project work.

BEST PRACTICES IN OPERATION AND MAINTENANCE OF SOLAR POWER PLANTS PHOTOS

Power Generation Sector

The generation capacity has more than doubled since 2013 with increased participation from the private sector.

Installed Capacity

Renewable Capacity

Generation Mix FY19

Generation Mix FY20

India ranks 5th in terms of installed power generation capacity in the world.

The growth has been fueled by large private investment in generation from 2013 to FY19 to 140,000 MW.

Electricity consumption per capita is at 1,100 kWh, which is less than 50% of global average.

Total GHG emissions from electricity production is 2,254 MtCO₂e.

REGISTRATION DETAILS

The registration is free for the Faculty members from AICTE approved Institutes, Research Scholars, Under & Post Graduate Students. The number of participants is limited to 100 and the selection is based on first come - first serve basis. E-Certificate will be issued to all participants who are attending the session and submitting the feedback form.

Registration Link:
<https://www.jbce21ce@gmail.com>

WHATSAPP GROUP
<https://chat.whatsapp.com/Share7c33703m9003m702g>

LAST DATE FOR REGISTRATION:
 18 September, 2021

VIRTUAL PRESENTATION:

Download will be provided one day before the event.

CONTENT

- Planning of Operation & Maintenance Schedule
- Preventive Maintenance Check List
- PS Modules and Inverters Maintenance
- Solar Monitoring Devices and Services
- DCB Preparation

CHIEF PATRON
 Dr. J. V. Krishna Rao,
 Secretary,
 J. B. Educational Society.

PATRONS
 Major General Dr. L. L. Shinde, DATTARAJ, CEO, JBCE
 &
 Dr. P. C. Krishnakumary, Principal, JBET

CONFERENCE
 Dr. J. B. Desai, Deputy, Assistant Professor & Head of the Department, JBET, JBET.

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 Dr. J. B. Desai, Assistant Professor & Head of the Department, JBET.

JB

J.B. Institute of Engineering & Technology (VOC Autonomous)
 Bhaskar Nagar,
 Madhav Nagar, Hyderabad,
 Telangana-500075.

Pie Chart showing the Power Generation Sector

Cleaning & Physical Inspection

- Regular cleaning of the modules
- Online monitoring through mobile App/SCADA
- Physical inspection at regular intervals

Cleaning & Physical Inspection of Solar Modules

Activate Windows
 Go to Settings to activate Windows.

INDUSTRIAL VISIT TO NRSC-ISRO



An overview of the Visit is as follows: The National Remote Sensing Centre (NRSC) at Hyderabad is responsible for remote sensing satellite data acquisition and processing, data dissemination, aerial remote sensing, and decision support for disaster management. NRSC has a data reception station at Shadnagar near Hyderabad for acquiring data from Indian remote sensing satellites as well as others. NRSC Ground station at Shadnagar acquires Earth Observation data from Indian remote-sensing satellites as well as from different foreign satellites. NRSC is also engaged in executing remote sensing application projects in collaboration with the users.

The Aerial Services and Digital Mapping (ASDM) Area provides end-to-end Aerial Remote Sensing services and value-added solutions for various large-scale applications like aerial photography and digital mapping, infrastructure planning, scanner surveys, aeromagnetic surveys, large-scale base maps, topographic and cadastral level mapping, etc. Some of the Satellites launched by India are: Astro sat Ocean Sat Polar Satellite Launch Vehicle (PSLV) Rohini Satellite Aryabhata Satellite Satellite Launch Vehicle

- Augmented satellite launch vehicle (ASLV)
- Mangalyaan
- chandrayaan

It includes detailed videos of the physical design and launching of satellites like Geosynchronous Satellite launch Vehicle (GSLV) and an exhibition of satellite models that further enhance students' knowledge towards future projects. The overall visit was helpful and satisfied the participants



Industrial Visit To National Remote Sensing Centre (NRSC) Jeedimetla, 2022





NAME TO FAME



Congratulations!



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CHANDRAGIRI SRIJA
19675A0205



AKIREDDY SAI KIRAN
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NAVYA BHUSHANAGARI
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