

TECHNICAL
MAGAZINE



आविष्कार

Enlightening Inventions

Sept 2022



MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Vision

To produce technically competent human resource for electrical and electronics industry with high moral and ethical values.

Mission

To ensure transformational impact on learning community and modernization in industry by providing quality education with orientation towards research and higher education, imbining the students with moral and ethical values.

M1. To emphasize quality education by imparting highest quality teaching in a conducive learning environment for the students to meet dynamic industry and global challenges. This shall enable us to be strong provider of skilled human capital to the industry, both in core and software sectors.

M2. To develop state of the art classrooms, seminar hall and modernized laboratory. All the laboratory experiments which are normally performed with the help of hardware equipment shall be backed up and boot strapped with the software experiments.

M3. To develop a strong centre of excellence for technical education and research activities thereby promoting a creative environment for the students to address global challenges and excel at all levels.

M4. Inculcating the spirit of team work, innovation, entrepreneurship and motivate the students to pursue higher education for their overall development.

M5. Enable students to be competent professionals with industrial aptitude ready to face the challenges due to globalization like energy conservation, green revolution.

M6. To enhance the position of EEE department as one of the top ranked teaching and reserch department in MAIT, GGSIPU and subsequently in India.

M7. To impart moral and ethical values and interpersonal skills to students by providing personal guidance and career counselling by our experienced faculty and staff.

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
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 the public health and safety, and the cultural, societal, and environmental considerations.
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.
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.
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 professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
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.

Program Educational Objectives (PEO).

PEO1: To prepare students to excel in Electrical and Electronics Engineering profession by providing sound theoretical knowledge, practical experience, industrial training and all round development.

PEO2: Our graduates will apply their knowledge-base and skills acquired for analysis, identification, problem formulation and design/development to solve real life engineering problems with orientation on industrial sector.

PEO3: To provide necessary personality skill development courses and software skills so as to face the challenges posed by core industries and software companies.

PEO4: Our graduates will have the necessary professional skills, high ethical standards, effective oral and written communication, and team building activities in diverse and multi-disciplinary settings, to progress in their professional endeavors, also to develop research innovation, abilities.

PEO5: Exhibit professionalism by displaying competence & leadership with commitment and keep in pace with engineering developments.

Program Specific Outcome (PSO).

PSO 01: Professional skills: The ability to understand and analyze the fundamental concepts of electrical and electronics engineering and their applications in the areas like, mathematics, applied sciences, power system, control engineering, electrical machines, power electronics, communication, microcontrollers and signal processing.

PSO 02: Problem Solving Skills: The ability to apply their knowledge for analysis, identification, problem formulation and design/development to solve real life electrical and electronics engineering problems.

PSO 03: Successful career: The ability to exhibit professionalism by inculcating the spirit of team work, innovation, entrepreneurship and to motivate the students to pursue higher education.



Technical Magazine Committee

Chief-Editor:

Prof. Dr. Rajveer Mittal

Editor:

Ms. Poonam Juneja

Student-Coordinator:

- Abhay Kumar Upadhyay
- Anisha Kumari
- Bharti
- Sarthak Rawat
- Moksh Gupta
- Saksham Aggarwal

Message From Founder and Chief Advisor's Desk



Dr. Nand Kishore Garg
Founder & Chief Advisor, MATES

" I am extremely happy to release the LIVE WIRE Technical Magazine of the Electrical and Electronics Engineering Department, MAIT for the session between August 2021- September 2022.

This magazine, I understand has been designed to provide a broad range of information that focuses on the application of current technologies, research, developments through the latest technology innovations through the existing students and faculty members, and their practical explanations through industry experts.

I acknowledge the efforts of Prof. (Dr.) Rajveer Mittal, Head of the Department, and his Editorial Board Members in getting the magazine published.

I wish all the faculty members success and zeal to continuously work for the betterment of society. "

Message From Chairman's Desk



Sh. Vineet Kumar Gupta
Chairman, MATES

" I am gratified to know that the Department of Electrical and Electronics Engineering, MAIT has taken an initiative to publish the Technical Magazine in the month of September 2021.

This is productive as well as a great platform for the students, researchers, faculty members and industry experts to disseminate achievements in research and developments in computer science and technology.

I acknowledge the efforts of Prof. (Dr.) Rajveer Mittal, HOD. EEE, the Editorial Team, faculty members and the students of the departments for their efforts in publishing the Technical Magazine.

I also applaud the coordination and efforts by the editorial team to bring up the issue.

I wish them all a great success."

Message From Vice Chairman's Desk



Prof. (Dr.) M.L. Goyal
Vice Chairman(Academics), MATES

" I am very happy that the Department of Electrical and Electronics Engineering, MAIT is releasing its Technical Magazine to commemorate technical publications and articles of faculties, Industry experts, alumni, and students for the academic year

2021-2022.

This Technical Magazine is a forum that could aptly be used to record the technical articles and research papers published by the students and faculty members. I am sure that this magazine will be informative and resourceful.

I owe my hearty appreciation to Prof. (Dr.) Rajveer Mittal, Head of the Department EEE, and her team for their sincere efforts to make the release of this magazine a reality. I wish them "The Very Best" in all their future endeavors. "

Message From Director's Desk



Prof. (Dr.) Neelam Sharma
Director, MAIT

" It gives me immense pleasure to know that a LIVE WIRE Magazine September 2021 is being published by the Department of Electrical and Electronics Engineering, MAIT. It is a platform to combine the efforts of Faculty, students and the editorial team to publish their technical work going on in the department.

Industrial and productive technical material forming the contents of the magazine will definitely be a developing a tool to the readers.

I applaud the efforts of Prof. (Dr.) Rajveer Mittal, Head of the Department EEE, Editorial team members and Co-ordinators of the team to publish this issue. I wish them success for future publications. "

Message From Head Of The Department



Prof.(Dr.)Rajveer Mittal
Head of Department (EEE)

"म दुनिया में कहीं भी रहे पर यह सत्य है कि हम वास्तविक दुनिया में बड़े हुए हैं हमारा वास्तविकता से सामना वास्तव में ही हुआ है... कपड़ों में सलवटे नापड़ने देना और रिश्तों में औपचारिकताका पालन करना है ऐसा हमें जमा ही नहीं ... सुबह का खाना और रात का खाना इसके सिवा टिफिन क्या था हमें मालूम ही नहीं... हम अपने नसीब को दोष नहीं देते... जो जी रहे हैं वह आनंद से जी रहे हैं और यही सोचते हैं... और यही सोच हमें जीने में मदद कर रही है... जो जीवन हमने जिया... उसकी वर्तमान से तुलना हो ही नहीं सकती... हम अच्छे थे या बुरे थे नहीं मालूम पर हमारा भी एक जमाना था और सबसे महत्वपूर्ण आज निसंकोच , हृदय के गहन तलसे अपने साक्षात देवी- देवता तुल्य, प्रातः स्मरणीय माताजी पिताजी भाई एवं बहन को कहना चाहता हूं कि मैं आपके अतुल्य लाड , प्यार , आशीर्वाद ,लालन-पालन व् दिए संस्कारों का ऋणी हूँ और सदा रहूंगा । खुद ही स्कूल जाना पड़ता था क्योंकि साइकिल बस से भेजने की रीत नहीं थी, स्कूल भेजने के बाद कुछ अच्छा बुरा होगा ऐसा हमारे मां-बाप कभी सोचते भी नहीं थे..."



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FACULTY CORNER



AUTONOMOUS UNDER WATER VEHICLE

Ms. Supriya Sharma, Asst. Professor, EEE
Department

An autonomous underwater vehicle (AUV) is a robot that travels underwater without requiring input from an operator. AUVs are a smaller subset of the wider class of underwater systems known as unmanned underwater vehicles, a classification that includes non-autonomous remotely operated underwater vehicles (ROVs) – controlled and powered from the surface by an operator/pilot via an umbilical or using remote control. An AUV is more frequently referred to as an unmanned underwater vehicle in military contexts (UUV). AUVs include underwater gliders as a subtype. The first AUV was developed at the Applied Physics Laboratory at the University of Washington as early as 1957 by Stan Murphy, Bob Francois and later on, Terry Ewart. The "Special Purpose Underwater Research Vehicle", or SPURV, was used to study diffusion, acoustic transmission, and submarine wakes. Other early AUVs were developed at the Massachusetts Institute of Technology in the 1970s. One of these is on display in the Hart Nautical Gallery in MIT. At the same time, AUVs were also developed in the Soviet Union.

The ocean is an environment that is saturated with seawater. Seawater has a high degree of viscosity, making it more difficult for the ocean to move than the atmosphere. The ocean's environment, where air pressure rises by one per ten metres of depth, is another amazing feature. When a result, as objects are destroyed, the water pressure increases to a point that it may be felt in the deep sea.

So many factors come in account in designing AUVs. It includes Solid pressure vessels to contain the electronics underwater as well handling the pressure from water. It contains sensors some of which are compasses, depth sensors, side-scan and other sonars, magnetometers, thermistors and conductivity probes. Some AUVs are outfitted with biological sensors including fluorometers (also known as chlorophyll sensors), turbidity sensors, and sensors to measure pH, and amounts of dissolved oxygen. Some of the uses of AUVs are for research work, commercial work like for oil and gas industries uses AUVs to make detailed maps of the seafloor before they start building subsea infrastructure; pipelines and subsea completions can be installed in the most cost-effective manner with minimum disruption to the environment, air crash investigations, military applications etc.



AERONAUTICAL COMMUNICATIONS

Ms. Poonam Juneja, Asst. Professor, EEE
Department

A conversation between two or more airplanes is referred to as aviation communication. The design of aircraft makes it exceedingly challenging for them to see anything beyond what is right in front of them. Aircraft can effectively connect with the required employees using communication techniques like wireless radio since safety is the aviation industry's top priority. Since the aviation sector is global, many different languages are used. The international Civil Aviation Organization (ICAO) has determined that English is the aviation industry's official language. Pilots are required to take an English proficiency exam since the business recognizes that some pilots may not be native English speakers. In the early days of flying, it was believed that the sky was too vast and empty for two planes to collide. However, the catastrophic accident of two aircraft over the Grand Canyon in 1956 led to the establishment of the Federal Aviation Administration (FAA). The Jet Age saw a boom in aviation, necessitating the development of communication technology. To communicate with pilots in the air, ground controls employed visual aids, which was once thought to be a highly challenging operation. Pilots could connect with people on the ground thanks to the development of portable radios that were tiny enough to be stored in aircraft. Pilots could then communicate both air-to-air and air-to-ground thanks to subsequent advances. Today, a lot of different methods are used in aviation communication. Modern radio, GPS, Internet, and video systems are all standard equipment on airplanes. Air-to-ground communication greatly improved with the invention of radar in the middle of the 1930s. Radar may be used to follow aircraft in the sky and detect their location, direction, speed, and even kind. This made it possible for pilot navigational aids and better air traffic control. It was then widely used during World War 2 for targeting for bombers. Two different radar beams might be pointed in the direction of Germany from radar sites along the British coast. An aircraft might track one radar signal until it crossed with the other, at which point it would know to drop bombs, by aligning the two radar beams to intersect over the targeted target, such as a town or industrial. Currently aviation communication is used to reduce the risk of mishappenings by telling the pilots the latest weather conditions or the availability of runways. Sometimes flights are even redirected to some other airports. It has saved many lives till date and the engineers are still trying to improve the current technology to meet the future needs. Aviation has truly been the forefront of innovation to become one of the safest and most reliable modes of transportation in the world today and a major part of this is because of the communication system which helps in planning and getting ready for every situation.



RENEWABLE ENERGY

Mr. Jitender Kumar, Assistant Professor, EEE
Department

One-third of the world's greenhouse gas emissions are attributable to the sources used to produce power, such as coal, oil, and natural gas. Elevating the level of living requires the provision of cleaner and more dependable power. India's need for energy is rising as a result of the country's current economic growth initiatives. An essential condition for a nation's economy to grow is the availability of growing amounts of energy. With the aim of providing energy across the nation, the National Electricity Plan [NEP] defined by the Ministry of Power (MoP) has created a thorough 10-year action plan. Additionally, it has created a separate plan to guarantee that power is given to the public effectively and affordably. In the World Resource Institute's 2017 report, India came in fourth place, after China (26.83%), the USA (14.36%), and the EU (9.66%), with almost 6.65% of the world's total carbon emissions. The natural equilibrium of the planet may potentially shift as a result of climate change. The United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement have both received submissions of intended national voluntarily determined contributions (INDCs). The latter had hoped to succeed in keeping the increase in the earth's temperature to far below 2 °C. The peak of the world's power demand is expected to occur around 2030, according to the World Energy Council.

One of the world's biggest users of coal, India imports expensive fossil fuel. Coal and oil together provide almost 74% of the world's energy needs. India imported 171 million tons of coal in 2013–2014, 215 million tons in 2014–2015, 207 million tons in 2015–2016, 195 million tons in 2016–2017, and 213 million tons in 2017–2018, according to research from the Centre for Monitoring Indian Economy. Therefore, it is crucial to develop other means of producing power.

In order to achieve sustainable growth and avert catastrophic climate change, the nation will quickly shift to renewable energy technology on a worldwide scale. In order to secure sustainable energy with reduced emissions, renewable energy sources are essential. Renewable energy technologies are already acknowledged as having the potential to greatly meet the demand for power while lowering emissions.

The nation has created a sustainable route for its energy supply in recent years. Citizens have been encouraged to save energy by using more hydropower, solar, wind, biomass, and waste energy sources. There is no doubt that clean energy is less hazardous and frequently less expensive. By 2022, India wants to produce 175 GW of renewable energy, of which 5 GW will come from small hydropower facilities, 10 GW from biopower, 100 GW from solar energy, and 60 GW from wind power. More than 270 GW has been pledged by investors, which is a huge increase over the lofty goals.

STUDENTS CORNER

HUMAN-ROBOT INTERACTION

Harsh Baisoya (05514804920), Abhay kumar Upadhyay (00314804920) Student,
Department of Electrical & Electronics Engg.

The field of Human-Robot Interaction (HRI) has recently attracted a lot of interest from researchers, scientists, technological businesses, and the media. Due to this interest, it would be advantageous to give an overview of HRI to act as a tutorial for those outside the field and to encourage debate on a unifying vision of HRI inside the field. This review's objectives are to give a cohesive treatment of HRI-related issues, pinpoint major topics, and talk about difficulties that will probably have an immediate impact on the field. Although the review has a survey-style format, it is necessary to leave out numerous excellent, fascinating, and significant pieces in order to give a coherent HR. We tell the HRI tale from several angles and highlight commonalities across the cross-applications rather than attempting to survey every paper. The papers submitted as part of the applications will include a good representation of the universities, government initiatives, industry labs, and nations that support HRI, as well as a representation of the disciplines that support the field, such as human factors, robotics, cognitive psychology, and design. A human and a robot may communicate in a variety of ways, but how close or far apart they are from one another greatly affects how they communicate. It is helpful to distinguish between applications that demand mobility, physical manipulation, or social engagement within these broad categories. Teleoperation or supervisory control are terms frequently used to describe remote engagement with mobile robots, and telemanipulation is frequently used to describe remote interaction with a real-world manipulator. A robot assistant may be used for prox-image interaction with mobile robots, while a physical interface may be used for proximity engagement. Social, emotional, and cognitive aspects of interaction are all included in social interaction. Humans and robots engage in social interaction as partners or peers. Importantly, rather than being remote, social interactions with robots seem to be close by. We merely provide a summary of a large amount of research on social interactions; a more thorough examination of this crucial subject will be left to future work. Here, we provide an overview of contemporary HRI.

With the intention of recognising significant technological and scientific advancements that have enabled HRI to grow as a field of its own, we start by outlining significant improvements in fields that are relevant to HRI. We contend that HRI represents a new area of scientific inquiry rather than merely a rephrasing and reformulation of earlier work. We pinpoint pivotal occasions that mark the formation of HRI as a field to back up this claim. Despite the fact that we frame the evaluation from a designer's perspective, work in the field necessitates significant interdisciplinary fusions from numerous scientific and engineering fields. We describe the HRI problem after reviewing the major facets of the development of HRI as a field, with a focus on the interactional characteristics that a designer may control. We then go on to discuss the main application areas for modern HRI. Many of these issues are very difficult to solve and have significant societal repercussions. We classify application domains into the two previously indicated broad categories of remote and proximity contacts, and we select significant, eminent, or thought-provoking work within these two categories. Then, we go on to discuss universally applicable solution ideas and interaction- related obstacle issues. Following a quick summary of the review, we briefly mention relevant work from various disciplines that involves humans and machines interacting. The ability to recognise sensory cues has evolved in human senses. Beyond our perception, they are essential to how we process emotions, learn, and understand. They are what shape our daily lives and can be sparked by aesthetics to lay the groundwork for how we interact with one another and the world around us. Given their senses, robots can engage in Human-Robot Interaction (HRI) with both people and their surroundings. They may be able to provide human traits, which in turn may improve the attraction and acceptability of interacting with technology. People still don't appear to trust and accept robots, nevertheless, for a variety of reasons. The capacity to tolerate the possible hazards involved in cooperating with an entity, such as a robot, is how trust is conveyed. The decision to trust a robot might take on other dimensions even though it is a crucial component in developing connections with robots. This research investigates the affects of visual design strategies on the human ability to trust robots to start to understand how to create trust with robots and reverse the negative mindset. Beyond their more cognitive capabilities, robots have a unique opportunity to develop their capacity for empathy, compassion, and social awareness. We investigated participants' capacity for and acceptance of trusting the Cabot Uo3 robot by conducting an international online survey. A variety of visual inquiries that interacted with the robot's facial screen and questioned participants' level of trust in the machine were shown to them. Several questions were designed to place participants in circumstances where they had to decide whether or not to believe a robot's responses based only on appearance. We did this by adjusting various aspects of the robot's facial and chest screens, which affected how people interacted with the robot.

Our capacity to trust robots has never been more crucial in a world where it is growing more prevalent. A fuller understanding of how design elements and their aesthetic effect may trigger what emotive processes is essential since the physical look of a robot significantly affects our judgments of trust. Robots have a remarkable ability to help people work together as a team, but a lack of faith in the robot could lead to its being used ineffectively or not at all (Floyd, Drinkwater & Aha, 2014). According to Barnes & Jentsch (2010), the ability of humans and robots to cooperate and adapt to one another is crucial for a successful relationship. This can arise from the shape and construction of the robot, which in turn influences societal norms. Additionally, a robot's morphology might impact its usability and attractiveness (Fong, Nourbakhsh & Dautenhahn, 2003). The study discussed in this paper looks at how participants' level of trust in robots can be increased. Participants were shown various robot visualisations (of the robot's face and chest) and asked to write down their thoughts on each one as well as whether or not they trusted the robot. This made it possible for the researchers to look into how the aesthetic arrangement of design aspects can affect how each robot can be trusted. We were interested in better understanding how we design for the fundamental principles of aesthetic order in human-robotic interaction by using different design elements (i.e., colour, blurriness, and tone). We predict that uncertainty in and between the visualisations will strongly influence a participant's desire to accept the robot (i.e., The cohesiveness of messages, positive and balanced stimuli, non-invasive hues, etc.). (i.e., The cohesion of messages, positive and balanced stimuli, non-invasive colours, etc.). This research demonstrates not only the impact of dangers and uncertainties caused by the visualisations on the human-robot interaction but also the potential of robot aesthetics to initiate a trusting connection.

PATENTS CORNER

Design of a Hybrid Renewable Energy Operated Commercial Establishment 2021 International Conference IEEE Xplore

*Sakshi Dawar (08014804918); Nikhil Dubey (05414804918); Preyansh Jain (06414804918); Anant
Kumar (05814804919); Mr. Ravi Sharma*

March 2022

Abstract:

Industrial sector is the major contributor in the rapidly increasing energy consumption demand in correlation with increasing technological advances. Grid connected hybrid renewable energy systems (HRESs) are the effective solution for commercial or industrial establishments due to their long-term cost effectiveness, elimination of grid supply dependability and decreased Environmental impact. This paper presents the design of a renewable energy power system with optimized load minimization for a commercial establishment with provision of surplus energy production that can be utilized to claim monetary incentives offered by Net-Metering or for other high-powered applications. The paper considers a typical office in New Delhi, India to develop a techno-economic profile. The proposed model is novel in its combination and coordination of multiple generation systems, i.e., Photovoltaic (PV) panels, Semi-Transparent Solar System, Wind energy conversion system (WECS), Battery energy storage system (BESS) in conjunction with load minimization using HVAC and innovative IoT application. HOMER (Hybrid Optimization Model for Electric Renewable) was used in combination with MATLAB/Simulink for economic analysis, size optimization, technical evaluation, and simulation of the model.

Intelligent Waste Management for Smart Cities
International Conference on Industrial Electronics Research and
Applications (ICIARA)

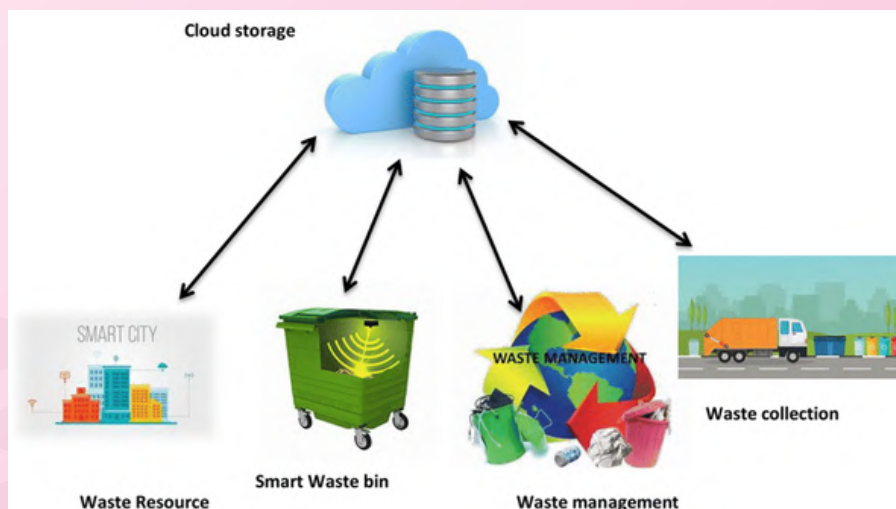
IEEE Xplore

Priyanjali Pratap Singh (03714804917)

March 2022

Abstract:

With accelerated technology development, much focus has shifted towards a green economy, concentrating on sustainability, recycling, and reuse. A smart waste collection is the center of a smart waste management system and an intelligent bin is a pivot for any step towards the development of an Integrated Platform for Waste Management. This paper presents an IoT-based smart dustbin that is capable of integrating with contemporary society as well as catering to future smart cities. The proposed implementation presents an end-to-end scalable solution for disposal as well as collection and transfer. Beyond just bin level detection, the smart bin can also detect odor and flames inside the bin, ensure bin safety, consider the weight capacity of the container, and provide a non-touch interface for disposal to ensure hygiene. The proposed system resolves the nuisances of spilling garbage bins, ill-maintained bins, untimely and unorganized collection. Insightful data is collected to facilitate future ventures. The paper also attempts to highlight some of the prevailing hurdles in devising and achieving sustainable development plans.



Performance Analysis of Boost Converters in a PV System with P and O based MPPT Controller connected to a Battery Backup and Grid

IEEE Delhi Section Conference (DELCON)

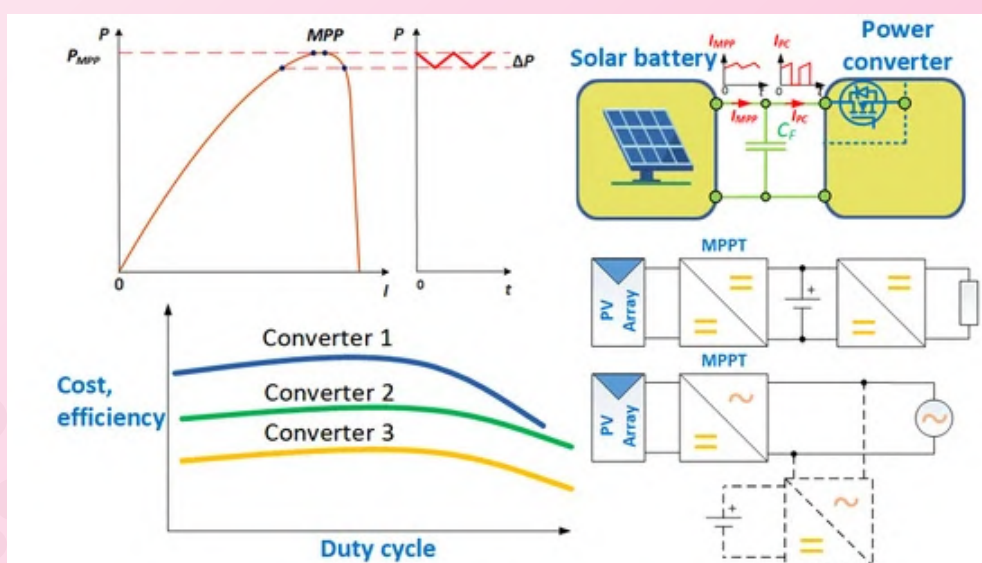
IEEE Xplore

Harsh Kaushik (04014804919)

April 2022

Abstract:

In this paper, a comparative analysis of the performance of three different DC/DC converter topology namely, conventional, quadratic and cascaded boost converter for the Solar PV system is compared, which operates with a Perturb and Observe MPPT-based controller. Booster topology is used to increase the solar power of the solar PV module. Cascaded boost converters offer a higher level of voltage conversion and more efficient values, compared to standard upgrades. This MPPT algorithm generates a high power point in the PV Panel module associated with continuous load resistance under various pairs of solar radiation and ambient temperature. To represent all three converters, the MATLAB / Simulink software is used to simulate circuits. The results are compared to evaluate the full performance of each case of the Solar PV system.



Hybrid Image Processing Device as Wearable Aide for Visually Impaired
8th International Conference on Advanced Computing and Communication
Systems (ICACCS)

IEEE Xplore

Harsh Kaushik (04014804919)

June 2022

Abstract:

With the advent of technology and algorithms in image processing, many wearable aides are available in the market, and researchers across the globe are developing new solutions. The existing solutions and products fail to provide an economically viable and single solution to the problem of visually impaired people. This study introduces Aide, a novel system amalgamating optimized computer vision algorithms and wearable IoT devices to convert the information extracted from the camera mounted on the user to audio-based signals for assisted mobility. The proposed system has three user modes: indoor, outdoor, and hybrid, which can be modified using the buttons provided on the wearable device. The indoor mode can be used for object detection and classification to increase the accessibility of the objects inside a confined space, and the outdoor mode will provide the user with enhanced mobility and directional sense based on the highlighted path captured by the mounted camera. The hybrid model combines both the features of indoor and outdoor modes, which will detect objects and improve mobility simultaneously. The proposed model is optimized to work in a computationally efficient environment with an at par efficiency and accuracy as the state-of-art and costly market alternatives.

Optimised Smart AI Surveillance in Quantum Computing Age
7th International conference for Convergence in Technology (I2CT)

IEEE Xplore

Anant Gangwar (01014804918), Anant upadhyay (01114804918), Aakash singh Azad (00914807819)

July 2022

Abstract:

With the advancements in the digital world, crime investigations & video surveillance has also become smart using Artificial Intelligence and IoT like technologies. And the security of the sensitive information transferred between IoT devices only relies on the most robust available classical cryptographic methods. But the prime concern involves the easy breaking of the classical approaches of cryptography soon with the relentless advancement of technology. Thereby, the research mainly focuses on two areas. First, optimising intelligent video surveillance for crime investigations by implementing the ideology of the blockchain, and Deep Learning Neural Networks algorithms for reduced processing yet faster and accurate results. Second, implementation of Quantum Cryptography for better future-proofing and further research for future improvements. The discussion of results shows the optimal usability of deploying this idea and future scopes for improved data security.



Cirrhosis Disease Classification by using Polynomial Feature and XGBoosting

13th International conference on computing communication and network Technologies

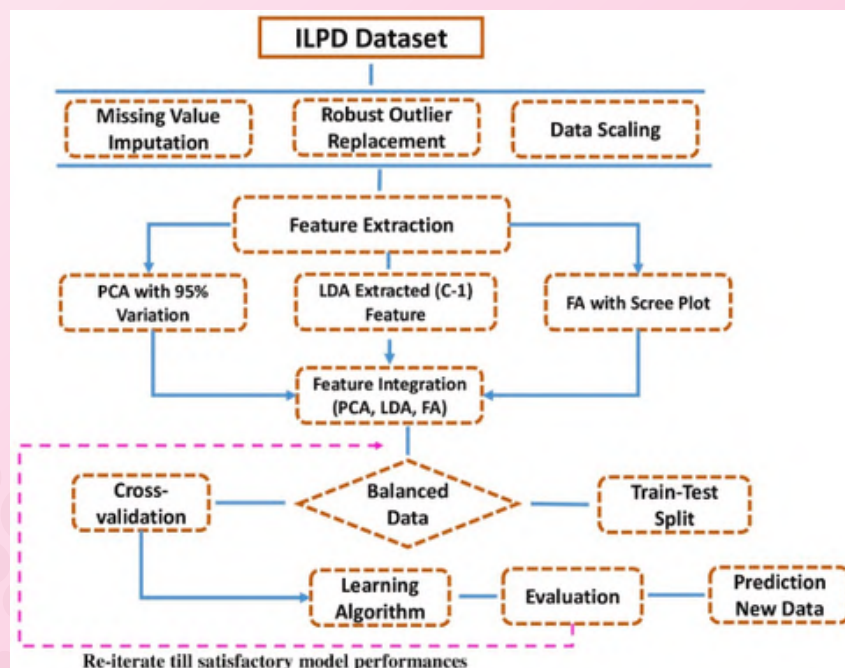
IEEE Xplore

Agam Goyal (00196404917), Almaas Zafar (10514804919), Manav Kumar (09114804919)

December 2022

Abstract:

Every year, over 2.8% of adult fatalities in India are caused by liver diseases. Discovering the liver illness is tough since its early phases, which will exhibit modest symptoms, are difficult to diagnose. Most often, cirrhosis disease doesn't manifest symptoms until an advanced stage, making it challenging to identify and diagnose. This paper shows different approaches to how they analyzed and visualized the performance. Medical issues can be resolved quickly and at a lower cost with the use of machine learning techniques. The major goal of this study is to increase the accuracy of result prediction and lower the price of diagnosis in the medical industry. As a result, we classified individuals with cirrhosis illness using several categorization methods. The biomedical field's use of machine learning for the prognosis and diagnosis of cirrhosis disease has had a massive effect. In the biomedical area, machine learning provides a guarantee for better illness identification and prognosis, as well as for increasing the neutrality of the judgment process.



PROJECTS

8EEEI23 MAJOR PROJECT STUDENT DETAILS (2022 -2023)

S.NO	Group ID	Project Title	Type of Project	Project Guide	Team member 1 Name	Enrollment No. Member 1	Group No. Member 1	Team member 2 Name	Enrollment No. Member 2	Group No. Member 2	Team member 3 Name	Enrollment No. Member 3	Group No. Member 3	Team member 4 Name	Enrollment No. Member 4	Group No. Member 4
1	123-EEE-1	Grid connected 3 phase inverter	Hardware	Dr Neelam Kesarwani	Valbhav Garg	03114804919	EEE-3	Kapinder Singh	02814804919	EEE-3	Kunal Verma	02014804919	EEE-2			
2	123-EEE-2	Solar powered bus stop	Hardware	DR L P Singh	Amit	00814807820	EEE-1	Amrit Kumar	01014807820	EEE-1	Ankit	01114807820	EEE-1			
3	123-EEE-3	Defter based Refrigerator	Hardware	Dr Neelu Nagpal	Bhavya Sharma	01414807820	EEE-2	Mayank Sharma	02514807820	EEE-3	Deepak Solanki	01514807820	EEE-2			
4	123-EEE-4	Power generation through speed breaker	Hardware	Prof Satvir Singh Deswal	Amit Kumar	00914807820	EEE-1	Aman Khan	00514807820	EEE-1	Ajay	00214807820	EEE-1			
5	123-EEE-5	Solar Power bank with wireless charging	Hardware	Ms Jyoti	Prince Kumar	03314807820	EEE-3	Pardeep Kumar	03114807820	EEE-3	Rahul Mudgil	03414807820	EEE-3			
6	123-EEE-6	EEG and EMG based controller	Hardware+Software	Prof Rajveer Mittal	Mayank Pokhriyal	00114804919	EEE-1	Akshit Shukla	03214804919	EEE-3	Abhinav Chaudhary	00514804919	EEE-1	Tushar Saxena	01414804919	EEE-2
7	123-EEE-7	Alcohol detector	Hardware	Mr Govind	Kunal Dutta	02314807820	EEE-2	Mid Imteyaz	02814807820	EEE-3	Motlur Rahman	02914807820	EEE-3			
8	123-EEE-8	Stun gun	Hardware	Mr Jitender Lather	Gurpreet Singh	01714807820	EEE-2	Hari Mohan Jha	01814807820	EEE-2	Kriti Yadav	02214807820	EEE-2			
9	123-EEE-9	Smart Parking System	Hardware+Software	Mr Rahul	Rahul Mishra	00714804919	EEE-1	Akash Yadav	00314807820	EEE-1	Chiranjit Bera	00214804919	EEE-1			
10	123-EEE-10	Sign language recognition	Hardware+Software	Dr Monika Gupta	Dhruv Tiwari	00814804919	EEE-1	Pratyush Saurabh	00314804919	EEE-1	Savyo Francis	01314804919	EEE-2			
11	123-EEE-11	Hybrid modular power inverter	Hardware	Mr UK Jha	Nitin Kumar Arya	01014804919	EEE-1	Shubham Lathara	01314804919	EEE-2						
12	123-EEE-12	IoT based smart energy meter	Software	Dr Sunil kr Pandey	Utkarsh Arun	02414804919	EEE-2	Chinmay Meena	02214804919	EEE-2	Sushant Sharma	02114804919	EEE-2			
13	123-EEE-13	Image restoration system	Software	Mr Lalit Aggarwal	Shivay sharma	01114804919	EEE-1	Saksham Budhwani	02714804919	EEE-3	Devand Jain	00914804919	EEE1			
14	123-EEE-14	Facial recognition	Software	Mr Ashok Goyal	Adarsh Kumar Jha	02514804919	EEE-2	Mayank Srivastava	01814804919	EEE-2	MD Farheen Majid	02814804919	EEE-3			
15	123-EEE-15	Microgrid with EV V2G support	Hardware+Software	Ms Supriya Sharma	Gaurav Bhadula	02914804919	EEE-3	Akshita Rawat	03014804919	EEE-3	Manav Arora	03314804919	EEE-3			
16	123-EEE-16	Smog gun	Hardware	Dr Sunil Kumar Pandey	Gajela Ravi Charan	00414804919	EEE-1	Aman Singh	00614807820	EEE-1	Ashish Chamoli	01214807820	EEE-2			
17	123-EEE-17	ION thruster	Hardware	Mr Ashok Goyal	Nitish Kumar	03514804919	EEE-3	Mayur Aryan	02514807820	EEE-3	Kunal Kumar Jha	02414807820	EEE-2			
18	123-EEE-18	Home security system	Hardware+Software	Mr Sheeresh Garg	Ishan Pandey	02014804920	EEE-2	Neelam	03014804920	EEE-3	Deepanshu	01614804920	EEE-2			
19	123-EEE-19	Automatic accident detection	Hardware+Software	M Poonam Juneja	Ayush Ujjayan	01314807820	EEE-2	Kartik	02114807820	EEE-2	MD Atif	02714807820	EEE-3			
20	123-EEE-20	Smart road safety	Hardware+Software	Mr Ravi	Aman Verma	00714807820	EEE-1	Akhil Singh Parmar	00414807820	EEE-1						
21	123-EEE-21	Solar wireless EV charging system	Hardware+Software	Ms Neha	Prince Kumar	03214807820	EEE-3	Ravi Shankar kumar	03514807820	EEE-3	Ronit Kumar	03614804919	EEE-3			

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S.NO.	Group ID	Project Title	Project Guide	Type of Project	Team member 1 Name	Enrollment No. Member 1	Group No. Member 1	Team member 2 Name	Enrollment No. Member 2	Group No. Member 2	Team member 3 Name	Enrollment No. Member 3	Group No. Member 3	Team member 4 Name	Enrollment No. Member 4	Group No. Member 4	Team member 5 Name	Enrollment No. Member 5	Group No. Member 5
1	456-EEE-1	Footstep Power Generation System using Piezoelectric Sensor	Dr. Neelam Kassarwani	Hardware	Samarth Koul	05014804919	EEE-4	Somya Khajuria	06714804919	EEE-5	Shubham Singh Pujdar	10214804919	EEE-6						
2	456-EEE-2	Fabrication of Anti-Smog Gun	Dr. Neelu Nagpal	Hardware	Shashwat Jha	05414804919	EEE-5	Vikas Rai	04214804919	EEE-4	Aashish Kumar Tyagi	07114804919	EEE-5	Vishal Rohilla	06414804919	EEE-6	Gaurav Sharma	7014804919	EEE-5
3	456-EEE-3	Fabrication of Anti-Smog Gun	Dr. Monika Gupta	Hardware	Tushar Gaudam	04314807820	EEE-4	Vishal	04414807820	EEE-4	Krishna Kumar	03914804919	EEE-4	Vishal Pandey	04514807820	EEE-4	Aman Singh	0614807820	EEE-5
4	456-EEE-4	Smart Wireless Electric Vehicle Charging	Dr. Neelu Nagpal	Hardware and Software	Sanjay Jain	04514804919	EEE-4	Sanjay Jain	03814807820	EEE-4	Sanjay Kumar	03914807820	EEE-4	Harsh Kaushik	04014804919	EEE-4			
5	456-EEE-5	IoT-Based Underground Cable Fault Detection System	Mr. Lalit Agarwal	Hardware and Software	Tushar Kumar Jain	03714804919	EEE-4	Sunil Sharma	05614804919	EEE-5	Krishnakant Upadhyay	06814804919	EEE-5						
6	456-EEE-6	Distraction driver detection system	Mrs. Ayushi Agarwal	Software project	Bhavya harang	07714804919	EEE-5	Mohd singh	09814804919	EEE-6									
7	456-EEE-7	Development of solar based water purifier	Mrs. Supriya Sharma	hardware project	Samir Vats	06914804919	EEE-5	Dhyanesh Thakur	07414804919	EEE-5	Sarthak Srivastava	09314804919	EEE-6	Tanveshika Srivastava	05214804919				
8	456-EEE-8	IoT-based Plant Care Ecosystem	Dr. Monika Gupta	Hardware and Software	Shubh Sharma	09414804919	EEE-6	Naveet Sharma	05414804919	EEE-6									
9	456-EEE-9	Vehicle speed detection project	Dr. LP Singh	Software	Parag bansal	04914804919	EEE-4	Jatin sharma	10014804919	EEE-6									
10	456-EEE-10	Multifunctional Convertible Electronic Smart Stick	Ms. Shashibala Agarwal	Hardware and Software	Ayush Chaudhary	06514804919	EEE-5	Anat kumar	06214804919	EEE-6	Rahul Sharma	06314804919	EEE-6						
11	456-EEE-11	Design and implementation of web application for self assessment	Ms. Ayushi Agarwal	Software	Radhika Srivastava	07214804919	EEE-5	Nishant Aggarwal	07314804919	EEE-5	Jahnel Shori	0814804919	EEE-6						
12	456-EEE-12	Solar Powered Traffic Control System Based On Traffic Density With Emergency Vehicles Alert	Mr. Chandrasekh Shukla	Hardware and Software	Akshat	06014804919	EEE-6	Vishal Bhardwaj	06314804919	EEE-6	Aniket Jain	08714804919	EEE-6						
13	456-EEE-13	Credit card fraud Detection Prototype Of Solar Inverter Extension	Dr. Monika Gupta	Software	Saurabh Kumar Thakur	04014807820	EEE-4	Saurabh Sharma	04214807820	EEE-4	S.Nikhil	03714807820	EEE-4						
14	456-EEE-14	Anti-Drowsiness Safety System With Assistance of IoT Based Smart Trolley System	Mr. UK Jha	Hardware	Ayush Ranjan	04614804919	EEE-4	Om Mittal	05114804919	EEE-4	Ayush Gang	06014804919	EEE-6						
15	456-EEE-15	IoT based Air quality monitoring system	Mr. Ashok goyal	Hardware and Software	Saurabh Kumar	06214804919	EEE-6	Kashish sinha	09914804919	EEE-6	Gaurav Rai	06614804919	EEE-5						
16	456-EEE-16	IoT Based Smart Trolley System	Dr. Neelu Nagpal	Hardware and software	Manav Kumar	09114804919	EEE-6	Anurag Tyagi	09614804919	EEE-6	Rahul Das	08914804919	EEE-6	Naman kumar dubey	04414804919	EEE-4			
17	456-EEE-17	IoT based Air quality monitoring system	Ms. Jyoti gupta	Hardware and Software	Tarun sharma	07914804919	EEE-6	Hritik yadav	06114804919	EEE-5									
18	456-EEE-18	Stock Price Prediction using Machine Learning	Ms.Neha Agarwal	Hardware and software	Anant Kumar	05814804919	EEE-5	Pallavi Sharma	05314804919	EEE-5									
19	456-EEE-19	Border Security System Using IR Sensors and Ultrasonic Sensor	Dr.Laxya	Software	Pratyush Singhal	06014804919	EEE-5	Utkarsh Ranjan	09914804919	EEE-5									
20	456-EEE-20	Media Player Controlling by Hand Gestures	Prof. Satish Singh Deywal	Hardware	Shivash Shrivastava	09514804919	EEE-6	Mohd Aquib	07814804919	EEE-6	Bharat Singh	10314804919	EEE-6						
21	456-EEE-21	Design and Implementation of tracking system of books in library	Dr. LP Singh	Software	Shivam Mishra	04714804919	EEE-4												

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S.NO.	Group ID	Project Title	Type of Project	Project Guide	Team member 1 Name	Enrollment No. Member 1	Group No. Member 1	Team member 2 Name	Enrollment No. Member 2	Group No. Member 2	Team member 3 Name	Enrollment No. Member 3	Group No. Member 3
1	789-EEE-1	Fake news detector using machine learning	Software	Mr. Jitender Lather	Hemant Aggarwal	10714804919	EEE-7	Rahul	10614804919	EEE-7			
2	789-EEE-2	Smart manufacturing demonstration by implementing IIOT and Augmented reality on AC motor	Hardware & software	Dr. LP Singh	Abshar Imam	10914804919	EEE-7	Harsh vardhan	11714804919	EEE-7			
3	789-EEE-3	Advance Management System For Streetlights	Hardware	Prof.(Dr.) Rajveer Mittal	Kumar Vikalp	12214804919	EEE-7	Dhanya Gupta	11414804919	EEE-7	Hritik Tyagi	14214804919	EEE-8
4	789-EEE-4	Calorie Quest using Django	Software	Mr. Lalit Agarwal	Yog Singh	13614804919	EEE-8	Aryan Saxena	13114804919	EEE-8	Riya Verma	12514804919	EEE-7
5	789-EEE-5	Room lightening control and people counter using solar power IR sensor	Hardware	Prof. (Dr.) Satvir Singh Deswal	Shivani Kumari	20114804919	EEE-8	Shariq Khan	14914804919	EEE-8	Ishaan Bharadwaj	15114804919	EEE-8
6	789-EEE-6	IoT based Industrial monitoring and fault detection system	Hardware	Dr. Laxya	Mudit Pandey	14014804919	EEE-8	shoaib akhtar	12114804919	EEE-8	Akshat agarwal	35214804918	EEE-9
7	789-EEE-7	Prepaid Energy Meter	Hardware	Mr. Sheersh Kumar Garg	Himanshu Sharma	75114804919	EEE-9	Mayank Jain	36414804919	EEE-9	Dipesh Kumar Thakur	35314804919	EEE-9
8	789-EEE-8	Advanced Driver Assistance System	Hardware & Software	Mr. Govind Gupta	Lakshay Vashisht	13314804919	EEE-8	Sidharth Garg	13714804919	EEE-8	Sidhanth Garg	13214804919	EEE-8
9	789-EEE-9	Automated Lighting Control System	Hardware	Ms. Supriya Sharma	Mukundan Balajee	36714804919	EEE-9	Sandarbh Girotra	36514804919	EEE-9	Ashish Sharma	35714804919	EEE-9
10	789-EEE-10	Ultrasonic sensor-based obstacle detection and alerting for blind (smart blind stick)	Hardware	Dr. Neelu Nagpal	Pranav Khanna	14114804919	EEE-8	Rohit Garg	14514804919	EEE-8	Vaishwik Saini	14714804919	EEE-8
11	789-EEE-11	Electric Power Train and its Power Generation Using Regenerative Braking and Shock Absorber	Hardware	Dr. Neelam Kassar	Gautam	15214804919	EEE-8	Tanish Vansgota	20314804919	EEE-9			
12	789-EEE-12	EVBS with charge monitor and fire protection	Hardware	Ms. Neha Aggarwal	Malika Mishra	35114804919	EEE-9	Vanshika Jaiswal	35814804919	EEE-9	Anushka Pandey	36114804919	EEE-9
13	789-EEE-13	Renewable energy electric charging booth	Hardware	Mr. Ravi Sharma	Pankaj kumar mandal	11614804919	EEE-7	Anubhav	12614804919	EEE-7	Sushant gupta	12714804919	EEE-7
14	789-EEE-14	Alcohol based sensing alert with engine locking	Hardware	Dr. Laxya	Shivam Garg	14314804919	EEE-8	Nikhil Nainwal	13414804919	EEE-8	Lakshya Upadhyay	36214804919	EEE-9
15	789-EEE-15	Home Security System	Hardware & Software	Ms. Ayushi Aggarwal	Rahul Prajapati	11914804919	EEE-7	Nitesh Kumar	50114807820	EEE-9	Yash Rana	36814804918	EEE-9
16	789-EEE-16	Mecanum Wheel Car	Hardware & software	Dr. Neelam Kassarwani	Krishna Goel	12014804919	EEE-7	Jatin Kumar	14614804919	EEE-8			
17	789-EEE-17	Intelli-smart BMS with fire and surge protection	Hardware & Software	Ms. Jyoti Gupta	Gourav kumar	12914804919	EEE-8	Animesh Yadav	12814804919	EEE-7	Pragun Bhargwaj	35614804919	EEE-9
18	789-EEE-18	Machine learning, Stress and Emotion	Software	Ms. Poonam Juneja	Almas Zafar	10514804919	EEE-7	Ayush Kumar	11114804919	EEE-7	Vyom Chhabra	11314804919	EEE-7
19	789-EEE-19	Soft start of three phase induction motor	Hardware	Dr. Sunil Kumar Pandey	Gaurav Pandey	11014804919	EEE-7	Juli Kumari	10414804919	EEE-7	Raunak Raj	12414804919	EEE-7
20	789-EEE-20	IoT based solar inverter and irrigation system	Hardware	Mr. Chandrakesh Shukla	Siddhant Budhiraja	14414804919	EEE-8	Sanya Punj	36014804919	EEE-9	Aakarshan	11814804919	EEE-7
21	789-EEE-21	fabrication and design of anti-smog gun	hardware	Prof. (Dr.) Rajveer Mittal	Amit Rathor	50214897820	EEE-9	Sandeep Kumar	35114807820	EEE-9	Umer Majeed	75114807820	EEE-9
22	789-EEE-22	Automatic PV smart grid fault detection using IoT	Hardware	Ms. Shashibala Agarwal	Aman Sharma	35214804919	EEE-9	Sanchit Garg	36314804919	EEE-9	Kritika Verma	35414804919	EEE-9

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S.NO	Group ID	Project Title	Project Guide	Type of Project	Team member 1 Name	Enrollment No. Member 1	Group No. Member 1	Team member 2 Name	Enrollment No. Member 2	Group No. Member 2	Team member 3 Name	Enrollment No. Member 3	Group No. Member 3	Team member 4 Name	Enrollment No. Member 4	Group No. Member 4
1	123-EEE-1	Battery Management System using MATLAB Simulink	Dr Neelam Kesarwani	Software	Vaidhvas Garg	03114804919	EEE-3	Kapinder Slagh	02614804919	EEE-3	Kunal Verma	02014804919	EEE-2			
2	123-EEE-2	Automatic Water Pump Controller	DR I.P Singh	Hardware	Amit	00814807820	EEE-1	Amrit Kumar	01014807820	EEE-1	Ankit	01114807820	EEE-1			
3	123-EEE-3	Refrigerator without compressor	Dr Neelu Nagpal	Hardware	Bhavya Sharma	01414807820	EEE-2	Mayank Sharma	02514807820	EEE-3	Deepak Solanki	01514807820	EEE-2			
4	123-EEE-4	GSM based agricultural Motor control using Arduino	Prof Satvir Singh Dewal	Hardware+ Software	Amit Kumar	00914807820	EEE-1	Aman Khan	00514807820	EEE-1	Ajay	00214807820	EEE-1			
5	123-EEE-5	Automatic Irrigation	Ms Jyoti	Hardware	Prince Kumar	03314807820	EEE-3	Pardeep Kumar	03114807820	EEE-3	Rahul Mudgil	03414807820	EEE-3			
6	123-EEE-6	3 phase transmission line fault detection	Prof Rajveer Mittal	Hardware	Mayank Pokhriyal	00114804919	EEE-1	Akshil Shukla	03214804919	EEE-3	Abhinav Choudhary	00514804919	EEE-1	Tushar Saxena	01414804919	EEE-2
7	123-EEE-7	Power meter billing and load control with GSM	Mr Govind	Hardware+ Software	Kunal Dutta	02314807820	EEE-2	Md Imteyaz	02814807820	EEE-3	Motiar Rahman	02914807820				
8	123-EEE-8	Prototype of transmission line	Mr Jitender Lather	Hardware	Gurpreet Singh	01714807820	EEE-2	Hari Mohan Jha	01814807820	EEE-2	Kriti Yadav	02214807820	EEE-2			
9	123-EEE-9	Social Distancing Alarm	Mr Rahul	Hardware+ Software	Rahul Mishra	00714804919	EEE-1	Akash Yadav	00314807820	EEE-1	Chiranjit Bera	00214804919	EEE-1			
10	123-EEE-10	Fake currency Detector using PYTHON	Dr Monika Gupta	Hardware+ Software	Dhruv Tiwari	00614804919	EEE-1	Pratyush Saurabh	00314804919	EEE-1	Savys Francis	01314804919	EEE-2			
11	123-EEE-11	Hybrid modular tree power generation	Mr UK Jha	Hardware+ Software	Nitin Kumar Arya	01014804919	EEE-1	Shubham Lathera	01314804919	EEE-2						
12	123-EEE-12	Design and development of Smart energy meter	Dr Sunil kr Pandey	Hardware+ Software	Utkarsh Arun	02414804919	EEE-2	Chinmay Meena	02214804919	EEE-2	Sushant Sharma	02114804919	EEE-2			
13	123-EEE-13	Image Forgery detection System	Mr Lalit Aggarwal	Software	Shivay sharma	01114804919	EEE-1	Saksham Budhwani	02714804919	EEE-3	Devand Jain	00914804919	EEE1			
14	123-EEE-14	Facial Recognition using Machine Learning	Mr Ashok Goyal	Software	Adarsh Kumar Jha	02514804919	EEE-2	Mayank Srivastava	01814804919	EEE-2	Md Farheen Majid	02814804919	EEE-3			
15	123-EEE-15	A Blockchain based Energy Management System for Microgrids	Ms Supriya Sharma	Hardware+ Software	Gaurav Bhadula	02914804919	EEE-3	Akshita Rawat	03014804919	EEE-3	Manav Arora	03314804919	EEE-3			
16	123-EEE-16	Design of Axial Flux motor for propulsion of A.V.s	Dr Sunil Kumar Pandey	Hardware	Gajela Ravi Charan	00414804919	EEE-1	Aman Singh	00614807820	EEE-1	Ashish Chaudhri	01214807820	EEE-2			
17	123-EEE-17	Green Hydrogen as an alternative fuel for transportation	Mr Ashok Goyal	Hardware	Nitish Kumar	03514804919	EEE-3	Mayur Aryan	02514807820	EEE-3	Kunal Kumar Jha	02414807820	EEE-2			
18	123-EEE-18	Home Security System	Mr Sheersh Garg	Software	Ishan Pandey	02014804920	EEE-2	Neelam	03014804920	EEE-3	Deepanshu	01614804920	EEE-2			
19	123-EEE-19	Fast step Power Generation using Piezoelectric crystal	NI Poonam Jangra	Hardware+ Software	Ayush Ujjayan	01314807820	EEE-2	Kartik	02114807820	EEE-2	Md Atif	02714807820	EEE-2			
20	123-EEE-20	Single Axis Solar Tracking System using IC	Mr Ravi	Hardware	Aman Verma	00714807820	EEE-1	Akhil Singh Parmar	00414807820	EEE-1						
21	123-EEE-21	Thermal and Over voltage Protection of Motors	Ms Neha	Hardware	Prince Kumar	03214807820	EEE-3	Ravi Shankar kumar	03514807820	EEE-3	Ronit Kumar	03614804919	EEE-3			

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S. NO.	Group ID	Project Title	Type of Project	Project Guide	Team member 1 Name	Enrollment No. Member 1	Group No. Member 1	Team member 2 Name	Enrollment No. Member 2	Group No. Member 2	Team member 3 Name	Enrollment No. Member 3	Group No. Member 3	Team member 4 Name	Enrollment No. Member 4	Group No. Member 4
1	456-EEE-1	Society Security Management Systems	Prof Rajveer Mittal	Hardware -Software	Ashish Kumar Tyagi	7114004919	EEE-5	Vikas Rai	4214004919	EEE-4	Shashwat Jha	5414004919	EEE-5			
2	456-EEE-2	Design and Development of Wireless EV Charging Station	Dr Neelu Nagpal	Hardware	Sanyam Jain	4514004919	EEE-4	Sanjay Kumar	3914007820	EEE-5						
3	456-EEE-3	Design and Development of Wireless EV Charging Station	Mr Ravi Sharma	Hardware	Sanyak Jain	3814007820	EEE-4	Harsh Kanshik ,	4014004919	EEE-4						
4	456-EEE-4	Implementation of Real time burglar alarm system with motion detector light.	Ms Shashi Agarwal	Hardware -Software	Ayush Chaudhary	6514004919	EEE-5	Amit Kumar	8214004919	EEE-6	Rahul Sharma	6314004919	EEE-5			
5	456-EEE-5	Development of Dynamic wireless EV charging	Ms. Supriya Sharma	Hardware -Software	sarthak Srivastava	9314004919	EEE-6	Samir yad	6914004919	EEE-5	Shreyansh thakur	7414004919	EEE-5			
6	456-EEE-6	Hardware Implementation of Anti sleep detection for drivers	Mr Ashok Goyal	Hardware	Sourabh kumar	9214004919	EEE-6	Kashish stisha	9914004919	EEE-6	Gaurav Rai	6614004919	EEE-5			
7	456-EEE-7	Device to capture depth images using principle of Binocular Stereopsis	Mr Lalit Agarwal	Software	Tushar Kumar Jain	3714004919	EEE-4	Naman Kumar Dubey	4414004919	EEE-4	Samit Sharma	5614004919	EEE-5			
8	456-EEE-8	Advance Solar Powered Traffic Control System Design	Mr. Chandrakesh Shukla	Hardware -Software	Aniket Jain	8714004919	EEE-6	Akshat	8014004919	EEE-6	Vaibhav Bhargava	8314004919	EEE-6			
9	456-EEE-9	A Solar inverter prototype	Mr U. K. Jha	Hardware	Ayush Rajan	4614004919	EEE-4	Om Mittal	5114004919	EEE-4	Aayush Garg	8614004919	EEE-6			
10	456-EEE-10	Model Based Dynamic State Estimator for Power System Applications	Ms. Neha Agarwal	Hardware -Software	Anant Kumar	5814004919	EEE-5	Paritosh Sharma	5314004919	EEE-5						
11	456-EEE-11	A Face Recognition Reminder System	Mr. Jitendra Lather	Software	Gaurav Sharma	7614004919	EEE-5	Vishal Rohilla	6414004919	EEE-5						
12	456-EEE-12	Agriculture Automation Ecosystem	Dr. Monika Gupta	Hardware -Software	Shubh Sharma	9414004919	EEE-6	Naveet Sharma	8414004919	EEE-6						
13	456-EEE-13	Self evaluation game	Ms Ayushi agarwal	Software	Nishant Aggarwal	7314004919	EEE-5	Rudhika Srivastava	7214004919	EEE-5	Jahnvi Shori	8114004919	EEE-6			
14	456-EEE-14	Vehicle Theft and Security System	Dr. Lavya	Hardware -Software	Arvayush Lingal	6014004919	EEE-5	Utkarsh Rajan	5914004919	EEE-5						
15	456-EEE-15	Diagnosing Parkinson's With Machine Learning	Dr Neelu Nagpal	Software	Manav Kumar	9614004919	EEE-6	Anurag Tyagi	9614004919	EEE-6	Rahul Das	8914004919	EEE-6			
16	456-EEE-16	Design & Development of Mini Inverter with PIC Microcontroller	Dr Neelam Kavarwani	Hardware -Software	Somya Khajuria	6714004919	EEE-5	Samarth Koul	5014004919	EEE-4	Shubham Singh Fanjdar	10214004919	EEE-6			
17	456-EEE-17	Smart Helmet for prevention of Accident	Ms. Poonam Jeneja	Hardware -Software	Vishal	4414007820	EEE-4	Tushar Gautam	4314007820	EEE-4	Siddhant bisht	4114007820	EEE-5			
18	456-EEE-18	ML model for fraud detection	Dr Monika Gupta	Software	Sourabh sharma	4214007820	EEE-4	saurabh thakur	4014007820	EEE-4	Vishal pandey	4714004919	EEE-5			
19	456-EEE-19	Farmers Friendly Solar based Electric Fence For Detering Cattle	Dr L. P. singh	Hardware	Shivam Mishra	4814004919	EEE-4	Parag Bansal	4914004919	EEE-4	Jatin Sharma	10014004919	EEE-6	Krishan Kant Upadhyay	6814004919	EEE-5
20	456-EEE-20	IoT Based Plant Watering System	Mr Rahul Garg	Hardware -Software	Krishan Kumar	3914004919	EEE-4	Hritik Yadav	6114004919	EEE-5						
21	456-EEE-21	Attendance System Using Face Recognition	Ms Ayushi Agarwal	Software	Bhavya Narang	7714004919	EEE-5	Janeshka	9814004919	EEE-6	Janeshka	5214004919	EEE-5			
22	456-EEE-22	Prototype of Wind Solar Hybrid Power Generator	Prof Satvir Singh Deval	Hardware	Shivash Bhosnick	9514004919	EEE-6	Md. Aquib	7814004919	EEE-6	Bharat Singh	10314004919	EEE-6			
23	456-EEE-23	Control Appliances Through IoT	Ms Jyoti Gupta	Hardware -Software	Taran Sharma	7914004919	EEE-6									
24	456-EEE-24	Accident Prevention System Using Eye Blink Sensor	Mr Govind Gupta	Hardware -Software	Tanish Jain	20314004919	EEE-8	Gautam	15214004919	EEE-8	Gaurav Singh	15014004919	EEE-8			
25	456-EEE-25	Rechargeable Power Bank Using Solar Energy	Ms Jyoti Gupta	Hardware	S. Nikhil	03714004920	EEE-4									

7EEE789 MINOR PROJECT STUDENT DETAILS (2022-2023)

S.NO.	Group ID	Project Title	Type of Project	Project Guide	Team member 1 Name	Enrollment No. Member 1	Group No. Member 1	Team member 2 Name	Enrollment No. Member 2	Group No. Member 2	Team member 3 Name	Enrollment No. Member 3	Group No. Member 3
1	789-EEE-1	IIoT Connectivity for remote monitoring of three phase generator	Dr. I. P Singh	Hardware	Abshar Imam	10914804919	EEE-7	Harsh vardhan	11714804919	EEE-7			
2	789-EEE-2	IR sensor based obstacle detection and alerting for blind people.	Mr. Sheesh Garg	Hardware & software	Vaishwik Saini	14714804919	EEE-8	Rohit Garg	14514804919	EEE-8	Pranav Khanna	14114804919	EEE-8
3	789-EEE-3	Single phase induction motor with smooth start	Prof. Rajveer Mittal	Hardware	Raunak Raj	12414804919	EEE-7	Juli Kumari	10414804919	EEE-7	Gaurav Pandey	11014804919	EEE-7
4	789-EEE-4	Anti theft system for motor cycle	Ms. Supriya Sharma	Hardware	S.Mukund	36714804919	EEE-9	Sandarbh Girotra	26514804919	EEE-8	Ashish Sharma	35714804919	EEE-9
5	789-EEE-5	IOT smart farming and analytics	Ms. Poonam Juneja	Hardware	Almaas Zafar	10514804919	EEE-7	Ayush Kumar	11114804919	EEE-7	Syom Chhabra	11314804919	EEE-7
6	789-EEE-6	Maglev	Dr. S.S Deswal	Hardware	Shariq Khan	14914804919	EEE-8	Ishaan	15114804919	EEE-8	Shivani Kumari	20114804919	EEE-8
7	789-EEE-7	Advanced Highway Energy Management System for street lights	Prof. Rajveer Mittal	Hardware	Kumar Vikalp	12214804919	EEE-7	Hritik Tyagi	14214804920	EEE-8	Dhairya Gupta	11414804921	EEE-7
8	789-EEE-8	Solar power Inverter	Mr. C.K Shukla	Hardware & Software	Aakarshan	11814804919	EEE-7	Siddhant Budhiraja	14414804919	EEE-8	Sanya Panj	36014804919	EEE-9
9	789-EEE-9	EVBSMS charge monitor and fire protection	Ms. Neha Aggarwal	Hardware	Anushka Pandey	36114801919	EEE-9	Malika Mishra	35114804919	EEE-9	Vanshika Jaiswal	35814804919	EEE-9
10	789-EEE-10		Dr. Monika Gupta	Hardware	Nayveet Sharma	8414804919	EEE-6	Shubh Sharma	09414804919	EEE-6			
11	789-EEE-11	Solar power based automatic lighting system	Mr. Sheersh Kumar Garg	Hardware	Himanshu Sharma	75114804919	EEE-9	Mayank Jain	36414804919	EEE-9	Dipesh Kumar Thakur	35314804919	EEE-9
12	789-EEE-12	DML based Fire Alarm System	Mr. Jitender Kumar Lather	Hardware	Hemant Aggarwal	10714804919	EEE-7	Rahul	10614804919	EEE-8	Shivam Garg	14314804919	EEE-8
13	789-EEE-13	Rain Sensing Wiper	Mr. Govind Gupta	Hardware	Lakshay Vashisht	13314804919	EEE-8	Sidharth Garg	13714804919	EEE-8	Sidhanth Garg	13214804919	EEE-8
14	789-EEE-14	Accident prevention system using eye blink sensor	Dr. Neela Nagpal	Hardware	Tanish jain	20314804919	EEE-8	Gautam	15214804919	EEE-8	Gaurav singh	15014804919	EEE-8
15	789-EEE-15	Renewable electric energy charging booth	Dr. Neelam Kassarwani	Hardware & Software	Sushant Gupta	12714804919	EEE-7	Pankaj Kumar Mandal	11614804919	EEE-8	Anubhav	12614804919	EEE-7
16	789-EEE-16	Macanum Wheel Robot Car	Dr. Neelam Kassarwani	Hardware & software	Krishna Goel	12014804919	EEE-7	Jatin Kumar	14614804919	EEE-8			
17	789-EEE-17	ML Based Lung Cancer Detection	Mr. Lalit Aggarwal	Hardware & Software	Aryan Saxena	13114804919	EEE-8	Yog Singh	1364804919	EEE-8	Riya Verma	1254804919	EEE-7
18	789-EEE-18	Impementation of single axis tracking system	Dr. Laxya	Software	Mudit Pandey	14014804919	EEE-8						
19	789-EEE-19	Microcontroller less four quadrant DC motor	Mr. Udayan Kumar Jha	Hardware	Amit Rathor	50214807820	EEE-9	Sandeep	35114807820	EEE-9	Umer	75114807820	EEE-9
20	789-EEE-20	SI6 gas leakage detector	Ms. Ayushi Aggarwal	Hardware	Nitish Kumar	50214807820	EEE-9	Yash Rana	36814804918	EEE-9	Lakshay upadhyay	36214804919	EEE-9
21	789-EEE-21	Electric vehicle battery management system with protection system	Ms. Jyoti Gupta	Hardware	Pragun Bhardwaj	35614804919	EEE-9	Animesh Yadav	12814804919	EEE-7	Gourav Kumar	12914804919	EEE-8
22	789-EEE-22	Smart grid fault protection and detection using IOT+GSM-RFID	Ms. Shashibala Aggarwal	Hardware	Kritika Verma	35414804919	EEE-9	Sanchit Garg	36314804919	EEE-9	Aman Sharma	35214804919	EEE-9

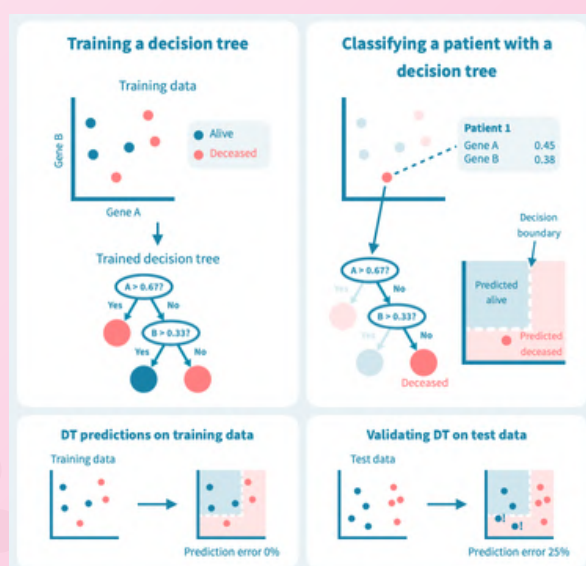
ALUMNI CORNER

Survival prediction of cancer patient using Machine Learning EAI/Springer Innovations in Communication and Computing book series (EAISICC)

Anjali Raghav (60914804916), Sharad Vaish (40214804916), Dr. Monika Gupta
September 2021

Abstract:

Oropharyngeal carcinoma is a type of head and neck cancer caused by division of cells present in the throat, which can affect a single region or multiple regions of the throat. A commonly found disease can be fatal if not diagnosed at an early stage. Various medical methodologies have been developed with time; however, the prediction of survival is still uncertain. In this research, the medical treatment offered to patients along with detailed information about them such as their drinking habits, age, time of diagnosis, and type of cancer was taken into consideration. In this paper, comparative analysis of neural network, three bagging, and three boosting algorithms was performed for prediction of oropharyngeal cancer. The bagging algorithms considered are support vector classifier (SVC), decision tree, and random forest. Boosting algorithms are AdaBoost, XGBoost, and CatBoost. Based on accuracy, time of processing and various performance parameters CatBoost was determined as the best algorithm to predict the survival chances of a cancer patient.



BeamAtt: Generating Medical Diagnosis from chest X- Rays using sampling based intelligence

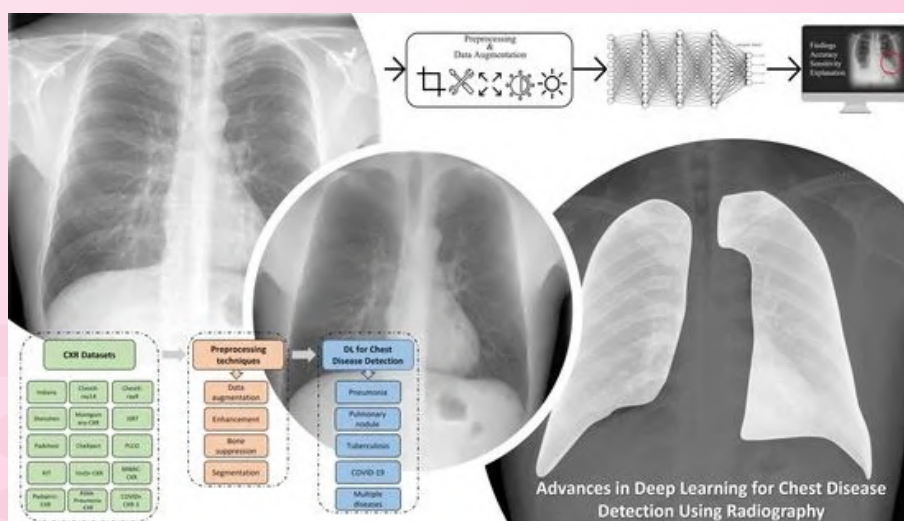
EAI/Springer Innovations in Communication and Computing book series
(EAISICC) Springer

Aman Sawarn (42914804916), Shefali Srivastava, Dr. Monika Gupta

September 2021

Abstract:

Medical imaging coupled with image captioning is fuelling the possibilities of generating accurate medical reports with minimal human intervention. In economically downtrodden nations, this produces opportunity for the poor to acquire world-class treatment from around the globe with an efficient time to market. Chest X-ray images are integral to the task of diagnosis and treatment of respiratory problems. In this paper, we propose BeamAtt: an end-to-end deep CNN-RNN-based encoder-decoder framework that incorporates spatial visual attention to generate a terse diagnosis from chest X-ray films. We choose to use a GRU RNN decoder as compared to LSTMs or hierarchical LSTMs from previous literature and reason via extensive evaluation for the same. To boost performance over state-of-the-art methods with complex architectures, we employ sampling-based techniques along with beam search optimisation while generating inferences and argue that a simpler framework with intelligent optimisation is able to successfully achieve higher performance metrics. We show how vivid attention plots can provide deep insight into the region of the image on which the network concentrates to generate a word token. We compare our model with recent prior art using standard evaluation metrics BLEU-1/2/3/4 and ROUGE-L and demonstrate superiority of the proposed method. BeamAtt achieves a BLEU-1 score of 0.56 and CIDEr score of 2.077 which is a significant boost in performance over contemporary solutions.



आविष्कार



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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PSP AREA , PLOT NO. 1 , SECTOR 22 , ROHINI , DELHI - 110086 PH. : 01165647741