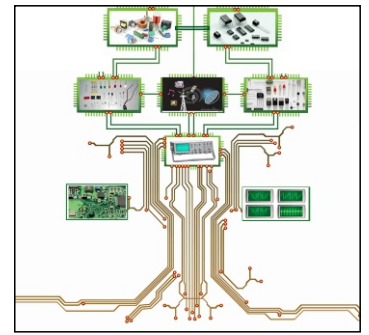


ELECTRONICA

Newsletter

Department of Electronics & Communication Engineering



Volume 8

Issue 1

July - Dec 2022

Vision and Mission of the Institute

- Vision**
- To be one of the premier Institutes of Engineering and Management education in the country
- Mission**
- To provide Engineering and Management education that meets the needs of human resources in the country
 - To develop leadership qualities, team spirit and concern for environment in students
- Objectives**
- To achieve educational goals as stated in the vision through the mission statements which depicts the distinctive characteristics of the Institution
 - To make teaching-learning process an enjoyable pursuit for the students and teachers

Vision and Mission of the Department

- Vision**
- To be a renowned department for education in Electronics and Communication Engineering in Karnataka State, moulding students into professional engineers
- Mission**
- To provide teaching - learning process in Electronics and Communication Engineering that will make students competitive and innovative to adapt to needs of industry and higher learning
 - To imbibe professional ethics, team spirit and leadership qualities to succeed in changing technological world
 - To inculcate empathy for societal needs and concern for environment in engineering design and practice
- Program Education Objectives**
- After 2 to 3 years of graduation, the students will have the ability to:
- Analyze, design and implement solutions in Electronics and Communication Engineering and adapt to changes in technology by self/continuous learning
 - Engage in higher learning and contribute to technological innovations
 - Work with professional ethics as an individual or as a team player to realize the goals of the project or the organization
 - Work with respect for societal values and concern for environment in implementing engineering solutions



This edition of Electronica is dedicated to John F. Clauser and Anton Zeilinger, who were jointly awarded the 2022 Nobel Prize in Physics for their experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science.



What's inside...

- *Articles*
- *Department Events*
- *Student Achievements*
- *Staff Achievements*

And more...

B. N. M. Institute of Technology

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Vidyayāmruthamashnuthē



FROM THE EDITORS' DESK

Dear readers,

“Reading is essential for those who seek to rise above the ordinary.” –Jim Rohn

The Editorial Team of the Department of Electronics and Communication Engineering is pleased to welcome everyone to the next edition of our newsletter, 'ELECTRONICA' Volume 8, Issue 1, July-December 2022.

Our team is delighted to present the latest edition of ELECTRONICA, which showcases the innovative and cooperative efforts of our dedicated students pursuing Electronics and Communication Engineering. They have invested countless hours to provide with the most comprehensive and up-to-date information about the latest technological innovations. ELECTRONICA provides a unique opportunity for students to explore and express their interests and ideas, and we have strived to create a platform that allows them to do so early in their careers. We hope this publication inspires confidence and fosters innovation among our minds as they pursue their research. This edition of our newsletter also celebrates the accomplishments of our talented students and staff. It highlights the numerous events organized by the Department of Electronics and Communication Engineering at BNMIT.

We want to express our deep appreciation to all the talented writers who have contributed their valuable insights and perspectives to this edition. We are also grateful for our esteemed audience's unwavering support and readership. We hope everyone enjoys this edition and we welcome your feedback to help us enhance future editions. We extend our warmest wishes to all our readers and authors for a prosperous and enlightening year ahead.



Editorial Team

ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering started in 2001. The department has two programs: B.E. and M.Tech. (VLSI Design and Embedded Systems), affiliated with VTU. The department also has a VTU-recognized research centre and offers Ph.D. program. Many researchers pursue their doctoral programs, and in this research center, presently, there are nine registered candidates. The department has a team of highly qualified and dedicated staff with teaching, research, and industrial experience. Well-equipped laboratories with state-of-the-art infrastructure and classrooms with LED projectors provide an enhanced learning environment to cater to tomorrow's prodigious engineers needs. Most lectures and practicals are video recorded and made available to students through an online platform, the BNMIT VROOK learning management system.

Our students have excelled in academics and secured seventeen university ranks since 2005. The students do innovative projects, internship training in industries, and academic projects in reputed organisations. They regularly participate in inter-college and intra-college technical, cultural, and sports events and have regularly brought laurels for the department. The students participate in hackathons, workshops, webinars, and quizzes, present papers at reputed conferences, and publish papers in reputed journals. Webinars and workshops are conducted in hybrid mode. Faculty Development Programs, Workshops, Skill Development Programs, Seminars, and Invited Talks for students and staff are organized for continuous learning and periodic updation of knowledge and skills.

Dr. P. A. Vijaya
Professor & Head, Dept. of ECE

TECHNICAL ARTICLES

AI in Healthcare

Artificial Intelligence (AI) technologies that are ever present in modern business and everyday life, are also steadily being applied to healthcare. Artificial intelligence in healthcare can assist healthcare providers in many aspects of patient care and administrative processes, helping them improve upon existing solutions and overcome challenges faster. Most AI and healthcare technologies have strong relevance to healthcare, but the tactics they support can vary significantly between hospitals and other healthcare organizations. While some articles on artificial intelligence in healthcare suggest that the use of artificial intelligence in healthcare can perform just as well or better than humans at specific procedures, such as diagnosing disease, it will be a significant number of years before AI in healthcare replaces humans for a broad range of medical tasks. However for many, it is still unclear. What is artificial intelligence in healthcare, and what are its benefits? How is AI used in healthcare today and what will it look like in the future? Will it replace people in key operations and medical services ?

AI technologies are well suited to analyse data in healthcare sector to uncover patterns and insights humans cannot find, on their own. With deep learning from AI, healthcare can use algorithms to help them make better business and clinical decisions and improve the quality of the experiences they provide. AI healthcare technologies are well suited to analyse data from various sources in medical imaging to retrieve and present crucial insights on health and treatment. The most successful AI-powered capabilities help clinicians make more informed decisions, enabling them to deliver the best possible care. The ability to analyse data and provide patients with insightful information and, recommendations may depend on the type of technology being used. As we move into the future,



where more people than ever can benefit from AI technologies, it's important to consider how these solutions will collect and analyse vast amounts of data and make data-driven decisions directly impact patients.

Imagine being able to ask every patient a question and instantly have their results presented in a report that allows you to understand who they are, what they need, and any associated risks. The possibilities are endless, but only if one does not have to worry about the regulatory requirements or compliance rates. With Artificial Intelligence and Machine Learning, we believe healthcare organisations will be more efficient and effective than ever. Today AI is an essential part of healthcare operations, playing a role in everything from financial analysis and billing to clinical decision-making. It improves patient care through faster identification and diagnosis of issues, greater use of generic drugs to reduce health costs, and reduced risk for patients and employers.

Source
<https://www.foreseemed.com/artificial-intelligence-in-healthcare>

Joshitha Lakshminarayana
 V ECE A

Yoga powered by Artificial Intelligence

A technology that plays a crucial role in Yoga was hard to find before the advent of artificial intelligence. It was assumed that technology and Yoga were insignificant to one another and would never meet. With the recent technological advancement, the world is rapidly moving towards a post-AI world, and cheers to that! On World Yoga Day, let us see how technology has impacted Yoga.

AI has impacted nearly every single industry including financial services, education, healthcare, and retail. Additionally, AI has made its way to the economy's fitness and wellness sectors including Yoga. In general, when it comes to fitness, many people prefer cardio, gym, and Yoga. However Yoga has gained the more incredible popularity amongst all alternatives since it provides advantages for both old and young individuals. It has been discovered that Yoga is connected to the order of nature and is not something that one would equate with technology.

Numerous AI-powered personal yoga instructors provide voice assistance. One of them goes by the name of Sofia. The designed system guides the user through each stage using Computer Vision and Deep Learning models and also awards stars based on how well it achieves the accuracy of each position. The AI-powered hardware and software, allowed users to improve their yoga postures with enhanced health benefits during the lockdown. Online yoga sessions and applications grew popular and were employed during the lockdown. In compared to a real yoga studio, where many students are being taught simultaneously and without individual attention, AI-powered applications have demonstrated their promise by providing each individual with a superior experience.



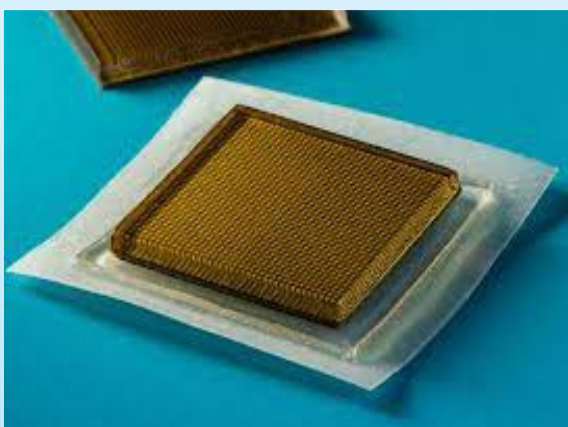
Today's hectic lifestyle has made it strenuous for people to find time to go to the gym or hire a personal trainer, with the added financial burden. Personal trainers much of expertise might not be well within everyone's budget. However, people who want to attain their fitness goals may use AI-integrated fitness applications effectively. Using Natural Language Processing (NLP), which directs individuals by advising them of the proper posture that needs to be accomplished, AI personal trainers are discovered to function similarly to human trainers. The various yoga mobile applications make use of the strategies of Artificial Intelligence to encourage their customers with optimistic feedback and an AI-based Yoga Trainer who instructs and guides a user to do yoga postures accurately.

Source: <https://yourstory.com/2021/11/ai-power-future-fitness-wellbeing>

Surya Kaushik P K
VII ECE B

Stamp-Sized Ultrasound Adhesives for Clear Images of Internal Organs

Ultrasound imaging is a safe and non-invasive window into the body's workings, providing clinicians with live images of a patient's internal organs. To capture these images, trained technicians manipulate ultrasound wands and probes to direct sound waves into the body. These waves reflect to produce high-resolution images of a patient's Heart, Lungs, and other deep organs. To image with ultrasound, a technician first applies a liquid gel to a patient's skin, which acts to transmit ultrasound waves. A probe or a transducer is then pressed against the gel, sending sound waves into the body that echo off internal structures and back to the probe, where the echoed signals are translated into a visual image. Currently, ultrasound imaging requires bulky and specialized equipment available only in hospitals



and doctor's offices, but a new design by MIT engineers might make the technology as wearable and accessible as buying Band-Aids in pharmacies.

The MIT team's new ultrasound sticker produces higher-resolution images over a longer duration by pairing a stretchy adhesive layer with a rigid array of transducers. This combination enables the device to conform to the skin while maintaining the relative location of the transducer to generate more transparent and more precise images. The researchers applied the stickers to volunteers and showed the devices producing live, high-resolution images of major blood vessels and deeper organs such as the Heart, Lungs, and Stomach. The Stickers

maintained a strong adhesion and captured changes in underlying organs as volunteers performed various activities. The current design requires connecting the stickers to instruments that translate the reflected sound waves into images. However the stickers could have immediate applications. For instance, the devices could be applied to patients in the hospital, similar to heart-monitoring EKG stickers. They could continuously image internal organs without requiring a technician to hold a probe in place for an extended period.

If the devices can be made to operate wirelessly — a goal the team is currently working toward — the ultrasound stickers could be made into wearable imaging products that patients could take home from a doctor's office or even buy at a pharmacy. This research was funded, in part, by MIT, the Defense Advanced Research Projects Agency, the National Science Foundation, the National Institutes of Health, and the U.S. Army Research Office through the Institute for Soldier Nanotechnologies at MIT.

Source: <https://news.mit.edu/2022/ultrasound-stickers-0728>

Vijay
V ECE B

Automobile Industry embraces e-Mobility post COVID-19

In 2019, sources suggested that the average noise levels during Diwali between the 27th and 31st of October in India were measured 82.71 dB for 3 days. On the other hand, the reality is that automobiles that are traveling at an average speed of 30 mph and emitting daily noise levels between 40 and 70 dB have proved to be even more harmful than bursting crackers during these 3 days. Hence it is evident that the root cause of health issues in individuals is the pollution caused by vehicles. However, this can be significantly reduced by promoting the use of electric vehicles that help reduce fuel consumption world wide. This article is about what electric vehicles are, how they work, why people are interested in them, and how EVs work towards making the world a “Better Place to Live”.

Electric Vehicles are receiving immense popularity these days because people are captivated by these automobiles' ability not to create pollution like gasoline or petrol-powered cars. Hence, they are proving to be environmentally friendly, particularly in cities where vehicles motorized by petroleum are creating havoc. The main distinction is that an electric car is propelled by an electric motor rather than a gasoline engine. It may seem absurd, but nowadays, it is unlikely to tell whether a car is electric from outside. Electric cars also make less noise and do not require internal combustion engines to function. The only thing that stands out when one frequently encounters an electric automobile is that it is practically silent, which is its true nature. Furthermore, the various types of EVs are:



- Battery Electric Vehicle (BEV): Ex. Tesla Model 3 & BMW I3
- Hybrid Electric Vehicle (HEV): Ex. Honda Civic Hybrid & Toyota Prius Hybrid
- Plug-In Hybrid Electric Vehicle (PHEV): Ex. Porsche Cayenne SE Hybrid & Audi A3 E-Tron
- Fuel Cell Electric Vehicle (FCEV): Ex. Toyota Mirai & Hyundai Tucson

Now, let us talk about reliability and cost. An electric car can be charged by connecting it to a home charger or a public charging station. The answer to the "How far can you go on a full charge" varies depending on the type of vehicle.

Each model has a different range of battery sizes and efficiency. The perfect electric car would be that one can drive on regular trips without stopping. The size of the battery determines how far an electric vehicle can go; the bigger the battery, the farther the EV can go.

Some examples are Volkswagen E-Golf which can range up to 125 miles, Hyundai Kona Electric which can range up to 250 miles, and Jaguar I-Pace which can range up to 292 miles on a one-time charge. It gives us sufficient clarity when compared to the metrics of general petrol or diesel cars. The main thrust of this article is that EVs do not include an exhaust system, they have zero emissions, and hence, an electric car contributes to cleaner air and noiseless transportation on the road, which leads to a healthier world. In addition, electricity is significantly less expensive than gasoline or diesel. One can save more money on powering one's home and electric vehicle by installing solar panels.

Additionally, as compared to gas-powered automobiles, electric cars do not require much maintenance and are known to operate smoothly and silently. To conclude, this article reminds us to join hands in saving Mother Earth and refrain from causing all sorts of pollution. As engineers, it is our moral responsibility to think, innovate and emerge solutions that benefits society as a whole.

Source:
<https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/reimagining-the-auto-industrys-future-its-now-or-never>

Dhanush Upadhy R
 V ECE A

Staff Achievements

- **Dr. S.Y.Kulkarni**, Additional Director & Professor, ECE received the ASMA Academic excellence award for the year 2022. Dr. Ashwathnarayan, minister for higher education gave the award along with other dignitaries.



- Faculty Inventors **Dr. Veena S Chakravarthi**, and **Dr. Yasha Jyothi M Shirur** with Student Inventors **Sowndarya S, Shubham Raj**, and **Vismith Upadhy P J** filed a patent with patent no: 202041057157 titled “System, Method, and tool for Circuit Design and Implementation” on 30th December 2020. The patent got published on 1st July 2022.
- Faculty Inventors **Keerti Kulkarni**, and **Dr. P.A. Vijaya**, with Student Inventors **Shushmita M, Namrata Kolkar**, and **Suman G S** filed a patent titled “An Arduino-based Robotic Arm System controlled by EEG Signals from the Brain” with Application Number: 202241044715 dated 4th August 2022.
- **Prof. Ashwini S Savanth** under the guidance of **Dr. P.A. Vijaya** defended her Ph.D. thesis titled “Pattern Classification and Image Processing Techniques on Brain fMRI data for the Analysis of Meditation Effects” on 6th September 2022.
- **Prof. Priya R Sankpal** under the guidance of **Dr. P.A. Vijaya** defended her Ph.D. thesis titled “Encryption-Based Nested Watermarking Techniques for Secure Transmission of Images” on 10th September 2022.
- **Prof. N Sheshaprasad** under the guidance of Dr. S.B. Bhanu Prashanth, Professor, Dept. of Medical Electronics, BMSCE defended his Ph.D. thesis titled “Design and Study of Performance of Microstrip Antennas for Human Body Communication” on 29th October 2022.
- **Prof. Keerthi Kulkarni** under the guidance of **Dr. P.A. Vijaya** defended her Ph.D. thesis titled “Analysis of Land Use and Land Cover Change using Remotely Sensed Images” on 9th December 2022.
- **Prof. Vrunda Kusanur** under the guidance of **Dr. Veena Chakravarthy** defended her Ph.D. thesis titled “Design of an EnVnet- Wireless Sensor Network to Evaluate Plant Nutrients for Urban Farming” on 26th December 2022.

“If you think education is expensive, try estimating the cost of ignorance.” - **Howard Gardner**
 “Being a student is easy. Learning requires actual work.” - **William Crawford**
 “Education without application is just entertainment.” - **Tim Sanders**



Staff Publications

- **N Sheshaprasad, Kiran KN, and Sumathi A** published a paper titled "**A 28 GHz 5G High Gain MIMO Antenna Array System for Human Body Communication**" in the International Journal of Creative Research Thoughts (IJCRT), ISSN:2320-2882, Volume.10, Issue 7, pp.a482-a486, July 2022.
- **Lakshmi Bhaskar and Dr. Yamuna Devi C R** published a paper titled "**Performance analysis of CC- LEACH**" in HTL Journal, Volume 28, Issue 7, July 2022.
- **Ashwini S Savanth, PA Vijaya, Nair AK, and Kutty BM** published a paper titled "**Differences in Brain Connectivity of Meditators during Assessing Neurocognition via Gamified Experimental Logic Task: A Machine Learning Approach**" in The Neuroradiology Journal, September 2022;0(0).
- **Ashwini S Savanth, PA Vijaya, Nair AK, and Kutty BM** published a paper titled "Classification of Rajayoga Meditators Based on the Duration of Practice Using Graph Theoretical Measures of Functional Connectivity from Task-Based Functional Magnetic Resonance Imaging" in the International Journal of Yoga, September 2022;15:96-105.
- **Keerti Kulkarni and P. A. Vijaya** published a paper titled "**Mapping Forests using an Imbalanced Dataset**" in the Journal of The Institution of Engineers (India): Series B, 103(6), December 2022.
- **Bharathi. M and Yasha Jyothi M Shirur** published a paper titled "**Efficient Realization of Fast Fourier Transform based on Distributed Arithmetic**" in RES MILITARIS Social Science Journal Published/publi inResMilitaris(resmilitaris.net), vol.12, n 5, p-p 923-933, December Issue 2022.

Students' Achievements

- **Gayathri S** of the 8th semester ECE received the "**Best Performing ISTE Chapter Student Award 2022**" for her overall performance, active involvement, and participation in the ISTE student chapter activities.



Gayathri S along with Dr. Krishnamurthy G N, Principal, BNMIT; Dr.P.A.Vijaya, HoD, ECE; Dr.Rekha P, Associate Professor, ECE ; and Prof. Sumathi A, Associate Professor, ECE with the award

- **Sahana R M , Sahana S , Sujay B Y** of 8th Semester ECE received VTU funding of Rs. 6500/- for their project titled "Power Generation and Monitoring Using Vertical Axis Wind Turbine and IoT" under the guidance of **Prof. Priyadarshini K Desai**.
- **Rajashekhar V** from the 5th Semester ECE won second place in a "Technical Talk on Smart Engineering for a Better World" organised by the Institution of Engineers (India), Karnataka State Centre, Bengaluru on 15th September 2022.
- **Kushboo Choudhary G** from 8th Semester ECE completed NCC 'C' certificate with A grade and the results were announced on the 27th June 2022.
- **SGT Chinmay D** from the 5th Semester ECE got selected for the Intergroup competition (state level) for the Thal Sainik camp after getting selected in three consecutive camps held during August – September 2022. He was one of the 49 Cadets out of 3000 Cadets who got selected.
- **CPL Puornausri** From 4th Semester ECE got selected for Republic Day Camp (National Level) held in New Delhi after getting selected in 7 consecutive camp during May- December 2022. She was one of the cadet out of 2,00,000 cadets from Karnataka and Goa Directorate.

- **Kushboo Choudhary G** from 8th Semester ECE won the VTU state level Yoga Championship Men and Women 2022-23 held at Shravanabelagola from 9th- 10th December 2022.
- Students from the 7th semester and 3rd semester ECE participated and won several medals in the State Level VTU Youth Festival held for all colleges under VTU at BMS College of Engineering, Basavanagudi, Bengaluru from 29th to 31st July 2022. **Supreetha P, Kathyayini Bhatta,** and **Manoj R S** from the 7th semester secured the gold medal in Indian Group Song; **Chinmayi R C** from the 3rd semester secured the **Nirag S R** gold medal in Debate; from the 3rd semester secured a silver medal in Mimicry; **Supreetha P** from 7th semester secured a silver medal in Light Vocal Solo; **Nandika R, Samhitha Bhat, Varsha M, Supreetha P, Kathyayini Bhatta** from 7th semester and **Pournausri, Srinidhi N** from 3rd semester secured a silver medal in One Act Play; **Supreetha P, Kathyayini Bhatta** from 7th semester and **Chinmayi R C, Rajneel S Pradhan** from 3rd semester secured bronze medal in Western Group Song.

Student Publications

- **Swathi Dayanand** and **Chaitra Nagaraj** published a paper titled “**Impact and Feasibility of Harnessing AI and ML in the Realm of Cybersecurity to Detect Network Intrusions: A Review**” in the International Journal of Recent Technology and Engineering (IJRTE), Volume-11 Issue-2, July 2022.
- **Sri. N. Shesha Prasad, Bhavana V, Abhiram C,** and **Anshika Philo Nivedha K** published a paper titled "The Synthesis of BioAcoustic Music using Plants" in the International Journal of Creative Research Thoughts (IJCRT), ISSN:2320-2882, Volume.10, Issue 7, pp.c23-c26, July 2022.
- **Mohan K, Mallikarjun S M, Beeresh, Syed S,** and **Keerti Kulkarni,** published a paper titled “**Piezo-based Door Mat**” in International Journal of Scientific Research in Computer Science, Engineering and Information Technology, Volume 8, Issue 4, pp 199-202, July 2022.
- **Sahana R M , Sahana S , Sujay B Y ,** and **Priyadarshini K Desai** presented a paper titled “**Power Generation and Monitoring Using Vertical Axis Wind Turbine and IoT**”, in the International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211 Volume 10, Issue 7, July-2022, Impact Factor: 7.429
- **Meghana M, Dr. P. A. Vijaya,** and **Anuradha J P** published a paper titled “**Comparison of Invisible Digital Watermarking Techniques for its Robustness**” in International Research Journal of Engineering and Technology (IRJET) Volume 09, Issue 07, July 2022, ISSN: 2395-0072.
- **Bindu S** and **S Tejaswini** published a paper titled “**Design of Full Adder with Fault Tolerance using a Parallel Adder**” in the International Journal of Creative Research Thoughts, Volume 10, Issue 8 August 2022, ISSN: 2320-2882.
- **R. Vishwasi, S. K. Holla, Yoeshwar. D** and **Keerti Kulkarni** presented a paper titled “**A Raspberry Pi-based CNN model for Indian Currency Detection for Visually Impaired People**” at the 3rd International Conference on Electronics and Sustainable Communication Systems (ICESC), August 2022, pp. 1170-1175.
- **Bhanupriya V, Brinda N, Jyothi H N,** and **Priyadarshini K Desai** presented a paper titled “Mutual Coupling Analysis of 2x2 MIMO Antenna Using Defected Ground Structure at Millimeter Wave”, at 2022 Third International Conference on Intelligent Computing Instrumentation and Control Technologies (ICICT) held on 11th & 12th August 2022, IEEE, 10.1109/ICICT54557.2022.9917955.
- **Sachin Maheswary, Suprat Poudel, Rajashekhar Choudhury, Rajkumar I Revannavar,** and **Lakshmi Bhaskar** published a paper titled “**GPS-based Smart Parking System**” in HTL Journal Volume 28, Issue 8, August 2022.
- **Dr. Yasha Jyothi M Shirur, Nithin Iyer K S, Sujay K S,** and **Uday V N** published a paper titled “**Design of Light Cipher Cryptographic Algorithm Computation Block Using Verilog for IoT Applications**” in the International Journal of Advances in Engineering and Management (IJAEM) Volume 4, Issue 11, Nov. 2022, pp: 971-977.
- **Tejas S. Koundinya, S. C. Gowda,** and **Jyoti R. Munavalli** presented a paper titled "Dhanvantari: An intelligent diagnosis tool to classify malignant skin disease and Lung conditions using Deep Learning" at the 2022 6th International Conference on Computation System and Information Technology for Sustainable Solutions (CSITSS), Bangalore, India, pp. 1-6, December 2022.
- **Shashank Simha B K, Rahul M, Jyoti R Munavalli,** and **Prajwal Anand** presented a paper titled “**Dual-Language Detection using Machine Learning**” at the International Conference on VLSI, Communications and Computer Communication, Advances in Intelligent Systems and Technologies, AnaPub Publications, 177-180, December 2022.

Departmental Events

Department of Electronics & Communication Engineering, BNMIT honoured the students of the 8th Semester B.E. with **FCD momentoes, best projects, and best presenter awards** on 27th July 2022.

Best Projects were awarded to Neeraj H Gowda, Rahul M, and Shashank Simha B K for Smart Waist Belt for Health Monitoring; Harshit Mimani, K Sowmya, and Merlin Andriana Lobo for TagAlong An Assistive Device for Alzheimer Patients; Gandharva Kumar, G R Amrutha, and Jyotheeswari M H for Controlling Electric Appliances using Head Movements; Mohammed Ishaq Sharieff, Jayalakshmi D G, Reetha G P, and Shaik Riyaz ur Roshan for Smart Water Purification using Bioadsorbants.

Best Presenter awards were given to K Sukrutha S Rao for Centralized Smart Interest Rate Display for Banks; Chandan A S for IoT-based Inverter for Autonomous Electric Vehicle Drive using Intelligent Power Module; Sahana R M for Power Generation using Vertical Axis Wind Turbine with IoT; Uday V N for Design & Implementation of Highly Secured Elliptical Curve Cryptography Algorithm for Real-Time Applications; Srinivasan R for Deep Learning based Brain Tumor Detection using Convolutional Neural Network and Recommendation System; Rajshekhar Choudhury for Ease My Park Smart Cloud-based Parking System; Gayathri S for Design and Implementation of Efficient Distributed Arithmetic based FIR Filters for DSP Application; and Samanvitha N for An IoT based Smart Garbage Monitoring System using Solar Panel.



Winners of Best Project Award and Best Presenter Award in VIII Semester Project Exhibition (2021-22) with HoD, ECE, project guides, and project coordinators. (Sitting from left) Prof. Vrunda Kusunur, Dr. Yashajyothi M Shirur, Dr. P. A.Vijaya, HoD, Dr. Bhuvana Suganthi D, Dr. Jyoti R Munavalli, (Standing from left) Prof. Ashwini S Savanth, Prof. Priyadarshini K Desai, Prof. Sujaya B L, Prof. Lakshmi Bhaskar



FCD holders with HoD and Staff of the ECE department (Sitting from left) Prof. Sumati A, Dr.Rekha P, Dr.P.A.Vijaya, HoD, ECE, Prof. Sujaya B L, Prof. Prabhavathi P, Prof. Lakshmi Bhaskar

Department of Electronics and Communication Engineering in association with **ISTE Students Chapter-BNMIT** organized an Invited talk on **“Cloud Computing”** by Mr. Rajesh Krishnan Distinguished Member of Technical Staff and Senior Architect, Dell Technologies on 16th August 2022 followed by the Distribution of Mementos to FCD Students of 4th & 6th Semester B.E.

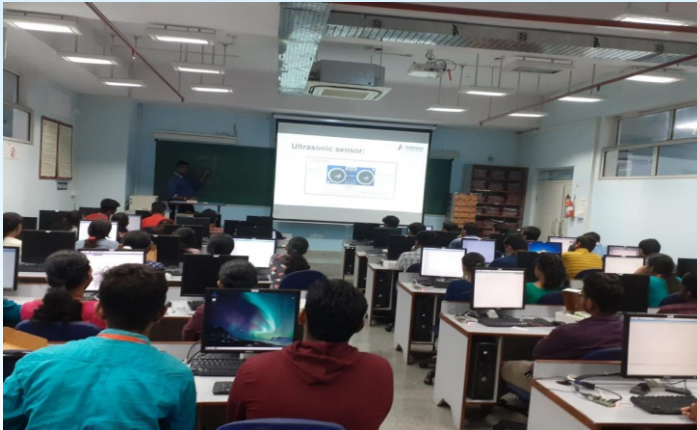


The speaker, Mr. Rajesh Krishnan, highlighted the thrust areas of Cloud computing and IoT in which industries are working. The speaker emphasized the different types of cloud computing, such as, IaaS, PaaS, and SaaS. The speaker shared tips with students to build their profile to fit into the industry, how to sharpen their skills, conceptualize the ideas and parameters to be looked into while building their resume, and the hiring principles involved.



The event was followed by the distribution of FCD mementos to meritorious students of 4th & 6th Semester B.E. A total of ninety-nine students were awarded FCD mementos. The event was coordinated by Dr. Rekha P, ISTE co-coordinator, BNMIT, and Prof. Sumathi A, Department ISTE co-coordinator, BNMIT under the guidance of Dr. P. A. Vijaya, HoD, ECE, BNMIT.

Department of Electronics & Communication Engineering conducted internships for the students of the 3rd Semester ECE from 6th to 19th October 2022. Industry mentors along with faculty mentors of ECE conducted the internship program.



The internship on **“Fundamentals of Python Programming and Raspberry Pi”** was conducted by Mr. Sandeep, Subhanu Technologies, Bengaluru with Prof. Sumathi A, Prof. Vrunda Kusanur, Prof. Keerthi Kulkarni, Prof. Lakshmi S Bhaskar, and Prof. Rohini T, faculties of ECE, BNMIT for 120 students. The course contents included Introduction to Jupyter, Variables, Iterative Statement, Functions, Strings, Lists, Tuples, and Python Libraries. Raspberry Pi Setup and IoT using Raspberry Pi were also discussed during the internship.



The internship on **“Introduction to Digital System Design using Verilog”** was conducted by Dr. Rekha P, Prof. P Prabhavathi, Dr. Subodh Kumar Panda, Prof. Anuradha J P and Prof. Vyasraj T, faculties of ECE, BNMIT for 108 students. The Internship focused on introducing Verilog HDL for designing digital systems with hands-on training. The course started with the usage of tool and the language to implement simple digital systems followed by implementing complex systems such as control system design and the data path design.

A **Five-Day Skill Development Programme on “Design of Intelligent IoT using Node MCU”** was organized by the Department of E&C for 5th Sem students from 10th to 15th October 2022. The resource persons were Mr. Akash P, Senior Software Developer, Mr. Arjun Hegde, Web Developer, Sai Kiran P, Software Integrator from SST Technologies and the internal resource person was Dr. Sreenivasa Setty, Professor, Dept. of CSE, BNMIT.



Participants of the Skill Development Programme with Resource Persons, HoD, and Staff of ECE

In the Skill Development Programme, the participants were able to get hands-on experience on CISCO packet tracker, Arduino IDE, Blynk App, Firebase console, and MIT App developer software. A Hackathon was organized where students, participants in groups of three, were given micro-projects in which they had to find solutions using these platforms and implement them on Node MCU. The topic was presented systematically to the students in a step-by-step manner. The informative SDP helped students develop various Low-cost hardware integrations using Arduino and Node MCU units.

ISTE Students Chapter-BNMIT in association with IIC-BNMIT organized a workshop on “**Entrepreneurship and Innovation as Career Opportunity**” on 14th November 2022. The guest speakers were Mrs. Farheen Farhath Co-Founder, Prinston Smart Engineers Bengaluru, and Mrs. Jeyalakshmi Venkatanarayanan, Founder of Universe Power Systems, Bengaluru.

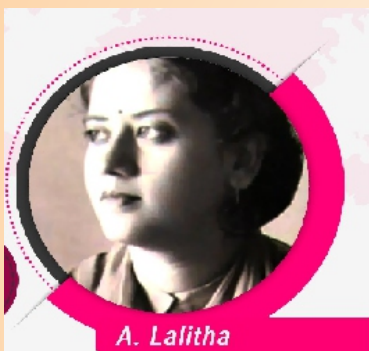


Mrs. Farheen Farhath Co-Founder, Prinston Smart Engineers Bengaluru, highlighted the importance of Innovation and Entrepreneurship. She emphasized perspectives, types of entrepreneurs, the pros and cons of entrepreneurship, and its challenges. She highlighted the benefits of being an entrepreneur. She emphasized on the different stages and hurdles she passed through in becoming a successful entrepreneur. An interactive session with the students followed the talk to clarify their queries.



Mrs. Jeyalakshmi Venkatanarayanan spoke on “Dream Big and Grow” an interactive session highlighting the importance of setting bigger goals and achieving them. She discussed about different funding agencies for starting a startup and gave more information on MSME funding. She spoke about the different schemes available in government to become an entrepreneur.

Did You Know



We all know the first Engineer of India, Sir M Visvesvaraya, but do we know the first female engineer of India?

Ayyalasomayajula Lalitha.

A. Lalitha is the first female Electric Engineer in India. Also, she was the first female student of CEG (College of Engineering), Chennai.

Lalitha was the only female engineer from India to have attended the First International Conference of Women Engineers and Scientists (ICWES) in New York in 1964.

Lalitha was elected as a member of the British Women's Engineering Society in 1965 and served as the Organising Committees' India representative for the Second International Conference of Women Engineers and Scientists (ICWES) held in Cambridge in July 1967 and ensured that five women from India were able to attend.

Alumni Speaks.....

Reflecting on my educational journey, I am overwhelmed with appreciation for the incredible experience I had at BNMIT. My time at BNMIT was a defining moment in my life, and I credit my teachers for playing a pivotal role in



my growth as an engineer. Their support during my internship in Belarus and their encouragement to take on leadership roles in my undergraduate project, prepared me for the challenges of the real world. What made BNMIT truly special was its inclusive and supportive community. The teachers and management truly cared about our personal and academic growth, creating an inspiring environment. The discipline, hard work, and gratitude that I learned at BNMIT have stayed with me throughout my life. My education at BNMIT laid the foundation for my academic journey and helped me become who I am today. I pursued a Master of Engineering and then a Ph.D. in Systems Engineering, and I am forever grateful to my alma mater for paving the way for a bright future for its alumni. As I continue to learn and grow, I will always remember the philosophy that "Education at BNMIT is for life, not just for livelihood."

Balaji R Rao

Year of Graduation 2020

Pursuing PhD in Stevens
Institute of Technology, New
Jersey

Alumni Speaks.....



When I joined BNM, little did I know that I would have some of the best years of my life, in terms of career and sports. I was encouraged and supported by the management, the sports department, and lecturers to be part of not one but two teams representing the college. I had a fantastic learning in the classes, experimenting in the labs, and sweating it out on the court. The most challenging subjects were made easy and the most boring subjects were made interesting, thanks to some amazing lecturers. I was not the easiest student to handle (IF I was inside the class), but I thank all my teachers (especially my counsellor) for being patient and putting up with all my theatrics. The rewards and recognition I received from BNM filled me with confidence to face the next chapters of my life. I am thankful to TJR sir for allowing us to choose our electives, the sports department for all their support, my counselor for keeping me out of trouble, and all the teachers who helped in shaping me.

Tejas R Simha

Year of Graduation 2019

AI Engineer, Inflect Technologies
Pvt Ltd

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