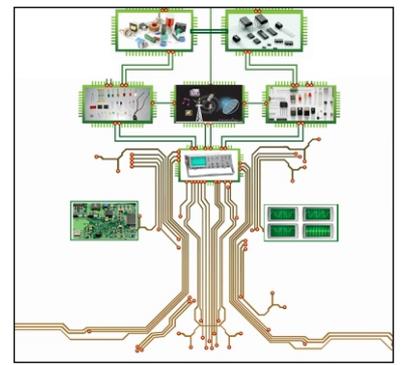


# ELECTRONICA

Newsletter

Department of Electronics & Communication  
Engineering



Volume 5

Issue 2

Jan - June 2020

## 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 **Donna Strickland**, a Canadian Physicist and **Gerard Mourou**, a French Scientist who were jointly awarded the 2018 Nobel Prize in Physics for their method of generating high-intensity, ultra-short optical pulses which has many uses, including corrective eye surgeries.



### *What's inside...*

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

*And more...*



Vidyayāmṛthamashnuthē

## *B. N. M. Institute of Technology*

(Approved by AICTE, Affiliated to VTU, Accredited as Grade A Institution by NAAC.)

All UG branches - CSE, ECE, EEE, ISE & Mech.Engg. Accredited by NBA for academic years 2018-19 to 2020-21 & valid upto 30.06.2021)

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## From the Editors' Desk

Dear Readers,

The Department of Electronics and Communications Engineering, BNMIT is delighted to present you the 2020 Summer Edition of "ELECTRONICA", the Department Newsletter.

Technological advances during this century have led to unparalleled improvements in comfort, productivity, and life span. In a global pandemic like Covid-19, technology tools are vital weapons for effectively monitoring and controlling disease outbreaks, as humans simply cannot operate and match the scale and speed at which AI powered machines can operate. Therefore, it is really essential for future engineers to keep up their spirit with the technological advancements. Thus, the Department of ECE, BNMIT is pleased to present the 2020 Summer Edition of ELECTRONICA.

The emergence of the fourth industrial revolution technologies have played a monumental role in helping mitigate and manage through this pandemic. These technologies support the underlying infrastructure for work-at-home and e-learning models to help as many individuals as possible maintain employment and educational progress. Since the inception of the newsletter, the editorial team of ELECTRONICA has been proud to provide a platform that aligns itself with the goals of Technological Advancement. This newsletter is an excellent way for the readers to read about some new technologies emerging at times like this.

ELECTRONICA gives an opportunity to the students to explore and express their interest on the newest developments in the field of electronics. It strives to provide a platform for the students to publish their ideas at a very early stage which further helps them to continue their research with confidence. It also highlights all the technical and extracurricular achievements of the students, staff achievements and the events organized by the Department of Electronics and Communication Engineering at BNMIT. The Editorial Team is indebted to its contributors for making ELECTRONICA, a content rich newsletter with topics of great interest, enabling a higher level of curiosity for our readers.

**Editorial Team**

## About the Department

The Department of Electronics and Communication Engineering started in the Year 2001. Presently, the department is headed by Dr. P.A. Vijaya. The Department has 2-programs; B.E and M.Tech (VLSI Design and Embedded Systems), affiliated to VTU. The Department has a VTU recognized Research Centre and presently there are twelve registered candidates who are pursuing doctoral degrees. 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 class rooms with LED projectors provide enhanced learning environment to cater to the budding engineers of tomorrow. During lockdown situation owing to Covid-19, the faculty conducted online classes, using various virtual classroom platforms like Zoom, Codetantra and Microsoft teams. Internal assessments, webinars and workshops were also conducted, using online platforms.

Faculty Development Programmes, workshops, seminars and invited talks for students and staff are regularly organized in the Department for continuous learning and updation of knowledge and skills. Academic performances of the students are excellent with twelve university ranks from the inception. 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 bought laurels to the Department.

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

## The Portable Furnace

The novel Coronavirus (COVID-19)— SARS-CoV-2 —is one of the most dangerous virus in the world. It originated in Wuhan, a city in China. This virus was characterised as a pandemic by the World Health Organization (WHO) on 11 March 2020.



Fig.1: Corona Virus

### How does coronavirus spread?

- The coronavirus spreads from person to person in close proximity. It is similar to the other respiratory illnesses, such as the flu.
- The droplets of bodily fluids such as saliva or mucus are dispersed in the air or on surfaces by coughing or sneezing by an infected person. These droplets can come into direct contact with other people so can infect those who touch the infected surfaces.

According to scientists, it is said that coughs and sneezes can travel several feet and stay suspended in the air for up to 10-minute. Hongxi Yin, an Associate Professor and Researcher at Washington University in St.Louis's Sam Fox School of Design & Visual Arts, has developed a portable furnace that could be placed in hospitals for instantly killing the virus that patients expel when they cough or sneeze before letting it to land on the surface or inhaled by a healthy person. He developed a theory that when a large group of people gather in relatively tight quarters breathing the same air, the rate of infection increases drastically.

Most of the hospitals release contaminated air outside, that expels it from the interior of the hospital to the outdoors, by allowing it to spread through the HVAC system. It is believed that coronavirus can be killed at a very high temperature. So, Yin and his team has developed 'The High Temperature Sterilization System' (the portable furnace) that can stop the virus in its tracks though attached HEPA which helps to purify the air. Covid-19 is different from other viruses because it stays in the air for hours. So the plume (the exhaust that hospitals release) is not helping to prevent spreading. Instead, it is causing more spread of the virus elsewhere.

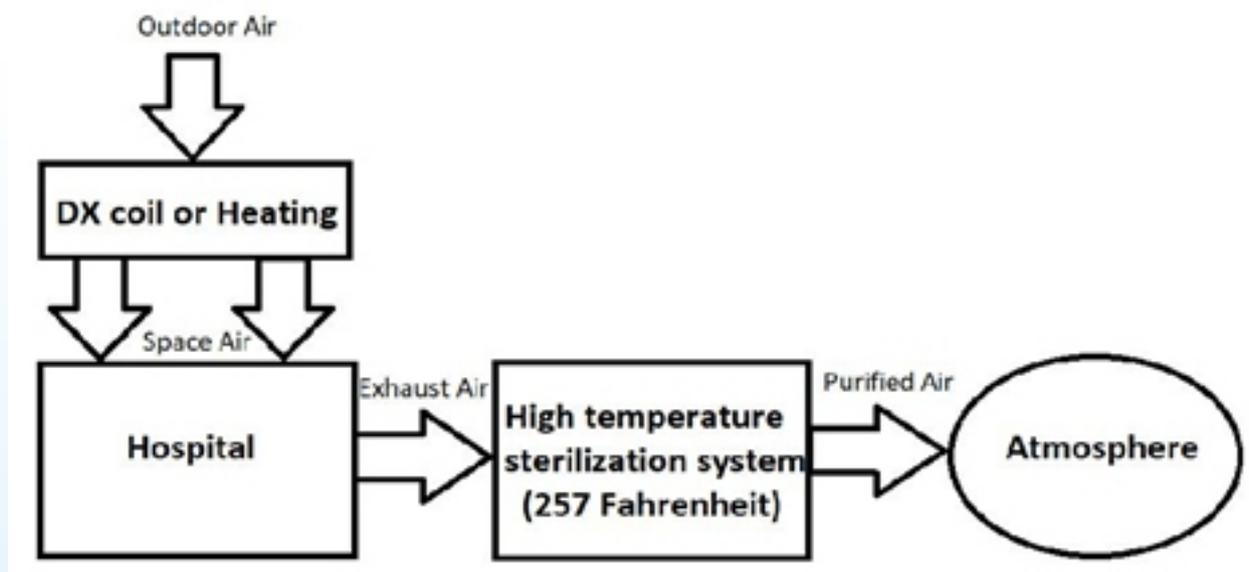


Fig.2: Working of Portable Furnace

### How does this system work?

The system will essentially suck up all the infected air, and then push it through a small portable heat chamber which will sterilize the virus at a high temperature (257-302 Fahrenheit) and releases purified and virus-free air back into the atmosphere. Researchers tell the reason for inventing a portable furnace, rather than retrofit a hospital's HVAC system is because the architecture of hospitals or any other enclosed spaces, like airports is generally inflexible so re-routing the airflow of complete HVAC systems isn't always realistic. Based on their research, the system will be able to deactivate 99.99% of the virus, if it filters through the furnace for just three seconds. Higher the temperature, the faster it kills and the system can be made smaller. They are also conducting researches to see the virus in the air before and after passing through the furnace to make sure that expelling exhaust after sterilization will not further spread the virus, beyond the confines of hospitals and other buildings.

source : <https://www.fastcompany.com/90478242/this-portable-furnace-could-stop-coronavirus-in-its-tracks>

## Digital Spine Analysis

People often complain about back pain, a physical discomfort, and doctor's advice MRI or X-ray to find out the reasons for the pain. Researchers from Germany have developed an advanced and a very accurate spine function tests, which are now being used extensively by leading physicians and orthopedics. Digital Spine Analysis has helped to build a path to non-surgical treatment of back and neck pain, that helps to approach the problem with a more holistic view.



Fig.2: Digital Spine Analyzer

**Digital Spine Analysis (DSA)** is a non-invasive test in order to measure the functioning of the spine. It is used for quantitative assessment strength, flexibility, and range of motions of the muscles, supporting the spine. DSA is a fairly cost-effective technique to determine the exact area of problem and in-turn helps the therapist to provide an appropriate spine rehabilitation therapy. This is called target spine therapy (TST). This therapy aims at treating only the weakened areas of the spine and correction of muscular imbalances. The DSA up to some extent even helps to assess spine curvature and postural abnormalities. Furthermore, the treatment also aims at improving the posture.

The DSA uses a combination of specialized computer-controlled devices that can isolate, test and measure the functional ability of every element of the spines supporting musculature in a safe and accurate manner. This test of the spine takes up to 45 minutes for completion and provides the doctor with an accurate and complete picture of the functional health of the patient's spine, clearly identifying deficiencies which cannot be detected by imaging tests like X-Rays and MRIs. The DSA is the equivalent of the stress test which a standard function test, used to detect cardiac disorders. This test of the spine takes up to 45 minutes for completion to provide the doctor with accurate results.

There are two steps involved in the diagnostic process:

**Clinical Assessment** - Starts with consultation which provides detailed history. After the consultancy, the DSA is conducted. From this test the doctor gets information about the functional ability of the patient's spine.

**Root Cause Diagnosis** - The results of this test are used to diagnose the condition of the patient's spine. Finally, a targeted treatment program is devised, based on both the initial consultation and the test findings. This program is very specific to the spinal deficiencies of the patient and helps to reverse the cause and provides a permanent solution to their back pain. Hence, it called as Target Spine Therapy.

Bqi Spine Clinic is the only facility in India which has the DSA technology. This diagnostic protocol using Digital Spine Analysis has ensured a success rate of 93% in eliminating back pain for over 2,000 patients in the last two years. They have recently opened doors in Delhi-NCR by opening two clinics, one each in West Delhi (Punjabi Bagh) and South Delhi (Greater Kailash)

Source: <https://medium.com/teamindus/space-grade-electronics-or-how-nasas-juno-survives-near-jupiter-bb57f03ae0cb>

**Rachana G Kummar & Yukthi V, VI SEM B**

## Mixed Reality, the future of everything?

Before we get into what makes mixed reality 'the future', we need to talk about the two other realities and their technologies. Namely, Virtual Reality (VR) and Augmented Reality (AR).

VR aims to immerse the user in a virtual environment which is either generated, using a computer or footage captured using a 360° camera. Augmented reality aims to do the opposite of VR by augmenting virtual objects into the users' reality. Mixed reality or hybrid reality combines both virtual and augmented reality. As Microsoft describes it, mixed reality is the result of blending the physical world with the digital world. Mixed reality is the next evolution in human, computer, and environment interaction and unlocks possibilities that before now, were restricted to our imaginations. Since mixed reality blends both physical and digital worlds, these two realities define the polar ends of a spectrum, known as the virtuality continuum. For simplicity, we refer to this as the mixed reality spectrum. On the left-hand side, we have physical reality in which we, humans, exist; on the right-hand side we have the corresponding digital reality.

Usually, the MR technology headsets are composed of a set of Sensors, Cameras, Infrared Detectors, Trackers, Gaze, Accelerometers and Microphones. The headset provides the interface between the viewer and the virtual world. But most of these MR applications will likely be deployed in the cloud.

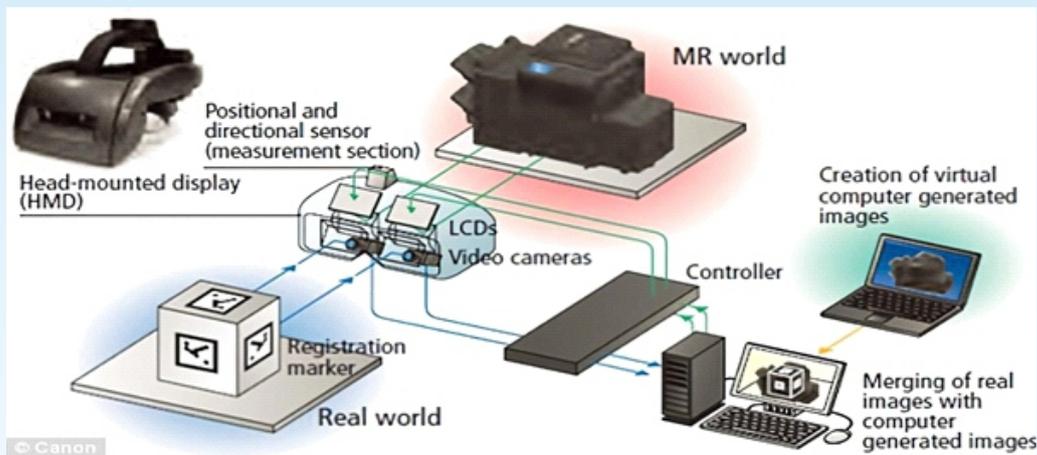


Fig. 3: Mixed Reality System setup

In today's scenario, MR is finding its applications in different fields such as Education, Engineering, Entertainment and Healthcare.

Latest trends in Mixed Reality are Advanced Displays, Real Time Space Capture, Natural Gesture Interaction, Robust Eye-tracking, and Emotion Sensing and Sharing

These trends are leading towards empathic tele-existence which is the future of Mixed Reality. Looking at the trends and technologies that are being developed in VR, AR and MR fields and the change in social behaviour, interaction of human beings indicates the empathetic computing and tele-existence will be the future of next generation.

<https://www.intel.in/content/www/in/en/tech-tips-and-tricks/virtual-reality-vs-augmented-reality.html>

**Ritwik R Sharma, VIII SEM B**

## Google's Quantum Supremacy

On October 23<sup>rd</sup>, 2019 Google achieved Quantum Supremacy. This milestone of quantum supremacy, represents a long-sought stride towards realizing the immense promise of quantum computers, devices that exploit the properties of quantum physics to speed up calculations.

Physicists have been talking about the power of quantum computing for over 30 years, but the questions have always been: will it ever do something useful and is it worth investing in? For such large-scale endeavours, it is good engineering practice to formulate decisive short-term goals that demonstrate whether the designs are going in

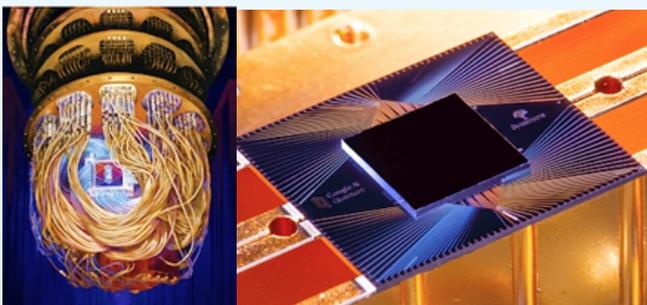


Fig. 4: Left: The Sycamore processor mounted in the cryostat  
Right: Photograph of the Sycamore processor

The results of this quantum supremacy experiment in the Nature article, Quantum Supremacy Using a Programmable Superconducting Processor. It demonstrates that a new 54-qubit processor, named Sycamore, that is comprised of fast, high-fidelity quantum logic gates, in order to perform the benchmark testing. The machine performed the target computation in 200 seconds, and from measurements in the experiment, it was determined that it would take the world's fastest supercomputer 10,000 years to produce a similar output..

Each run of a random quantum circuit on a quantum computer produces a bit string. In the experiment, they first ran random simplified circuits from 12 up to 53 qubits, keeping the circuit depth constant. They checked the performance of the quantum computer, using classical simulations and compared with a theoretical model. Once it

was verified that the system was working, they ran random hard circuits with 53 qubits and increasing depth, until reaching the point where classical simulation became infeasible.

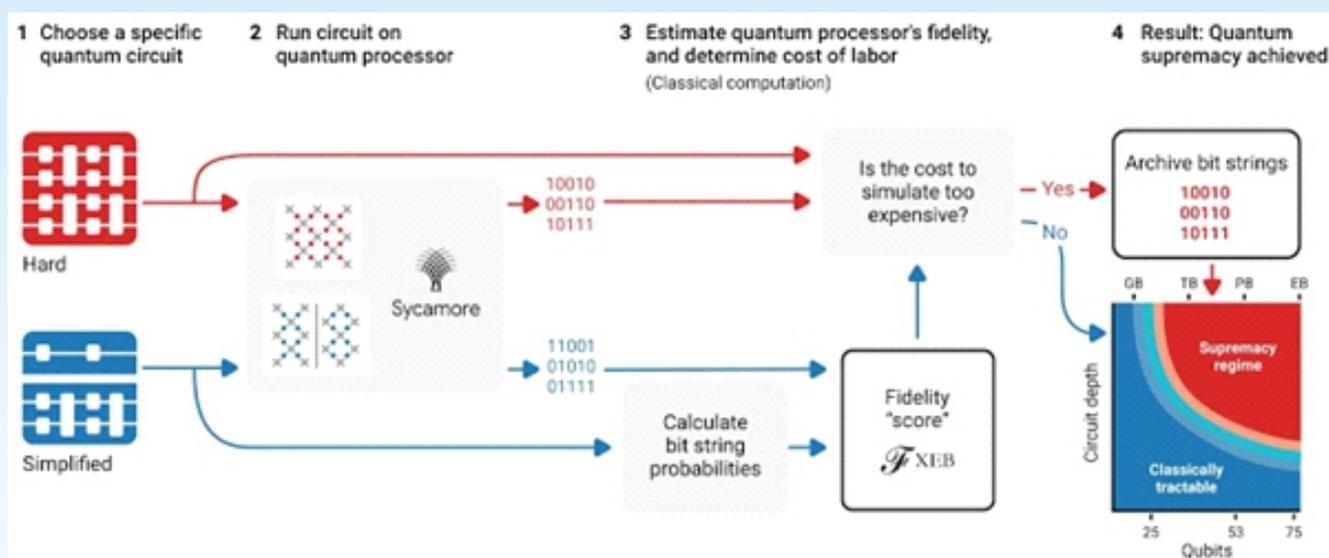


Fig. 5: Process of demonstrating Quantum Supremacy

This result is the first experimental challenge against the extended Church-Turing thesis, which states that classical computers can efficiently implement any reasonable model of computation. With the first quantum computation that cannot reasonably be emulated on a classical computer, we have opened up a new realm of computing to be explored.

Source: [www.nature.com/articles/d41586-019-03213-z](https://www.nature.com/articles/d41586-019-03213-z)

**Rakesh Kumar, VIII SEM B**

## Entralling Robotic Inventions

Ubtech has been a pioneer in the industry with its humanoid robots, including an Alexa-enabled robot that can perform yoga too. The robot Ubtech previewed at the Consumer Electronics Show (CES) expo is its most ambitious project. The Ubtech Robotics Walker is a four-foot tall bot that has true bipedal motion, which enables it to not only walk around but also go up and down stairs and even kick a soccer ball.



Fig. 6: Ubtec Robotic Walker

The version that was showcased in the CES 2018 was an early model and did not have arms but the time Ubtech Robotics Walker is available in 2019, It has all of its limbs, with a host of new abilities according to company representatives. The technology Marvel Walker is studded with sensors like cameras in its head and torso, and auto detection sensors in its feet and sides, which help the robot, know when it is close to an object. When armed with the right programming, the robot can avoid things such as chairs and tables which come in its way. Ubtech Robotics Walker responds to vocal commands as well as visual cues and its head is a large touchscreen which has a camera on the top to control your smart home, help schedule your calendar, play music and dance, patrol the home, and provide visual surveillance and motion detection.

The company is positioning the robots to enhance home life and retail environments. Walker is billed as an agile smart companion and is a bipedal robot that stands 4.75-foot tall and weighs 170 pounds. The new bot is more advanced with arms and hands that can grasp and manipulate objects. The torso of the robot is refined and offers improved self-balancing, smooth and stable walking in challenging environments, and multi-modal interaction with voice, vision, and touch. Walker uses 36 actuators and has a full range of sensing systems. Those systems give it gait planning and control with the ability to walk on multiple surfaces. The self-balancing system helps it to stay upright when disturbed by external impacts. Other features include smart home control and face and object recognition.

Source: <https://www.ubtrobot.com/?ls=en>

**Rachana BR, IVSEM B**

## From Alumni's Desk

### Automatic Emergency Calls for Motorcycles

This time we have our alumna, Vaishnavi B R from Batch 2014-18, who is currently working at Robert Bosch. She has shared an article on Automatic Emergency Calls for Motorcycles.

Being a Boschler, I would like to quote an article on how Bosch is making use of latest technology in bringing safety in motorcycles.

When an accident happens, every second counts. The quicker motorcyclists receive assistance, the greater their chances of survival. The risk of being killed in a crash is still 20 times higher for motorcyclists than for car drivers. This has led the organization to develop Help Connect, a digitally connected emergency call system for motorized two wheelers that speeds up the rescue process.

The digitally connected emergency call system uses an intelligent crash algorithm installed in the vehicle's inertial sensor unit to detect accidents. Via Smartphone app, Help Connect transmits information about the accident scene and the rider to the service centre, and from there to the emergency services, helping them find the victim more quickly. An automatic message of this sort can cut the time it takes for emergency services to arrive on the scene by up to half.



Fig. 7: Help Connect

The integrated crash algorithm enables the sensor to detect automatically whether the motorcycle has been involved in the accident or whether a mishap has caused it to fall over when being parked. It does not require an additional control unit, which makes integrating it into the motorcycle more straightforward.

It connects to an emergency app via Bluetooth. Apart from information about location, Help Connect also transmits any medical data provided by the rider to the Service center. These data may prove vital for the emergency services; other people may also be automatically contacted with the news of the accident. It connects to an emergency app via Bluetooth. Apart from information about location, Help Connect also transmits any medical data, provided by the rider to the Service Center. These data may prove vital for the emergency services; other people may also be automatically contacted with the news of the accident.

**Vaishnavi B.R**  
Employee, Robert Bosch  
Alumna, ECE, BNMIT

#### Quotes:

Genius is one percent inspiration and ninety-nine percent perspiration -

Thomas Edison

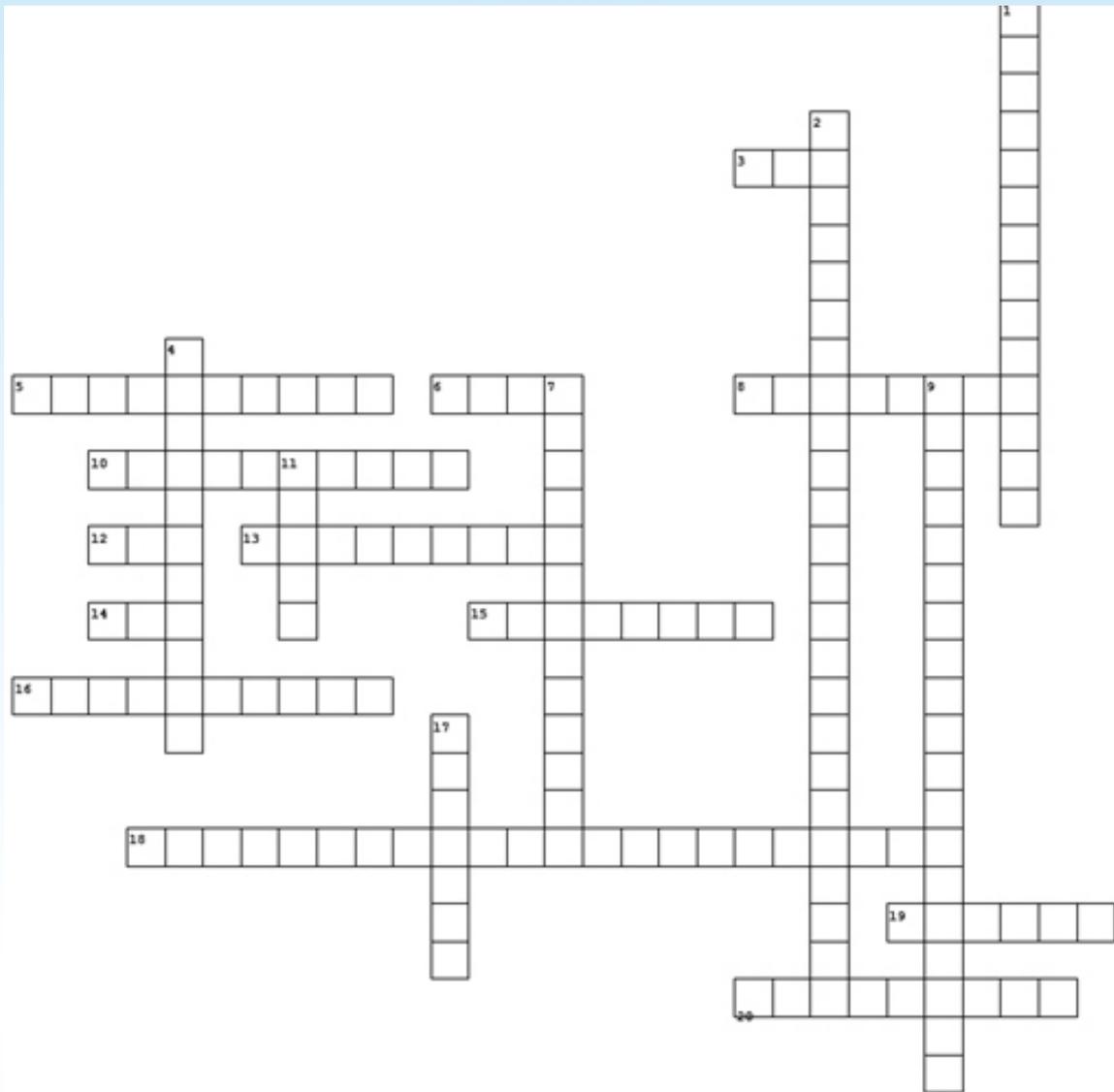
Pleasure in the job puts perfection in the work.

Aristotle

In the midst of chaos, there is also opportunity.

Sun Tzu

# Crossword



**Across**

- 3. A medium used for carrying information between computers and networks
- 4. Special hardware/software that prevents or restricts access to, or from, a network
- 5. A special type of modem that provides fast transmission speeds
- 7. A message sent or received remotely over a computer network
- 11. Hardware/software that allows communication between dissimilar networks
- 14. A combination of networks having different topologies
- 16. A data transmission method in which control bits surround each byte of data
- 18. An Internet address for the site a user wants to visit
- 19. A collection of tiny wires in which data is transmitted from
- 20. The amount of data that can travel over an analog medium

**Down**

- 1. A special type of computer that allows other computers to share its resources
- 2. The simultaneous transmission of information of data in both directions at the same time
- 6. A type of server that allows multiple users to share the same printer
- 8. A wide-area network limited to a specific geographical area
- 9. A set of codes used to create pages for the World Wide Web
- 10. A computer used to facilitate the sending and receiving of electronic mail messages
- 12. An internet service provider that serves one or more states
- 13. A set of rules and procedures for exchanging information between network devices and computers
- 15. An extra bit added to a byte to ensure there is always either a predetermined even or odd number of bits
- 17. A computer and its associated storage devices that are accessed remotely over a network by users

**Answers**

1. Protocol	6. file server	11. asynchronous transmission	16. full-duplex transmission
2. Bandwidth	7. communications medium	12. HTTP	17. hybrid topology
3. Gateway	8. e-mail	13. firewall	18. MAN
4. parity bit	9. regional ISP	14. URL	19. bus
5. Mail server	10. cable modem	15. server	20. printer server

## EVENTS ORGANIZED BY THE DEPARTMENT

A 5-day Faculty Development Program was organized on ‘**Digital Design Flow using Xilinx and MATLAB Tools for Image Processing Applications**’ by industry experts from CoreEL Technologies (I) Pvt. Ltd. from 20<sup>th</sup> – 24<sup>th</sup> Jan 2020.

Skill Development Program for 6<sup>th</sup> Semester students was conducted on ‘**Rapid Prototyping for Embedded System Applications**’ by Mr. Mohan H. M., Mr. Avikumar and Mr. Shivaraj, Digital Shark Technology, Bangalore during 3<sup>rd</sup> to 12<sup>th</sup> Feb 2020.

Skill Development Program for 6<sup>th</sup> Semester students was conducted on ‘**Data Science and Machine Learning using Python**’ by Mr. Md. Sikander from Cranes Technology during 3<sup>rd</sup> to 12<sup>th</sup> Feb 2020.

Skill Development Program for 6<sup>th</sup> Semester students was conducted on ‘**SoC based IoT system using Xilinx Vivado**’ by Mr. Arun John Mathias and Mrs. Roli Srivastava from CoreEL Technologies Pvt. Ltd during 3<sup>rd</sup> to 12<sup>th</sup> Feb 2020.

An ‘**Industrial Visit**’ to Research Institute, Indian Institute of Science, Bengaluru was organized in association with ISTE Student Chapter – BNMIT for 4<sup>th</sup> Semester students on 29<sup>th</sup> Feb 2020.

Distinguished **Webinar Series** was organized by IEEE-BNMIT Student Branch during 27<sup>th</sup> May to 3<sup>rd</sup> June 2020.

Technical Webinars on ‘**Information Security Risk and Compliance**’ by Mr. Vijay Kumar, Director, VMWare Information Security Risk and Compliance and ‘**Speech Processing**’ by Mr. Murali Mohan Deshpande, Director, NXP Semiconductors were organized for 4<sup>th</sup> Semester students by IEI Students' Chapter on 4<sup>th</sup> and 5<sup>th</sup> June 2020.

A two-day online workshop on ‘**Introduction to Data Science using Python**’ was organized by ISTE Student Chapter – BNMIT for 4<sup>th</sup> Semester students on 4<sup>th</sup> and 5<sup>th</sup> June 2020.

## STAFF ACHIEVEMENTS

Mrs. Padmaja Jain completed Comprehensive Viva of her PhD titled ‘Integrated optics delays lines in GaAs/InP platform’ at RNSIT research Center on 19<sup>th</sup> Mar 2020.

Dr. Jyoti R Munavalli has delivered a talk on ‘Why should you be learning Data Science at this time?’ in IEEE-BNMIT Distinguished Webinar Series on 29<sup>th</sup> May 2020.

Dr. Yashajyothi M Shirur has delivered a talk on ‘Online Education: Pros and Cons’ in IEEE-BNMIT Distinguished Webinar Series on 1<sup>st</sup> June 2020.

Dr. Rekha P has delivered a talk on ‘Research opportunities in the Design and Development of Aroma sensors’ in IEEE-BNMIT Distinguished Webinar Series on 2<sup>nd</sup> June 2020.

Mrs. Chaitra N completed open seminar of her PhD titled ‘Recognition of Autistic Individuals using Pattern Analysis Techniques on Brain Imaging Data’ at BNMIT Research Center on 12<sup>th</sup> June 2020.

Dr. P. A. Vijaya has delivered a talk on ‘Muktspectral Image Processing of Remotely Sensed Data’ in Two Days National Webinar on Research trends in Image Processing and Pattern Recognition’ organized by Brindavan Engineering College, Bangalore on 29<sup>th</sup> June 2020.

## STAFF PUBLICATIONS

Jyoti R Munavalli, Shyam Vasudeva Rao, S., Aravind and G.G van Merode published a paper titled ‘An Intelligent Real-time Scheduler for Out-Patient Clinics: A Multi-Agent System Model’ in Health Informatics Journal, Feb 2020.

Bhuvana Suganthi D, Manjunath R, Punitha A and Raghupathy S published a paper titled 'Improved Caching and Trust based Reliable Mobile Communication in Distributed Environment' in International Journal of Engineering and Advanced Technology, Vol. 9, No. 3, Feb 2020.

Pragnya Patil and Subodh Kumar Panda published a paper titled ‘Complex Multiplier Architectures on VLSI’ in Perspectives in Comm, Embedded-Systems and Signal-Processing-An International Journal, Vol. 4, No. 1, Apr 2020.

Smitha A, Dr. P A Vijaya published a paper titled ‘Design & Verification of I2C Protocol using DUC and DDC’ in , International Journal on Perspectives in Comm, Embedded Systems and Signal Processing, Vol. 3, No. 12, June 2020.

P.L. Lahari, M. Bharathi and Yasha Jyothi M Shirur, presented a paper titled ‘An efficient MAC using Approximate Adders for Image and Video Processing Applications’ in the 4<sup>th</sup> International Conference in Electronics and Informatics organized by SCAD college of Engg and Technology, Tamilnadu, India during 15-17, June 2020.

Priyadarshini K. Desai and Basavaraj Neelgar published a paper titled 'Dual Band Operating Rectangular Patch Antenna for mm-Wave' in International Conference on Recent Trends In Science & Technology (ICRTST - 2020) in association with IETE and CSI, India at ATME College of Engineering, Mysore during 17<sup>th</sup> - 18<sup>th</sup> June 2020.

Priyadarshini K. Desai and Basavaraj Neelgar published a paper titled 'Patch Antenna Parameters Analysis with and without SIW Cavity' in International Conference on Smart Modernistic in Electronics and Communication (ICSMEC - 2020) at St. Martin's Engineering College, Dhulapally, Secunderabad during 29<sup>th</sup> - 30<sup>th</sup> June 2020.

Basavaraj Neelgar, Sreenidhi B, Sri Krishna Yadav, Sujith S B and Swastik Kela published a paper titled 'Pi Skate - An Electric Skateboard' in International Conference on Smart Modernistic in Electronics and Communication (ICSMEC - 2020) at St. Martin's Engineering College, Dhulapally, Secunderabad during 29<sup>th</sup> - 30<sup>th</sup> June 2020.

N Shesha Prasad, Aishwarya J, Apoorva S M, Deepika R and Navya H N published a paper titled 'Design of an Ultra-Wide Band Fractal Antenna for Various Wireless and IoT Applications' in International Research Journal of Advanced Engineering and Science, Vol. 5, No. 2, 2020.

## **STUDENTS' ACHIEVEMENTS**

### **Technical Achievements**

Manaswini M, Nisarga U and Namratha V of 8<sup>th</sup> ECE B were selected in a Hackathon at college level and were also selected for Smart India Hackathon at national level.

Nagaveni G R of 4<sup>th</sup> ECE B awarded Best Student of the ISTE Students Chapter - BNMIT at the 16<sup>th</sup> Karnataka State Level ISTE Student Convention held on 22<sup>nd</sup> Feb 2020 at KSIT, Bangalore.

Srinivasan R of 4<sup>th</sup> ECE B and team has won Best Paper Award for the paper titled 'Blockchain in Cybersecurity' during the 16<sup>th</sup> Karnataka State Level ISTE Student Convention held on 22<sup>nd</sup> Feb 2020 at KSIT, Bangalore.

Mohammed Azeem and Mrigank Gupta of 4<sup>th</sup> ECE B has won second Prize in 'Meme war' organized at the 16<sup>th</sup> Karnataka State Level ISTE Student Convention held on 22<sup>nd</sup> Feb 2020 at KSIT, Bangalore.

### **Papers Presented & Published in Conferences:**

Chandu B, Akash Munikoti, Karthik S Murthy, Ganesh Murthy V and Chaitra Nagaraj published a paper titled 'Automated Bird Species Identification using Audio Signal Processing and Neural Networks' in International Conference on Artificial Intelligence and Signal Processing (AISP) organized by VIT-AP, Amaravati, India during 10<sup>th</sup> - 12<sup>th</sup> Jan 2020.

Shravya K Holla, Keerthi S and Vidhya Dhari L published a paper titled 'IoT based smart car parking system' in International Journal of Advance Research, Ideas and Innovations in Technology (IJARIIT), Vol. 6, No. 2, Apr 2020.

Chetana Saligram, Deepali B K, Gowri K S, J Ajay Kumar and Jyoti R Munavalli published a paper titled 'Symptoms Extraction from a Voice Input using Natural Language Processing' in International Journal of Engineering Research & Technology, Vol. 9, No. 4, Apr 2020.

Anush Kumar R, Nisarga Umesh and Yasha Jyothi M. Shirur published a paper titled 'Design and Development of Beach Sand Cleansing Equipment based on Electro-Hydraulic Mechanism' in International Journal of Advanced Science and Technology, Vol. 29, No. 12s, 2020.

Anirudha V, Hrishikesh Ravish, K. U. Prasad Bhat, Prabhavathi P and Kumaraswamy K V presented paper titled 'Design and Verification of PCIe 3.0' in IETE sponsored Third National Conference on Emerging Trends in Engineering, Science and Technology, RNSIT, 17<sup>th</sup> June 2020 and also won a Best Paper Award for it.

Gopika S kumar, Anagha G, Ananya G A and Priya R Sankpal published a paper titled 'GUI based Multi-Modal Biometrics' in International Journal of Engineering Research & Technology, Vol. 9, No. 6, June 2020.

Keerthan.N, Keerthi.S, Likhith.S, M. Samyama and Anuradha.V. Rao published a paper titled 'Skin Cancer Detection Using Image Processing' in Journal of Emerging Technologies and Innovative Research, Vol. 7, No. 6, June 2020.

Inchara S, Girija Unnibhavi, Alankritha T V and Ashwini S Savanth published a paper titled 'Sthree Raksha: Panic Intimation Device For Women' in International Journal of Emerging Technologies and Innovative Research, Vol. 7, No. 6, June 2020.

Varshini K Shetty, S Samhitha, Sushma and Ashwini S Savanth published a paper titled 'Driver Assisting Smart Vehicle System Using Raspberry Pi' in International Journal of Emerging Technologies and Innovative Research, Vol. 7, No. 6, June 2020.

Harshitha Prasad Rao, Anirudh M.R, Diksha U.S and Bhuvana Suganthi D published a paper titled 'Portable Intrusion Detection System' in International Journal of Engineering and Advanced Technology, Vol. 9, Issue 5, June 2020.

## DEPARTMENTAL EVENTS



Signing of MoU between BNMIT and Digital Shark Technology Private Limited, Bangalore on 3<sup>rd</sup> Feb 2020



Signing of MoU between AGIMUS Technologies Pvt. Ltd., Bangalore and BNMIT to Set up Industry Standard IoT Lab on 19<sup>th</sup> Feb 2020.



Fourth Semester students at Research Institute, IISc, Bengaluru during Industrial Visit on 29<sup>th</sup> February 2020



Faculty participants at CoreEL Technologies, Pvt Ltd., Bengaluru during Industrial Visit (as a part of FDP) during 20<sup>th</sup> -24<sup>th</sup> Jan 2020.



Nagaveni G R (4<sup>th</sup> ECE B) receiving award "Best Student of the ISTE Students Chapter - BNMIT" at the 16<sup>th</sup> Karnataka State Level ISTE Student Convention on 22<sup>nd</sup> Feb 2020, KSIT, Bangalore.



## EDITORIAL TEAM

### FACULTY MEMBERS

**Dr. Jyoti R Munavalli**  
Associate Professor, ECE

**R. N. Tiwari (Asst. Prof.)-English**  
Training & Placement

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**Shravya Holla, VIII ECE B**  
**Greeshmaa S., VI ECE A**  
**Nagaveni G. R., IV ECE B**

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