# INSPIRE

# **JUN-2020**

#### Vol - 5

#### Issue - 2

# **Department of Information Science & Engineering**

#### 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 premier department of learning in Information Science and Engineering in the state of Karnataka, moulding students into professional Engineers

#### Mission

- Provide teaching-learning process that develops core competencies in Information Science and Engineering to meet the needs of the industry and higher education
- Create an environment for innovative thinking and self-learning to address the challenges of changing technology
- Provide an environment to build team spirit and leadership qualities to succeed in professional career
- Empathize with the societal needs and environmental concerns in Information Science and Engineering practices





Edward Hance Shortliffe is an American biomedical informatician, physician, and a computer scientist born in 1947 in Canada. Shortliffe is a pioneer in the use of Artificial Intelligence (AI) in medicine. He is also regarded as the founder of the field of biomedical informatics. In 2006 he received the Morris F. Collen Award given by the American College of Medical Informatics. He was the principal developer of the clinical expert system MYCIN, one of the first rule-based Artificial Intelligence Expert Systems. MYCIN obtained clinical data interactively from a physician user and was used to diagnose and recommend treatment for severe infections. MYCIN used Artificial Intelligence to identify bacteria causing severe infections, such as bacteremia and meningitis, and to recommend antibiotics, with the dosage adjusted for patient's body weight. The MYCIN system was also used for the diagnosis of blood clotting diseases. Its performance was shown to be comparable to and sometimes more accurate than that of Stanford infectious disease faculty. This spurred the development of a wide range of activity in the development of rule-based expert systems, knowledge representation, belief nets and other areas, and its design greatly influenced the subsequent development of computing in medicine. MYCIN was developed over five or six years in the early 1970s at Stanford University. It was written in Lisp as the doctoral dissertation of Edward Shortliffe. We dedicate our current edition of "Inspire" with the theme "AI for Health Care" to Shortliffe.



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.E Accredited by NBA for academic years 2018-19 to 2020-21 & valid upto 30.06.2021) Post Box No.7087, 27th cross, 12th Main, Banashankari II Stage, Bengaluru- 560070, INDIA Ph: 91-80- 26711780/81/82 Email: principal@bnmit.in, bnmitprincipal@gmail.com , www. bnmit.org

#### Message from the Editorial Team

Greetings from the editorial team! It gives us immense joy and satisfaction to present the second issue of the fifth volume of our Department newsletter 'INSPIRE'. As Engineers, we must aim to contribute our solutions to the needs and problems of the society. The world is changing and the ability for healthcare professionals to understand the day-to-day patterns and needs of the people they care for is limited. We, the technical people can collaborate with the healthcare expertise in a plethora of ways to contribute our solutions and aid the expertise in decision making, data analysis, feedback system and so on. Keeping this in mind, we bring you this edition of the newsletter with the theme 'Artificial Intelligence for Health Care'. We hope that this edition will Inspire you to be the part of the change that technology can bring to this world. We hope you enjoy reading this issue as much as we have in presenting it.

# About the Department

The Department of Information Science and Engineering (ISE) is presently headed by Dr. Shashikala, a veteran Professor. The Department was established in the year 2001 with an intake of sixty students. Since its inception, the Department has paved a path of technical excellence and innovative teaching methods. It comprises highly qualified, research-oriented teaching staff, committed to instill moral values among students, in addition to providing cutting edge technical knowledge. The Department has well equipped laboratories with state-of-the-art computational facilities.

The current semester has been most challenging for the faculty members and the students alike, because of the COVID-19 pandemic. The Department faculty members have used various Information and Communication Technology (ICT) tools and Innovative Teaching Methodologies for the smooth conduction of online classes. Several webinars, online presentations and trainings have been conducted as a part of the professional society bodies viz. Computer Society of India (CSI), Institution of Engineers (IE), Indian Society for Technical Education (ISTE) and Board for IT Education Standards (BITES).



Faculty Development Program on 'Research and Innovation for Growth' from 20<sup>th</sup> to 24<sup>th</sup> January 2020

#### INSPIRE

#### **Artificial Intelligence for Detecting Skin Cancer**



Artifical Intelligence (AI) is certainly the future, and so it's only getting better. The subset of AI is Machine Learning. Machine Learning uses large datasets, powerful computers and computational method to identify complex patterns in real-world data. The yielding observations, associations and predictions match or exceed human capabilities. AI based imaging systems help dermatologists to take a new approach to the digital diagnosis of skin cancer by delivering the results in a matter of seconds. Today, algorithms are already performing

better than radiologists at reading X-ray images and spotting malignant tumors.

Melanoma is the most serious type of skin cancer, which develops in the cells (melanocytes) that produce melanin, the pigment that gives your skin its color. Malignant Melanoma is relatively uncommon, as compared to the other forms of skin cancer. However, the incidents of melanoma is increasing faster than any other form of cancer, and it is responsible for the majority of skin cancer deaths. Artificial Intelligence systems can be used to detect melanoma at an early stage, using deep learning techniques. The algorithm is trained with a large number of dermoscopic images. There's one technology called MelaFind that uses infrared light to evaluate pigmented lesions up to a few millimeters below the skin. Then, sophisticated AI algorithms evaluate the scanned data to diagnose melanoma. The findings of this diagnostic trial demonstrate that an AI algorithm, using different camera types, can detect Melanoma with a higher level of accuracy as specialists. There's also an app called SkinVision that allows you to take a picture of your own mole that uses a computer algorithm to try and give you an assessment of that mole.

The potential for AI in dermatology is immense in prevention, detection, diagnosis and treatment. AI can be used as a tool to aid the dermatologist, as well as eliminating repetitive tasks. It has been demonstrated that humans and AI working together achieve a higher level of accuracy in diagnosis and prognosis. Neural networks are already able to use complex algorithms to identify patterns that humans cannot. AI could result in greater diagnostic capability and optimized patient care. However, they are difficult to train, there are ethical and legal concerns, and fundamentally humans prefer human contact which casts doubt on the complete replacement of dermatologists by AI.

SOURCE: https://www.healthline.com/health-news/ai-may-be-better-at-detecting-skin-cancer-than-your-derm#2

Lubna N 6<sup>th</sup> Sem

#### Artificial Intelligence for Detecting Eye Diseases

Artificial Intelligence can detect eye diseases as accurately as a doctor. The AI system recommends the correct referral decision for more than 50 eye diseases. More than 285 million people worldwide live with some form of sight loss. Eye diseases remain one of the biggest causes of sight loss, and many can be prevented with early detection and treatment. Dr Pearse Keane, consultant ophthalmologist at Moorfields Eye Hospital NHS Foundation Trust and NIHR Clinician Scientist at the UCL Institute of Ophthalmology found that the number of eye scans performed were growing at a pace much faster than human experts are able to interpret them. The AI technology can prioritise patients who need to be seen



and treated urgently by a doctor or eye care professional. If the doctors can diagnose and treat eye conditions early, it will give them the best chance of saving people's sight.

Diabetic retinopathy is an eye condition that can cause vision loss and blindness in people who have diabetes. It affects blood vessels in the retina. Some of the types of diabetic eye disease are Cataract and Open-angle glaucoma. AI has been used to support the early diagnosis of diabetes-related eye diseases, one of the main causes of blindness.

Researchers, led by RMIT University have developed an algorithm that processes image and can automatically detect fluid on the retina of the eye, one of the key signs of the disease. It has an accuracy rate of 98 %. With 191 million people set to be affected by 2030, diabetic retinopathy is the leading cause of vision loss in adults. Its impact is that it has grown worldwide. IDx-DR is the first device to be approved by the US FDA to provide a screening decision without the need for a clinician. Advances in computing and the availability of large data sets of retinal images have spurred the development of AI systems for detecting not only diabetic retinopathy, which is relatively easy to spot, but also other common eye diseases such as AMD and glaucoma.

Machine-learning technology has been successfully trained on thousands of historic de-personalised eye scans to identify features of eye disease and recommend how patients should be referred for care. Disease screening with AI represents a great opportunity for eye care practitioners to improve outcomes. Referral of patients to an ophthalmologist for further evaluation and treatment will help to facilitate timely and accurate diagnosis and potentially prevent vision loss.

**SOURCE:** https://collaborativeeye.com/articles/nov-dec-19/the-role-ofartificial-intelligence-in-detecting-diabetic-retinopathy/

#### Saba Farheen 6<sup>th</sup> Sem



What is the first thing that comes to your mind when you hear about cancer? Did you say 'Death?' If you did, you are right. According to the World Health Organization report, 20% of males and 17% of females develop cancer during their lifetime, and 12.5% of males and 9% of females die from the disease. Cancer is basically just a mutation of the normal body cells

into tumor cells that can eventually kill the patient. A single human genome contains 3 billion base pairs. Three billion is a massive number to identify where a mutation can occur, it's practically impossible, manually. And this is where Artificial Intelligence comes in.

#### Can AI win the battle against cancer?

About 30–50% of cancers can currently be cured if patients are managed correctly and given the best possible treatment at the right time. AI helps in detecting precancerous lesions in tissues, thereby increasing the accuracy of cancer screening tests. AI-tools help radiologists with visually analysing images and by highlighting suspicious lesions which could be malignant.

In context of breast cancer, Ultrasound Elastography is one of the techniques which can be used to test the stiffness of the breast tissue .The distortion produced when the tissue vibrates, will highlight the areas which differ from the surrounding tissues .This is achieved by comparing the properties of the tissue like coarseness, stiffness, etc. By this method the doctors could analyse whether the lesion was cancerous. Nanotherapy is another method where nanoparticles loaded with the drug can target cancer cells or tumor's without harming healthy cells in the surrounding environment.

Deep learning algorithms have been proved to reduce false positives by 11%. Integration of AI technology in cancer care could improve accuracy and speed of diagnosis, aid clinical decision-making and advancement in the healthcare industry. The necessity of the hour is to make use of artificial intelligence to develop a transparent patient specific and highly precise algorithm that can not only detect as well as cure cancer before it is too late.

Deepti Teragunti 4<sup>th</sup> Sem

# **AI-A Supporting Aid to Doctors**



Artificial Intelligence (AI) research within medicine is growing rapidly. In 2016, healthcare AI projects attracted more investment than AI projects within any other sector of the global economy. The complexity and rise of data in healthcare means that artificial intelligence (AI) will increasingly be applied within the field. Several types of AI are already being employed health care, and life sciences companies. The key categories of applications involve

diagnosis and treatment recommendations, patient engagement and adherence, and administrative activities.

Informed clinical decision being taken through insights from past data, is the essence of evidence-based medicine. Traditionally, statistical methods have approached this task by characterizing patterns within data as mathematical equations. For example, linear regression suggests a 'Line of Best Fit'. Through 'Machine Learning' (ML), AI provides techniques that uncover complex associations that cannot easily be reduced to an equation. For example, neural networks represent data through vast numbers of interconnected neurons in a similar fashion to the human brain. This allows ML systems to approach complex problem solving just as a clinician might-by carefully weighing evidence to reach reasoned conclusions.

The prime concern of the health community is that AI is overtaking the roles and tasks of human doctors, specialized in their respective fields, but they could not be any farther from the truth, machines lack human qualities such as empathy and compassion, and therefore patients must perceive that consultations are being led by human doctors. Furthermore,

**SOURCE:** https://thenextweb.com/artificial-intelligence/2019/05/01/ai-is-already-changing-how-cancer-is-diagnosed/

#### **INSPIRE**

patients cannot be expected to immediately trust AI; a technology shrouded by mistrust. Therefore, AI commonly handles tasks that are essential but limited enough in their scope so as to leave the primary responsibility of patient management with a human doctor. There is an ongoing clinical trial, using AI to calculate target zones for head and neck radiotherapy more accurately and far more quickly than a human being. An interventional radiologist is still ultimately responsible for delivering the therapy but AI has a significant background role in protecting the patient from harmful radiation. The development of AI tools in healthcare will be satisfactory for everyone, only by initiating a collaborative effort, among all those involved.

#### **References:**

- 1. EMERGE- The AI Research and Advisory Company.
- 2. PMC-US National Library Medicine National Institutes of Health.

C M Sushma 8<sup>th</sup> Sem



**Artificial Intelligence in Medicine** 

Artificial Intelligence (AI) is a Computer Science Technology that uses algorithms, heuristics, pattern matching, rules, deep learning and cognitive computing to approximate conclusions without direct human input. By using AI, researchers can take on complex problems that would be difficult or almost impossible for humans to solve. Since AI can identify meaningful relationships in raw data, it can be used to support diagnosis, treatment and prediction outcome in many medical situations. AI has the potential to be applied in almost every field of medicine, including drug

development, patient monitoring and personalized patient treatment plans.

Artificial Intelligence is patterned after the brain's neural networks. It uses multiple layers of non-linear processing units to 'teach' itself how to understand data - classifying the record or making predictions. AI can synthesize electronic health record (EHR) data and unstructured data to make predictions about patient health. For instance, AI software can quickly read a retinal image or flag cases for follow up when multiple manual reviews would be too cumbersome. Doctors benefit from having more time and concise data to make better patient decisions.

AI can be used in variety of ways in medicine. Here are four examples:

#### **Annotator for Clinical Data**

Around 80% of healthcare data is unstructured, and AI can read and understand unstructured data. AI's ability to process natural language allows it to read clinical text from any source and identify, categorize and code medical and social concepts.

#### **Insights for Patient Data**

Artificial intelligence can identify the problems contained in patients' historical medical records – both in the structured and unstructured text. It summarizes the history of their care around those problems and can provide a cognitive summary of a patient records.

#### Patient Similarity

AI can identify a measure of clinical similarity between patients. This allows researchers to create dynamic patient cohorts, rather than static patient cohorts. It also enables an understanding which care path works better for a given group of patients.

#### Medical Insights

With AI technologies, researchers can find information in unstructured medical literature to support hypotheses - helping in the discovery of new insights. AI can read through a complete set of medical literature, such as Medline, and identify the documents that are semantically related to any combination of medical concepts.

**SOURCE:** http://sitn.hms.harvard.edu/flash/2019/artificial-intelligence-in-medicine-applications-implications-and-limitations/

#### Mahesh Kumar S 6<sup>th</sup> Sem



# **Robotic Surgery**

Robotic Surgery is a method to perform surgery using very small tool attached to a robotic arm. The surgeon controls the robotic arm with a computer. Roboticallyassisted surgery was developed to try to overcome the limitations of pre-existing minimally-invasive surgical procedures and to enhance the capabilities of surgeons performing open surgery. Its history begins with the Puma 560, a robot used in 1985 by Kwoh et al to perform neurosurgical biopsies with greater precision.

Robotic or Robotic assisted surgery integrates advanced computer technology with the experience of the skilled surgeons. This technology provides the surgeon with a 10x magnified, high-definition, 3Dimage of the body's intricate anatomy. The surgeon uses

controls in the console to manipulate special surgical instruments that are smaller, as well as more flexible and manoeuvrable than the human hand. The robot replicates the surgeon's hand movements, while minimizing hand tremors. The surgeon, thus can operate with enhanced precision, dexterity and control even during the most complex procedures.

During a Robotic-assisted surgery, the surgeon directs the surgery from nearby, but does not stand over the patient like a traditional surgery. The surgeon makes a tiny incision (one or two centimeter) in the patient's body and inserts a miniature robotic instrument and a powerful camera into the body. The surgeon will sit at a nearby console (a large computer) to direct the procedure. At the console, the area of operation can be seen highly magnified, with excellent resolution. Sitting at the console, the surgeon controls it. The instruments respond to these movements and translate them into precise, real-time movements inside the body. The robotic devices which have greater dexterity and range of motion than a human, allow the surgeon to successfully perform delicate surgeries in hand-to-reach places.

Many conditions have been successfully treated, using Robotic-assisted surgery. These include colorectal surgery, general surgery, gynecological surgery, heart surgery, endometriosis, transoral surgery, thoracic surgery and urologic surgery.

SOURCE: https://www.uclahealth.org/robotic-surgery/what-is-robotic-surgery

Sourav N R 6<sup>th</sup> Sem

#### Can AI help to deal with the pandemics?



Artificial Intelligence (AI) is one of the most influential information technology revolutions. AI is providing real time solutions to problems in various fields. The novel coronavirus disease has posed several issues and challenges to the mankind. The application of AI to resolve any of these issues must be thought of. The healthcare systems are overburdened because of resource limited settings and poor disease surveillance systems. This calls for a tailored strategic response for these settings. There is a growing concern about a failure to find and report cases. Access to accurate diagnosis, monitoring and reporting of health outbreaks requires a well-resourced healthcare system. Evidence shows that most resource limited countries lack an

effective, rapid surveillance system. These settings also have a limited availability of health technologies for the electronic surveillance of infectious diseases to facilitate the prevention and containment of emerging infectious diseases such as COVID-19. Universal health coverage, access to high-quality and timely pathology and laboratory medicine (PALM) services is crucially needed to support health-care systems that are tasked with achieving Sustainable Developmental Goals.

Emerging health innovations such as Blockchain and Artificial Intelligence can be coupled with point of care diagnostics to enable self-testing of patients in isolation as a result of exposure to COVID-19. Blockchain is a digital, public ledger that records online transactions. It involves the digital distribution of ledger and consensus algorithms and eliminates all the threats of intermediaries. Mobile connected point-of-care diagnostics and self-testing has been successfully implemented in resource limited setting. Bearing in mind the era of COVID-19 and the evidence on the overburdened healthcare systems and poor disease surveillance systems in resource limited settings, and taking advantage of the available mobile Health systems, a rapid development and deployment of low cost blockchain and AI coupled Health connected self-testing and tracking systems as one of the strategic response strategies for COVID-19 and other emerging infectious diseases is recommended.

The initial step for this system is through a mobile phone or tablet application which could be adapted from existing self-testing apps. The app will request a user's personal identifier before opening pre-testing instructions. Following testing, the user can upload results into the application. The Blockchain and AI system can enable the transfer of the test result to alert the outbreak surveillance authorities of all tests performed as well as the number of positive and negative test results. This can help ensure that all positive cases are referred to a quarantine site for treatment and monitoring. The in-built geographic information system in mobile devices can enable the tracking of the people who tested positive. This system can also be connected to the local and international databases to ensure appropriate surveillance and control of the outbreak.

The AI component, of this technology will enable potent power in data collection, security, analysis, and curation of disparate and clinical data sets from federated Blockchain platforms to derive triangulated data at very high degrees of confidence and speed. Local development of these diagnostics can help overcome the supply chain challenges and the cost which can limit accessibility of point of care diagnostics in resource limited settings. This technology can be adapted for use in community-based case finding of other infectious diseases such as HIV, TB and Malaria, which may be exacerbated by the current COVID-19 outbreak.

SOURCE: https://www.ncbi.nlm.nih.gov/pmc/articles

Disha Maru 6<sup>th</sup> Sem

# (Achievements of Students)

#### **Technical:**

- Akhilesh M, Abhilesh M and Brahma S P of 6<sup>th</sup> Semester under the guidance of their mentor Mrs. Madhura Prakash M and Dr. Vijayashree L, Head-New Gen IEDC, ED cell have developed 'Balance Mate', a weight distribution monitoring and guidance system. The team has been selected by IISc incubation center for starting their company and for work in IISc. A patent has also been applied for this project in the year 2019.
- 2. **Deepti Teragunti, S. Amith Nadig, Sachin P, Sahana Hegde and Rakshitha G R** of 4<sup>th</sup> Semester had been selected at the college level of Internal Hackathon for Smart India Hackathon 2020.
- 3. **Pratheek Joshi** of 4<sup>th</sup> Semester is Social Media Manager and Graphic Designer for IEEE BNMIT Student branch, for the year 2020-21.
- 4. S. Amith Nadig of 4<sup>th</sup> Semester had worked as Web developer Intern for Claypso estates pvt Ltd for 1 month from May 12, 2020 to June,12 2020 to build a website and he has worked as a Software Developer Intern in Discover technologies from May 27, 2020 to June 27, 2020 and developed a software to detect Brain Tumor, using MRI Images using Deep learning, Convolutional Neural Network and Image Processing. He has also done Intrenship at Tequed Labs on Ethical Hacking for 1 month from Jan 14<sup>th</sup> 2020 to Feb 14<sup>th</sup> 2020. He was working as a full Stack developer Intren at 'Daphins Labs' where he working on MERN Stack Technologies from June 25 to July 25 2020.
- 5. **Sahana Hegde** of 4<sup>th</sup> Semester has completed her internship in Tech byte Pravega IISc Bangalore on Cyber Security on January 25 and 26, 2020, and also an intership at Tecqued Labs from January 13 - 18 2020, completing industrial skill developement program on cyber security and ethical hacking.

#### Others

- Sachin P of 4<sup>th</sup> Semester had Volunteered for the Department of Information and Public Relations during the lockdown period of COVID-19 pandemic. He was a part of food distribution group, patrolling under Bangalore City police. He had volunteered at Bangalore International Airport, helping the police with migrant segregation and sending them to their respective states.
- 2. **Deepti Teragunti, Sai Pooja G and Sahana Hegde** of 4<sup>th</sup> Semester had participated in plogrun event hosted by team Hasiru for A Clean India Initiative on March 1, 2020.
- 3. **Sai Pooja G** of 4<sup>th</sup> Semester has received a certificate of appreciation for her efforts in helping for the distribution of food and essential supplies to people by creating placards and managing the requests, during the initiatives organized by team Hasiru to help the people in need during the COVID-19 pandemic.
- 4. **Vedanth P Bharadwaj** of 4<sup>th</sup> Semester had completed the online 'Fundamentals of Photography' workshop conducted by Toehold on June 18<sup>th</sup> 2020
- 5. **S Amith Nadig** of 4<sup>th</sup> Semester had hosted a Program Called Samatva Vidayarthi Vidahana Sabha as Technical Head in Samatava Team on June 23, 2020
- 6. **Apoorva Herle** of 8<sup>th</sup> Semester had worked as a key member for incoming global entrepreneurs for AIESEC, the largest youth run organization till Jan 2020. It is an international non-governmental and Not-for-profit that provides young people with leadership skills and opportunities

# Achievements of Staff

- Dr. Y.C Kiran, Professor, is working as a consultant for a project in 'Aspire Business Solutions', Bengaluru, India (Sept. 21, 2019 - Sept. 21, 2022). He is the editor of a Technical book titled 'Advanvces in Computational Intelligence and Data Visualization for Business Intelligence 2020-2021' published by CRC Press/ Taylor and Francis Publications, USA. He is the reviewer for International Journal of Engineering Research and Technology (IJERT, Review id- IJERTREW3413), ISSN-2278-0181, www.ijert.org, 2020 and also a reviewer for a Book Chapter 'Modern Techniques for Agricultural Disease Management and Crop Yield Prediction.' IGI Global disseminator of knowledge publication, USA, 2019.
- Dr. Vimuktha Evangeleen Salis, Associate Professor, was a guest speaker for a Webinar at Sapthagiri College of Engineering, held on July 18, 2020. She has attended AICTE Training and Learning (ATAL) Academy Online FDP on 'Data Science' from May 4 8,2020. She has also attended webinar on 'Outcome Based Education Software' on May 14, 2020 organized by VMEDULIFE Software Services. She is the editor of a Technical book titled 'Advanvces in Computational Intelligence and Data Visualization for Business intelligence 2020-2021' published by CRC Press/Taylor and Francis Publications, USA
- Mrs. Jagruthi H and Mrs. Harini S, Assistant Professors, have successfully completed AWS training and certification on AWS cloud Practitioner and Essentials (Second Edition) on May 22, 2020.
- Mr. Vijay Kumar S, Assistant Professor, has completed Diploma in 'Operations Management (Ops), from Alison, the world's largest free learning platform. He is selected as a Reviewer for Advances in Science, Technology and Engineering Systems Journal and name is successfully registered under subject codes CAI, CHA, CIS, CSE, CSI.



# Industrial Visit to IoT SHOW at KTPO Trade Centre, Whitefield, Bengaluru



The students of 4<sup>th</sup> Sem ISE were taken to IoT show at Karnataka Trade promotion organisation (KTPO) under Institution of Engineers Student Chapter on Tuesday February 15,2020 as a part of Industrial Visit. Students were accompanied by two faculty members: Mr. Vijay Kumar S and Mrs. Yashaswini H M. The exhibition was held from February 13, 2020 to February 15, 2020. The three day event included 13 conferences and 23 workshops on various domains like IoT, Automation, Prototyping, Bluetooth technology, Robotics, Embedded system development, Artificial Intelligence and Machine learning, Edge Analytics and Hierarchal Temporal Memory (HTM). 128 exhibitors exhibited their IoT products during the exhibition. Students had an opportunity to interact with different companies and learn about the lifecycle of product development, importance of innovativeness, the financial and marketing phase of product development. Students had an insight to industry best practices involving design and manufacture to make products smarter.

### Virtual Faculty Development on 'Prerana – The New Warriors in the New Normal World!'

BNMIT in collaboration with BITES and Disha Charitable trust, Bangalore had organized Virtual Faculty Development Program 'Prerana – The New Warriors in the New Normal World!' on May 27, 2020. The objective of the FDP was to strengthen the faculty members and give tips to manage the emotional stress during Lockdown due to COVID 19.Smt Shoba Sundereshan, Smt Rekha Ramachandran and Meera Balaganeshan were the resource persons. They addressed the faculty members of BNMIT and explained different techniques to manage and relieve stress. A total of 50 participants from the departments of ISE, CSE and ECE attended the virtual FDP. There was a discussion on how to build the relationship between the teacher and student. The resource persons motivated the faculty members to inculcate teaching with a vision, passion (for teaching) and compassion towards students. They explained how personal integrity and right conduct of faculty members can leave a lasting impact on the young minds through activities, experience sharing, Video, Stories, and Anecdotes. The resource persons also gave inputs on how to cope up with the online teaching and the 'new normal' because of the COVID 19 pandemic situation

#### Virtual Workshop on 'Unleash the Hidden Potential in You'

BNMIT in collaboration with BITES and Disha Charitable trust Bangalore organized Student virtual workshop 'Unleash the Hidden potential in you' on May 27, 2020, to strengthen the students and manage emotional stress during Lockdown due to COVID 19. Smt. Rekha Ramachandran and Meera Balaganeshan addressed the students and showed different techniques to manage and relieve stress. A total of 100 participants from ISE, CSE and ECE attended the virtual workshop. The students were asked various questions on different levels of stress which they are undergoing especially during the COVID crisis and lockdown, by the team. Based on this different activities that control emotions and acts like stress busters were given to the students. The student were taught to unleash the inner potential by building self-confidence to make use of the student life for the benefit of the self and society, to instil the importance of adapting and embracing the changes and to lead a purposeful life on the strong foundation of values.

# Faculty Development Program on 'Research and Innovation for Growth'

The Department of ISE organized a Faculty Development Program on 'Research and Onnovation for Growth' from January 20<sup>th</sup> to 24<sup>th</sup> 2020. The Resource Persons included Dr. V. Krishnamurthy, Registrar, PES University, Bengaluru, Dr. SeemaTharannum, Assoc. Professor, PES University, Bengaluru, Dr. Vanishree. R, Associate Professor, PES University, Bengaluru, Prof. Subhash Reddy, Chief Librarian, PES University, Bengaluru and Dr. Mahananda B.S, Associate Professor, JSS University, Bengaluru. The FDP had attracted Professors and Research Scholars from several institutions. The FDP was an effort to enrich the Research scholars on research methodologies with a focus on the formulation of research problem, research hypothesis and testing of hypothesis, design aspects, hands on training with report writing tools. It provided the participants the knowledge of writing manuscripts, conducting literature review, review process, data collection methods, selection of appropriate parametric or non-parametric statistical methods for analyzing data. The feedback of the event was very good and the total satisfactory ratio of the event was 90.75%

# **Fascinating Facts**

- The TUG robot can carry nearly 1000 lbs of medication to any location in a hospital. Owing to this innovation, doctors are able to spend more time with patients.
- In one trial, AI caught 95% of dangerous melanomas, but doctors got just 87%.
- AI is capable of making diagnoses just as accurately as world-leading experts in the medical field. For example, there is one such AI driven algorithm that can detect metastatic breast cancer with 99 percent accuracy.
- An algorithm was able to detect an Ebola outbreak more than a week before it was announced by the World Health Organization.
- An algorithm dubbed 'arobot doctor' was able to outperform 96 percent of those in a Chinese medical exam.
- A group of researchers at MIT have created an algorithm capable of detecting whether someone is depressed.
- Finland offers AI courses to ensure that the country remains competitive. Their goal is to teach at least one percent of the residents the basics of AI.
- Doctors performed the first Computed Tomography scan of a human brain in 1971.

# **Creative Corner**



Tejaswini S 4<sup>th</sup> Sem

#### ಕೃತಕ ಬುದ್ಧಿಮತ್ತೆ ಆರೋಗ್ಯ ರಕ್ಷಣೆಯಲ್ಲಿ

ಕೃತಕ ಆದರೂ ನಿಜವಾದ, ಮನುಷ್ಯ ನಾಗ ದಿದ್ದರೂ ಮೆದುಳು ಇರುವಂತಹ, ಭಾವನೆಗಳಿಲ್ಲ. ದಿದ್ದರೂ ಉದ್ರೇಕದಿಂದ ವರ್ತಿಸುವಂತಹ, ತೆನ್ನಲು ಬಾರದಿದ್ದರೂ ಅಡುಗೆ ಹೇಳಿಕೊಡುವಂತಹ, ಯಾವುದೇ ಡಿಪ್ಲೋಮೋ ಇಲ್ಲದೆ, ಎಲ್ಲದರಲ್ಲೂ ನಿಪುಣನಾಗಿ ಇರುವಂತಹ, ನಿರಂತರವಾಗಿ ನಿಖರತೆಯಿಂದ ಕೆಲಸ ಮಾಡುವಂತಹ, ಬುದ್ಧಿಮತ್ತ ದ ಯಂತ್ರ ಇದು !

ಇದರ ರೂಪವೊಂದು, ಬಳಕೆ ನೂರೊಂದು, ಬನ್ನಿ ನೋಡುವ ಇದರ ಚಮತ್ಕಾರ ಆರೋಗ್ಯ ರಕ್ಷಣೆಯ ಪ್ರಕಾರ , ಬದಲಾಗಿದೆ ಎಲ್ಲ. ಇದರ ಆಗಮನದಿಂದ , ವೈದ್ಯರಿರುವ ಜಾಗದಲ್ಲಿ, ಆಲ್ಸರಿದಮ್ ಯಂತ್ರ , ರೋಗ ನಿರ್ಣಯದ ಪ್ರಕ್ರಿಯೆ ನಡೆದಿದೆ ಈ ಕೃತಕ ಬುದ್ಮಿಮತ್ತೆ ಇಂದ, ವೈದ್ಯರಿಗಿಂತಲೂ ಮಿಗಿಲಾದ ಈ ಆವಿಷ್ಕಾರ , ಹೆಚ್ಚಿಸಿದೆ ಜೀವನದ ರೂಪ, ಸುಧಾರಿಸಿದೆ ಅನೇಕ ರೋಗಗಳ ವಿರೂಪ, ದೃಢಪಡಿಸಿದೆ ಇದರ ಉತ್ತಮಿಕೆಯ ಸ್ವರೂಪ, ಕಡಿತ ಗೊಳಿಸಿದೆ ಮಾನವನ ದೋಷ , ಮಾಡಿದೆ ಆರೋಗ್ಯ ರಕ್ಷಣೆಯಲ್ಲಿ ಯಶಸ್ಸಿನ ಪ್ರವೇಶ !

POOTA GODINAT

Connes.

-ಐಶ್ವೆರ್ಯ. ಎ

Sai Pooja

4<sup>th</sup> Sem

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