



## 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.



Kevin Ashton (Father of IOT)

Kevin Ashton is an innovator and consumer sensor expert who coined the phrase “Internet of Things” to describe the network connecting objects in the physical world to the Internet. Kevin Ashton has led three successful startups of tech companies including Zensi and is the author of “How to fly a Horse: The Secret History of Creation, Invention and Discovery”. While working as a brand manager, he found holes in data about supply chain that eventually led to early deployment of RFID chips in inventory. We dedicate the current issue of Inspire to the father of Internet of Things- Kevin Ashton.

### Contents

- Making Sense of Internet of Things
- IOT and Cloud Computing
- IOT enabled roads to be developed in Bengaluru
- IOT in agriculture-A way towards smart farming
- IOT in healthcare

And more.....



## Message from the editorial team

Greetings from the editorial team! We hope you find our endeavour to be inspiring and enlightening. May this edition ignite curiosity in your minds and motivate you to turn your dream into reality -- or better yet, a cool Product. The theme of the edition is Internet of Things. Happy reading!

## ***BNMIT has been accredited with 'A' Grade by National Assessment and Accreditation Council (NAAC)***

### About Our Department

The Department of Information Science and Engineering at BNMIT started in the year 2001 with an intake of 60 students. The department has a diverse community of faculty engaged in all aspects of research, teaching and mentoring of students. Students from ISE are multifaceted having come up with innovative projects, giving stellar performances on the sports field and bringing back trophies. Students are encouraged to develop projects from many fields of interests like Image Processing, Knowledge Networks, Embedded systems with IoT, Networking which give way to a holistic development. Many students have taken up internships in reputed organizations to gain firsthand experience of corporate environment. The department conducts workshops, Seminars, FDPs regularly every semester.

### Happy Times



BNMIT Alumni Get together with Director Prof. T.J. Rama Murthy in Sunny Vale, USA on 29th Sept 2017

Happy to share with all students and staff about my visit to USA and attending BNMIT Alumni get together in Sunnyvale on 29<sup>th</sup> September 2017. The get together was a platform to bring back the alumni to the almamator for encouragement and mentoring the budding engineers of our Institution. In the get together it was proposed to initiate a BNMIT alumni chapter in the Bay area which is well received by the management. BNMIT alumni will be an integral part of our endeavors.

**Prof. T. J. Rama Murthy**  
Director, BNMIT

### Faculty Development Program

One week Faculty Development Programme was organized on “Internet of Everything” from 31<sup>st</sup> July to 5<sup>th</sup> August 2017. Sessions were handled by eminent speakers from leading industries.

Chief Guest Mr. Mahesh Prabhu, VP, Global Head of Innovation & IoT, ITC InfoTech, gave a brief introduction to IoT Solutions, IoT Solution Components, Architectural approach and IoT reference architecture.

Mr. Prasanna Banavara, Senior Platform Analyst, Intel Corporation, Mr. Rajesh Karthik, Senior Program Manager, Robert Bosch, Mr. Muralidhar Narasimhamurthy, Director, Engineering, CISCO systems Inc., Mr. Srikanth Menon, Practice Director of IoT, Happiest Minds Technologies, Mrs. Bhawna Manchanda, Happiest Minds Technologies, Mr. Pankaj Negi, Principal Consultant, IoT center of excellence, Infosys technologies, Mr. Manish Jain, Corporate Trainer, Pune, Mr. Ashish Khare, Global head of IoT & smart cities, Wipro Limited were the resource persons who shared their knowledge in the area of Internet of Everything and its applications.



## Making Sense Of The Internet Of Things

The emerging Internet of Things — essentially, the world of physical devices connected to the network/Internet, from your Fitbit or Nest to industrial machines — is experiencing a burst of activity and creativity that is getting entrepreneurs, VCs and the press equally excited. The space looks like a boisterous hodgepodge of smart hobbyists, new startups and large corporations that are eager to be a part of what could be a huge market, and all sorts of enabling products and technologies, some of which, including crowd funding and 3D printing, are themselves far from established.

From bottom to top, there are three broad areas – building blocks, verticals and horizontals:

### Building Blocks

The concept of the Internet of Things is not new (the term itself was coined in 1999), but it is now in the process of becoming a reality thanks to the confluence of several key factors.

**First**, while still challenging, it is easier and cheaper than ever to produce hardware – some components are open sourced (e.g. Arduino microcontrollers); 3D printing helps with rapid prototyping; specialized providers like Dragon Innovation and PCH can handle key parts of the production process, and emerging marketplaces such as Grand St. help with distribution.

**Second**, the world of wireless connectivity has dramatically evolved over the last few years. The mobile phone (or tablet), now a supercomputer in everyone's hand, is becoming the universal remote control of the Internet of Things. Ubiquitous connectivity is becoming a reality (Wi-Fi, Bluetooth, 4G) and standards are starting to emerge (MQTT). The slight irony of the “Internet of Things” moniker is that things are often connected via M2M (machine to machine) protocols rather than the Internet itself.

**Third**, the Internet of Things is able to leverage an entire infrastructure that has emerged in related areas. Cloud computing enables the creation of “dumb” (simpler, cheaper) devices, with all the intelligence processed in the cloud. Big data tools, often open sourced (Hadoop), enable the processing of massive amounts of data captured by the devices and will play a crucial role in the space.

Unlike the Big Data space, where the action is gradually moving from core infrastructure to vertical applications, the Internet of Things space is seeing a lot of early action directly at the vertical application level. Some notable players like Nest Labs seem to have adopted a deeply integrated vertical strategy where they control key pieces of the product, including both hardware and software, in order to have complete control over the end-user experience (a lot like Apple, which is not surprising considering the founders' background).

Beyond the Nest, home automation in general has become the central battlefield of the Internet of Things, with some of the most exciting startups in the space jockeying for position. Another hot consumer-facing area is obviously quantified self, which is playing a huge role in developing consumers' awareness of the potential of the Internet of Things. Beyond consumer, B2B/enterprise vertical applications of the Internet of Things, fueled in part by robotics, hold considerable promise in a number of areas such as manufacturing, transportation, healthcare, retail and energy. Some of clearest revenue opportunities for IoT startups are in the enterprise area.

-Latha. B (V sem)

## IOT AND CLOUD COMPUTING

Internet of Things is a platform where every day devices become smarter, every day processing becomes intelligent, and every day communication becomes informative. While the Internet of Things is still seeking its own shape, its effects have already started in making incredible strides as a universal solution media for the connected scenario. Architecture specific study does always pave the conformation of related field. Directly or indirectly, the presented architectures propose to solve real-life problems by building and deployment of powerful Internet of Things notions. Further, research challenges have been investigated to incorporate the lacuna inside the current trends of architectures to motivate the academics and industries get involved into seeking the possible way outs to apt the exact power of Internet of Things.

### Utilities of IoT :

(1) Dynamic and self adapting: IoT devices and systems should have the capability to dynamically adapt with the changing contexts and take actions based on their operating conditions, user's context, or sensed environment. For example, consider a surveillance system comprising of a number of surveillance cameras. The surveillance cameras can adapt their modes (to normal or infra-red night modes) based on whether it is day or night. Cameras could switch from lower resolution to higher resolution modes when any motion is detected and alert nearby cameras to do the same. In this example, the surveillance system is adapting itself based on the context and changing (e.g., dynamic) conditions.

(2) Self-configuring: IoT devices may have self-configuring capability, allowing a large number of devices to work together to provide certain functionality (such as weather monitoring). These devices have the ability to configure themselves (in association with IoT infrastructure), setup the networking, and fetch latest software upgrades with minimal manual or user intervention.

(3) Communication protocols: IoT devices may support a number of interoperable communication protocols and can communicate with other devices and also with the infrastructure.

(4) Identity: Each of IoT device has a unique identity and unique identifier (such as IP address or URI). IoT systems may have intelligent interfaces which adapt based on the context, allow communicating with users and environmental contexts. IoT device interfaces allow users to query the devices, monitor their status, and control them remotely, in association with the control, configuration and management infrastructure.

### **IOT WITH CLOUD**

IoT cloud solutions provides the facilities like real time data capture, visualization, data analytics, decision making, and device management related tasks through remote cloud servers while implying “pay-as-you-go” notion. Various cloud service providers are gradually becoming popular in the several application domains such as agriculture.

### **APPLICATION DOMAINS**

IoT cloud platforms are designed to be meant for particular application specific domains such as, application development, device management, system management, heterogeneity management, data management, analytics, deployment, monitoring, visualization, and finally research purpose . It is obvious that there are many more platforms currently present in the market, most popular 26 of these are chosen. Further, based on applicability and suitability preferences in several domains the IoT cloud platforms have been revisited. 10 different domains are selected based on which most of IoT cloud platforms are currently evolving into the IT market. Management wise few technological sectors are envisioned where these platforms do best fit into such as: Device, System, Heterogeneity, Data, Deployment, and Monitoring. Similarly, Analytics, Research and Visualization fields are chosen where rest of the platforms may be accommodated.

-Sanchitha Thanay (VII sem)

### **IoT enabled roads to be developed in Bengaluru**

At least seven km of roads in the central business district area of Bengaluru will be developed as 'Smart SURE' roads, a terminology coined by the civic corporation. The high streets in the vicinity of Vidhana Soudha including MG Road, Brigade Road and Commercial Street will be covered under this plan. These roads will have 50 smart card-enabled public bicycle sharing points, 30 e-rickshaw stands, 35 e-toilets, water ATMs, 420 sensor-based smart dustbins and 50 designated vending kiosks -all of which will be connected to 1,250 smart telecom towers that will double as street light poles.

This futuristic idea is part of a Rs 2,090-crore plan to make Bengaluru a smart city. It was only last month that Bengaluru was shortlisted under the Smart Cities Mission in what was the BBMP's third attempt to get India's IT capital included in Prime Minister Modi's pet project.

Authorities have chosen 21.8 sqkm of the city's core area comprising the historic Pete and Cantonment with old markets and commercial hubs of MG Road, Brigade Road, Chickpet, Avenue road and Commercial Street under Area-Based Development (ABD), which will get Rs 1,166 crore, a lion share, in the Smart City project.

According to an official involved with the Smart City project, Smart SURE roads are essentially Tender SURE roads with a touch of technology. "Smart telecom towers will control IoT based solutions such as smart parking and smart dustbins. For example, we are going in for smart street lighting, whose illumination will be controlled by the towers," he said.

Other projects to be taken up under smart city ABD is the redevelopment of the Shivajinagar and Majestic bus depots, Russell Market, KR Market and Malleswaram market, Ulsoor and Sankey lakes, Cubbon Park, Swathanthra Palya slum and KC General Hospital. All smart city works will be anchored by a special purpose vehicle (SPV). "The proposal to set up an SPV has been sent to the Cabinet for approval. Once that is done, we will float tenders to take up the work," Municipal Commissioner N Manjunath P.

-Priyanka.G.A (V sem)

### **IoT in Agriculture – a way towards smart farming**



The term “IoT” or “Internet of Things” conjures images of latest gadgets like Google Glass, Apple Watch or even self-driving cars. In fact, some of the most innovative and practical applications are happening in the **Industrial Internet of Things (IIoT)** – smart cities, smart agriculture, smart factories, etc. However, the application of IoT in agriculture can have the greatest impact.

The Internet of Things is transforming the agriculture industry like never before by empowering farmers and growers to deal with the enormous challenges they face. Till now, agriculture has been a high-risk, labor-intensive, low-reward industry. Farmers are very likely to be impacted by unexpected environmental changes, economic downturns, and many other risk factors.

### How IOT can reshape farming

IoT can help farmers in a number of ways. At its most basic level, sensors can be deployed across farm and farming machineries in order to enable farmers to gain an abundance of insightful data, such as the temperature of stored produce, the amount of fertilizer used, the amount of water in the soil, the number of seeds planted, storage conditions, the status of farming equipment and machinery in use, etc. Once an IOT enabled smart system is in place, farmers can easily track a variety of environmental variables and take informed decisions. Rather than just an enhancement, smart farming is a necessary innovation, which if correctly implemented could help farmers to deal with all the challenges they face in farming. Moreover, the rich insights derived from smart sensors could help farmers be more precise in their use of pesticides and fertilizers, thus mitigating some environmental impacts.

IoT deployment in agriculture can address many challenges and increase the quality, quantity, and cost-effectiveness of agricultural production.

-K. Ayisha Parveen (VII sem)

### IoT IN HEALTHCARE

A major domain in which IoT has made its presence felt is healthcare. Let us look at some inventions and innovations that have changed the way we provide medical care to patients:

- **OpenAPS- A Closed loop insulin delivery**

It is an open source initiative that stands for open artificial pancreas system. CGM (continuous glucose monitor) provides data feed and a Raspberry Pi computer completes the loop and constantly adjusting the insulin the pump delivers.

- **UroSense**

A smart fluid management solution that automatically measures the core body temperature (CBT) and urine output of patients. It helps avoid infections while starting early care of medical conditions like diabetes, heart failure and sepsis, also reporting the data directly to nursing stations anywhere.

- **Philips's Medication Dispensing Service**

It dispenses pre-filled cups of medicines for the scheduled dosage.

It notifies automatically when it has to be refilled or when the medicines need to be taken, thereby helping elderly patients.

- **Depression-fighting Apple Watch app**

An Apple Watch app helps patients with major depressive disorder. It is designed to monitor and assess cognitive function, also reporting mood and cognition. Active and passive data is collected.



(Left-Right) Apple Watch, Philips Dispenser, Activity Tracker

-NAGASHREE H S (VII Sem)

### INTERNET OF THINGS SECURITY PROBLEMS

The Internet of Things (IoT) is essentially a construct where machines (cloud and data centerbased apps) and common devices (such as watches, toasters, thermostats, body monitors and cars) are connected to each other via the public Internet. Within the IoT, common devices are controlled and monitored remotely using wireless networks for the most part, while data flows between the cloud and traditional data centers for analysis and manipulation.

While this may suffice as an appropriate technical definition, it is hardly appropriate in respect to how the consumer must understand the IoT and specifically how it will directly affect their personal privacy. In this regard, the worst-case scenario is one where the consumer forfeits all of their privacy due to ignorance or complacency, and then has every detail of their personal lives made available to anyone who wants to pay for this information from the app provider or one of the many data brokers who will dominate the secondary market for IoT data. Many of these perpetrators will then target these same consumers with specific adverts and offers, as well as performing behavioral experimentation, usually without the consumer's knowledge, much less specific consent.

The potential for such ubiquity (billions to trillions of devices) of IoT seems like a foregone conclusion at this point. But there are multi-dimensional privacy challenges which must be surmounted if this truly is going to become a reality. To get ahead of these challenges the privacy engineering community (via National Institute of Standards and Technology) is currently involved in intense discussions as to how to “engineer in” the right privacy regime, which will provide users (consumers) with direct control over a wide range of their own personal privacy settings as well as creating auditing and measuring schemes to ensure compliance with both user settings as well as regulatory mandates.

Privacy engineering is a very real challenge, and there are multiple paths in the IoT where a privacy regime must be monitored and maintained:

- The Internet (multi-directional data transport).
- The cloud (data manipulation and aggregation point).
- The machine (application services, big data repositories, analytics and more).
- The device (data generator, data receiver and aggregation point).

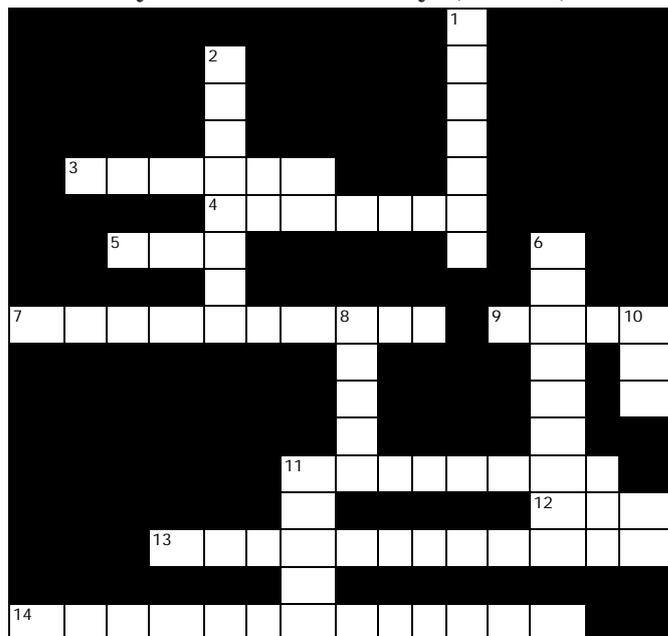
### Privacy for Sale

Some companies also collect and analyze information about users “tweets, posts, comments, likes, shares, and recommendations.” While many of these details were already available on the data companies websites, the lawmakers used the letters as a chance to raise awareness about an industry that they said has largely “operated in the shadows.” And now with growing IoT devices such companies can work easier because they have ear & eye everywhere, in our homes, in industry or even in very sensitive structures, today IoT devices are working everywhere and collecting data for manufactured companies are easy, and it is hard to detect. In this phase, we can see two sides of risk, first side is non personal data's, for example, the Czech Republic based security software vendor AVG Technologies recently updated its privacy policy. The objective of the changes, according to the company, was to explain in a more transparent manner to their users how it intends to use what it calls “non-personal information”. They're called data brokers, and they are collecting, analyzing and packaging some of our most sensitive personal information and selling it as a commodity to each other, to advertisers, even the government, often without our direct knowledge. Much of this is the kind of harmless consumer marketing that's been going on for decades.

-Niharika Vittal (V sem)

## CROSS WORD

By Rakshith G Murthy (III sem)



### Down:

- \_\_\_\_\_ (7) \_\_\_\_\_ company creates Retina Display for Apple devices
- \_\_\_\_\_ (8) \_\_\_\_\_ was the inventor of BOSE Speaker Corporation
- a. \_\_\_\_\_ (8) \_\_\_\_\_ Indian e-tailer company started selling books online in the year 2007
- Amazon's assistant: \_\_\_\_\_ (5) \_\_\_\_\_
- \_\_\_\_\_ (3) \_\_\_\_\_ computer port development began in the year 1994 by Ajay Bhatt and was released in 2000 and is still widely used now with variants such as Type-C
- Google's self-driving car: \_\_\_\_\_ (5) \_\_\_\_\_

### Across:

- Christopher Latham Sholes invents modern typewriter and \_\_\_\_\_ (6) \_\_\_\_\_ keyboard
- Most widely used cryptocurrency: \_\_\_\_\_ (7) \_\_\_\_\_
- This value determines how sensitive a camera is to light: \_\_\_\_\_ (3) \_\_\_\_\_
- 8<sup>th</sup> Generation Intel processors are known as \_\_\_\_\_ (10) \_\_\_\_\_
- Android OS is based on \_\_\_\_\_ (5) \_\_\_\_\_ kernel
- \_\_\_\_\_ (8) \_\_\_\_\_ ransom-ware attack happened in May 2017 demanding \$300-\$600 to remove itself from the host computer.
- \_\_\_\_\_ (3) \_\_\_\_\_ payment app was developed by Google along with Government of India
- Highest selling game console of all time with sales >155million units: \_\_\_\_\_ (12) \_\_\_\_\_
- 'LG' in LG Electronics stands for: \_\_\_\_\_ (13) \_\_\_\_\_

Answers  
 Across: 4. Bitcoin 5. ISO 3. Flipkart 7. Coffee Lake 9. Linux  
 11. WanaCrypt 12. Tez 13. PlayStation 2 14. Lucky Goldstar  
 Down: 1. Samsung 2. Amar Bose 6. QWERTY 8. Alexa  
 10. USB 11. Waymo

## Workshops and Technical Talks



Three days workshop on Android Application Development was conducted under CSI-BNMIT student chapter on 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> November, 2017. The resource person, Mr. Vishwa Kiran is a senior corporate trainer from Aprameyah Technologies Pvt. Ltd. and research scholar from UVCE. He has 15 years of rich experience as a corporate trainer and software developer.

The workshop provided hands-on sessions on Android Architecture and studio, Running Android application using Emulator and Android Phone, UI design by using XML, Adding on Click Listeners, Famous quote application, Application to Initiate Calls, Android Manifest file, Developing Application to play audio and video, Different Types of Layouts, DDMS, ADB Tools, Thread Based application, Splash Screen Application, Developing background

application by using Services, Intent Service, Bound Service, Writing application to receive broadcast messages Design Attributes, Developing application to store and retrieve data through content provider.

Two days workshop on Webservices, Javascript and JSON was conducted under CSI-BNMIT student chapter on 4<sup>th</sup> and 5<sup>th</sup> November, 2017. The resource person, Mr. Albin Xavier is a corporate trainer and sun certified java programmer from Aprameyah Technologies Pvt. Ltd.

The topics covered in hands-on sessions included How to include JavaScript in an HTML document, The JavaScript syntax and data, JavaScript Statements, Arrays and Web Storage, How to create and use functions, JavaScript Object Notation (JSON), Ajax Development, Introduction to REST, Designing RESTful Services, Developing a JAX-RS RESTful Service, HTTP Method and URI Matching and JAX-RS Injection.



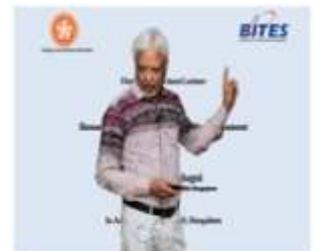
A two-day Workshop on “The Internet of Things and Analytics” was organised at B.N.M. Institute of Technology in association with BITES (Board of IT Education Standards), on 22<sup>nd</sup> September and 23<sup>rd</sup> September, 2017. The first session was handled by Dr. Prabhakar a renowned professor from II Sc, Bangalore. Overview of IOT, definition of IOT and presentation related to what happens in an Internet minute depicting the amount of data used around the world was covered. A Brief description of the IOT ecosystem and the components of the IOT system were also presented.

Prof. Jamadagni gave an explanation on Analytics, which consisted of discovery of data, interpretation and communication of meaningful patterns of data and also about the types of

Analytics and the evolution of IOT.

BNM Institute of Technology organized a guest lecture on “Research to Markets: A Realistic Assessment “in association with BITES on 19<sup>th</sup> July 2017. The guest speaker was Dr. H.S. Jamadagni, Former Senior Professor, CEDT, IISc, Bangalore

Dr. H S Jamadagni addressed the participants on the need for an effective connection between university research and industry activity. The talk focused on academia perspective of research and industry product.



A technical talk on “The Internet of Things” was organised by department of Information Science & Engg. followed by distribution of mementos to distinction holders for 1,3,5,7 & 8 semesters in the VTU examinations 2016-17 in association with ACSIS (Association of Computer Science & Information Science & Engg.), on 30<sup>th</sup> October, 2017. Mr. Mahesh Prabhu’s talk was focused on use cases of IOT and their practical uses. He highlighted how IOT brings in unlimited possibilities for business across various industry sectors around the world.

Ms. Archana Kulkarni had delivered a technical talk on “DBMS concepts” for V sem students on 7<sup>th</sup> September 2017 All concepts related to DBMS were briefed. What and why DBMS, Advantages of DBMS, Database, relation, components of DBMS, Client server architecture, SQL and its advantages. Students were also introduced to concepts related to Big data, cloud computing and Oracle.



The seminar on “Introduction to Intellectual Property Rights“ was conducted by Dr. Anindya Sircar for the students of V Semester CSE and V Semester ISE on 6<sup>th</sup> September 2017. Dr. Sircar interacted with the students and briefed them about the elements of IP, the complete IP cycle, legal remedies, Business Strategies, and IP Management- Integration. He spoke about the relevance of IP in industry and business. He also gave a brief on Patents and how Patent infringement is becoming very common nowadays.



On the occasion of CSIR platinum Jubilee Celebrations, CSIR had organized Technofest Exhibition from 25<sup>th</sup> to 27<sup>th</sup> October, 2017 at CSIR-NAL, HAL Airport road, Bengaluru. Dr. Sejal Santosh Nimbhorkar, Associate Professor, Department of CSE and Mr. Manjunath G S, Assistant Professor, Department of ISE accompanied students for the exhibition. The exhibition covered key contributions of CSIR to the Science & Technology in the field of food, agriculture, energy, aerospace, landslide and health.

Study metro organized an international educational fair on 17<sup>th</sup> of September 2017 at Ritz Carlton. The fair was attended by V sem ISE students. There were many stalls representing different universities offering different degrees and courses. Students enquired with the representatives of the universities who gave them detailed information about their universities, the courses they provided, their campus, their accommodation facilities and fee structure.



### Student Achievements

- Sumukh Venugopal and group –V sem has been awarded a scholarship of Rs. 2,00,000/- by IEDC for their project of developing solar powered battery bank with an inverter circuit (Nov-2017).
- Nayana Bhat – III sem has been awarded Central Zone Runner-up in Throw Ball (VTU), III Prize in 400m Relay (27<sup>th</sup> Oct 2017), III prize in 200m (27<sup>th</sup> Oct 2017), II prize in Inter Department Throw Ball competition and I prize in Inter Department Badminton competition.
- Likitha B - III sem has been awarded Central Zone Runner-up in Throw Ball (VTU), II Prize in 400m Relay (27<sup>th</sup> Oct 2017) and II prize in Inter Department Throw Ball competition
- Akshay - V sem has been Awarded the Bharat Ratna MS Subbulakshmi Fellowship for Mrindagam from Shanmukhananda Sabha Bombay(SEP-2017)
- Harshitha. P- III Sem has been awarded II prize in Bhavageethe singing competition conducted by KALABHAGEERATHI club

### Editorial Team

#### Faculty

**Mrs. Basavarajeshwari,**  
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**Ms. Harini S,**  
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**Sanjna Umesh** | VII Sem  
**Nagashree H S** | VII Sem  
**Sudarshan Rao M** | V Sem  
**S. G Aditya Bharadwaj** | V Sem  
**Rachana Ravi Kumar** | V Sem  
**Priyanka G A** | V Sem  
**Manasa Deshpande** | III Sem  
**Namratha R** | III Sem