Technical Talk – 1

The Department of ISE organized a technical talk – 1 on 29/08/2015 on the topic **"Algorithmic Puzzles in Problem Solving"**. Which was delivered by Dr. Pradeep C.R. Professor, CIT Gubbi, Tumkur. With his glorious teaching experience of 30 years, Prof Pradeep C.R found to be truly exiting to interact with young minds and exchange his ideas with our students. His talk helped our students to develop their own algorithms for solving various puzzles. He discussed about various types of puzzles and focused on solving them using various algorithmic techniques. He discussed various puzzles like Exhaustive Search, Divide and Conquer, Transform and Conquer, Greedy Method etc. He also showed step by step procedure for developing an algorithm for finding solution to magic square, celebrity problem, Knights Problem etc.

Technical Talk – 2

The Department of ISE organized a technical talk – 2 on 02/09/2015 which was delivered by Mr. Gautham Pai and Mrs. Srilaxmi Pai on the topic **"Visualization in Cloud Computing"**. During their session they explained the importance of cloud computing, why and where to use cloud computing technique. They mainly focused on how DNS and IP are connected in cloud computing. Also explained different types of clouds like SAAS, PAAS, IAAS. They also discussed about the providers of cloud like Google, Microsoft, Amazon etc. They also explained about the importance of visualization technique in cloud computing. They also focused on the applications of cloud computing in various fields like Big data analytics, file storage, Disaster Recovery etc.

Technical Talk – 3

The Department of ISE organized a technical talk – 3 on 05/09/2015 which was delivered by Mr. Ravindra Y.R, Project Team Manager, VICOAST Bangalore on the topic **"Employability Skills"**. During his talk, He gave the definition of employability and he said how employability focuses on enhancing the academic, personal and professional development of learners to meet the changing needs of employers, the economy and society. He gave the different IT Employability skills that the students need to have to get a placement in reputed companies. He focused on IT Employability skills like communication, Team work, Problem Solving, planning and organizing and listening etc. He also said researching and selecting relevant information to solve a problem will reduce the risk of designing. He highlighted on the type of questions that will be asked in software companies which included RDBMS, OOPS, C#, and .NET etc.

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Technical Talk – 4

The Department of ISE organized a technical talk – 4 on 21/09/2015 which was delivered by Dr. Nalini N, Prof CSE Dept, NMIT Bangalore on the topic **"Security Issues in Wireless Sensor Networks"**. With her glorious teaching of around 20 years Dr. Nalini found to be truly exciting to interact with young minds and exchange her ideas with our students to enhance the knowledge of our students. In this session she focused on:

1. Traditional networks and their characteristics.
2. WSN Definition and introduction to WSN.
3. Difference between traditional networks and WSN.
4. Security goals for sensor networks (confidentiality, Authentication, Integrity etc)
5. Motivation for WSN.
6. Need for security in WSN.
7. Various types of attacks (Active & Passive in WSN).
8. Applications of WSN.

Technical Talk – 5

The Department of ISE organized a technical talk on 15th Oct 2015 which was delivered by Mrs Mamatha Balachandra, Assoc.Professor, Dept of CSE, MIT, Manipal, on the topic **"Overview Of MANETs And Simulation Basics"**. In this session, Mrs. Mamatha Balachandra gave the definition of MANETs and explained motivation behind MANETs. She also focused on communication between nodes using multi-hop paths. She explained various challenges faced by MANETs in real time applications. The various challenges she addressed are:

1. Channel is unprotected from outside signals.
2. Wireless media is unpredictable.
3. Channel has time varying and asymmetric propagation properties.

She also explained characteristics of MANETs like Dynamic Topology, Energy-constrained Operation, Limited Bandwidth, Security threats. She described different applications in real time. Few examples are,

1. In the occasion where there is a group effort required, the MANET plays a major role in wireless communication and provides effective communication.
2. At the time of disaster, it is easy to develop a wireless network rather than a wired network. The places where wired network may be affected by the disasters, MANET can be implemented.
3. As far as the Personal Area Networks (PAN) is concerned, they need not much coverage. They just need the coverage of very limited area. MANETs server the purpose in such situations.

She also gave introduction and importance of simulation in computer science. She explained about different techniques in execution of simulation models. She focused on Serial Discrete-Event Simulation and Parallel Discrete Event Simulation and difference between them and its applications in real time system.

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Technical Talk – 6

The Department of ISE organized a technical talk – 6 on 13th February 2016 which was delivered by a Resource Person Prof (Dr). D.K. Sreekantha, Professor, Dept of CSE, NMAMIT, Nitte, on the topic **"Soft Computing and its Applications".**

In this session Dr. D.K. Sreekantha explained what is hard and soft Computing. He also explained various paradigms of soft computing and briefly explained the various applications of soft computing in real time categories of computing. He spoke about the relationship of soft computing with other fields and its applications includes Bioinformatics and Biomedicine.

Dr. D.K. Sreekantha also explained about intelligent systems, expert systems and artificial intelligence. He also shared his experience in 6 different countries of Europe.

At the end of the session Dr. D.K. Sreekantha, explained about the different life style of the people around the world. It was worth knowing about the countries like France, Paris, Belgium and many more.

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Technical Talk – 7

The department of ISE organized a technical talk - 7 on 19th February 2016 which was delivered by Dr.Siddesh.G.M, Associate Professor, MSRIT, Bengaluru on the topic **"Driving Big Data using Hadoop Technology"**. He was awarded with the "Young scientist" award in 2014.

In this session Dr.Siddesh.G.M first showed us a small video which threw light on present scenario of big data, various facts and figures associated with it. This video was an eye-opener which gave an overview on Big data. He also explained what actually big data is? The various sources driving the big data . He stressed on the importance of big data, provided the fact that every common man produces billions of data every day. In this talk he also explained how to handle Big data. We also learnt about the various types of data-unstructured, quasi-structured, semi structured and structured data. He also explained about the 3 V's (Volume, Velocity, and Variety) which form the core characteristics of any Big data. We also learnt about the various databases which handle the big data.

He also explained about in brief about Hadoop Eco System, which is an open source project initiated by Apache Foundation. Hadoop enables processing of large data in distributed manner. He also told about two things which form the core of Hadoop i.e., Map Reducing (programming model) and HDFS (Hadoop Distributed File System) Towards the end of the session he showed us how a sample program works in a Hadoop Eco System which further increased our understanding of the topic and increased our interest towards Big Data.

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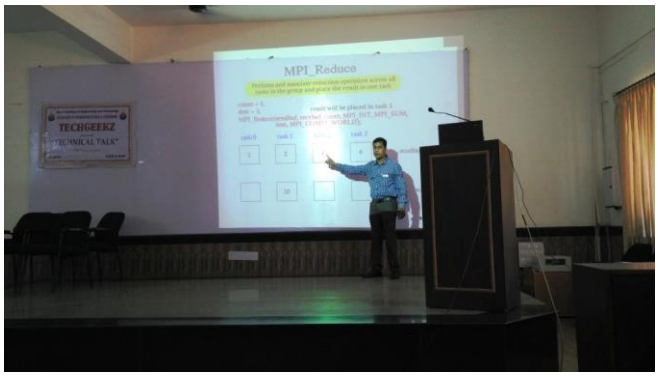
Technical Talk – 8



The Department of ISE organized a technical talk - 8 on 03rd March 2016 which was delivered by Dr.Govardhan Hegde K, Sr. Assistant Professor, MIT, Manipal on the topic **"MPI Programming"**.

In this session Dr. Hegde revealed about Parallel programming which is the language support to the parallel algorithm on parallel computer. Exploiting the full potential of a parallel computer requires a cooperative effort between the user and language system. A parallel program on this computer is a collection of cooperating processes which execute concurrently.

He also explained regarding the Super computer which is a computer with high level computational capacity compared to a general-purpose computer. Performance of a super computer is measured in floating point operations per second (FLOPS) instead of millions of instruction.

Parallel architecture: There are two types of parallel architecture one is distributed memory and shared memory. Distributed memory contains explicit data distribution, explicit communication, programming through open MP, scalable. Shared memory contains implicit data distribution, implicit communication.

Passing arguments: In MPI programmers via their programs as a collection of codes. MPI is message-passing library interface specification. MPI add primarily the message passing parallel programming model, in which data is moved from the address source of one process to another process through cooperative operation.

System requirements: mpi_x64.msi, mpi_x86.msi these two are the MPI installer, Visual studio. Then he explained about the MPI program structure, environmental management routines and MPI error handling which contains a MPI communicator, error handler, default error handler.

MPI point to point operations, MPI sends and receives. If a sender sends two messages (message one and message two) in succession to the same destination, both match the same receiver.

Technical Talk – 9

The Department of ISE organized a technical talk - 9 on 04th March 2016 which was delivered by Prof. Umashankar B.S, Professor, SCEM, Mangalore on the topic **"Future Technologies in Computer Graphics"**.

In this session Prof. Umashankar has informed about the graphics that play a vital role in each and every part such that regarding computer graphics market how it was around in 2014 and in now a days.

Then regarding about prediction of future such that prediction is very vast we can tell such that computer in future may weight not more than 1.5 tons.

He also mentioned about the ENIAC which is the first electronic general purpose computer.

Then he also spoke regarding the operating system that we will never make 32bit as it is been quoted by bill gates in 1989 such that it is been vanished that we use 64bits now a days.

Then regarding Robert Metcalfe, he is an electrical engineer from the USA who co-invented Ethernet founded 3com and formulated Metcalfe law. The Metcalfe law states that value of telecom network is directly proportional to the square of no of user.

Then he gave presentation regarding computer graphics which is the field for computer scientist, mathematics, physics, and engineer. Computer graphics are picture and movies created using computer referring to image data created by computer help from graphical hardware and software.

Driving factor has been discussed such that it gives high penetration of internet demand for online gaming with high resolution. Aspect ratio such which is related to regarding ratio.

Resolution has been discussed regarding no of pixels per inch. Virtual reality have been an immersive multimedia that stimulates physical presence in place in real world.

He spoke regarding Rendering which is the process of generating an image from 2D or 3D model by mean of computer, here it would contain geometry, view point, texture, lighting and shading etc. Non photo Realistic Rendering is an area of computer graphics that focuses on enabling a wide variety of expressive style for digital art.

He also gave brief introduction about Direct View Storage Tube (DVST), the video scan converter tube and the video disk each to mature and to find particular application in areas where its advantages will be realized.

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Technical Talk – 10

The Department of ISE organized a technical talk - 10 on 11th March 2016 which was delivered by Prof. Raju Hajare, Associate Professor, BMSIT, Bangalore. On the topic **"Nano-Technology and its Applications"**.

In this session Prof. Hajare revealed about history of Nano-Technology how it is been developed. Nano-Technology is the manipulation of matter with at least one dimension sized from 1 to 100 nanometre. He also differentiated between Nano science and Nano-Technology.

He also spoke about Richard Feynman who gave description regarding molecular machine building with atomic precision. Nano-Technology is an enabling technology that will change the nature of almost every human made object in coming year.

He also explained regarding the properties of Nano Particles that will be changed at the different size. Nano fabrication is been such that we use two type of process Topdown, bottom up approaches.

He also emphasized regarding the application of Nano-Technology in various fields like medicine, electronic, food, fuel, solar cell, batteries, space, chemical sensor etc. Moore's law is the observation that over the history of computing hardware the no of transistor in a dense integrator circuit has doubled approximately every two years. Nano-Technology in memory and storage that is 2GB hard drive weight about 70 pounds.

He also in sighted on Nano-Technology that will help us by new manufacturing technology. Also help to build computer system inexpensively with more quantities.

Some of work carried by Nano device and memory design such as drain included barrier lowering, velocity saturation, channel length modulation, leakage, heat production & discussed regarding MOSFET and its applications.

He also explained about Nanotechnology which is being used in developing countries to help treat disease and prevent health issues.

TECHNICAL TALK -2015-16

1. The technical talk was organized on 9th April 2016 by Dr. Kanthi M, Professor , Dept. of E&CE, MIT, Manipal. The talk was about "Embedded Control Systems" which includes design of Embedded Systems, features of Embedded Systems, and various applications like ATM, Automated Washing Machine, etc., Finite State Machine Model.


2. The technical talk was organized on 30th March 2016 by Dr. Murlidhar Kulkarni, Professor, Dept. of E&CE, NITK, Suratkal. The talk was about "RECEnt Trends in Optical Communication and FSP" which includes wireless communication, Line of Sight, Wi-Max, Wi-fi, Li-fi, applications of FSP, features of FSP, application of Li-Fi in underwater applications was also discussed.


3. The technical talk was organized on 24th March 2016 by Dr. Jagannathan S, Professor, Dept. of E&CE, RVCE, Bengaluru. The topic was about "Advanced Processors" which includes development of processors from 4004 to 8086, architecture of several processors, interfacing, applications, clock generation, instruction set, DSP.

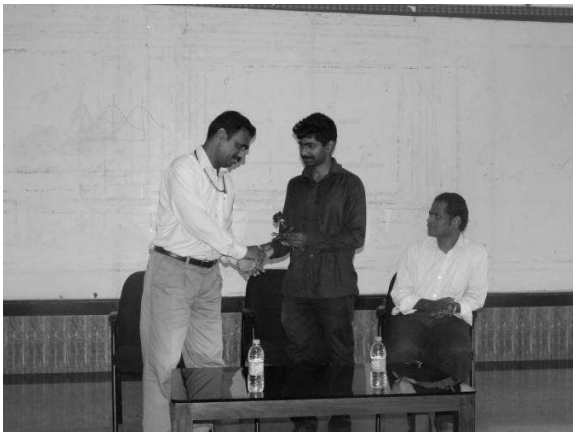

4. The technical talk was organized on 26th February 2016 by Dr. K. Panduranga Vittal, Professor, Dept. of E&EE, NITK, Suratkal. The topic was about "Development in Embedded Systems" which includes the rECEnt techniques involved in the design of the embedded systems, modern embedded applications in daily life, medicine, IT, etc. Advantages, Disadvantages, Drawbacks, and Challenges were also discussed in the talk.


5. The technical talk was organized on 22nd February 2016 by Prof. S.V. Niranjana Murthy, Dept. of E&CE, RLJIT, Doddaballapur. The Topic was about "Optical Fiber Communication"

which includes types of optical fibers, manufacturing steps of optical fibers, principle of operation, application of optical fibers, advantages of optical fiber communication over other types of communication, disadvantages are discussed by the resource person.


6. The technical talk was organized on 30th January 2016 by Dr. P.C. Srikanth, Professor & Head, Dept. of E&CE, MCE , Hassan. The topic was about "RECEnt Trends in Optical Networks" which includes about photonics, crystalline structure. He discussed various new techniques which help in increasing bit rate transfer in modern optical communication networks.

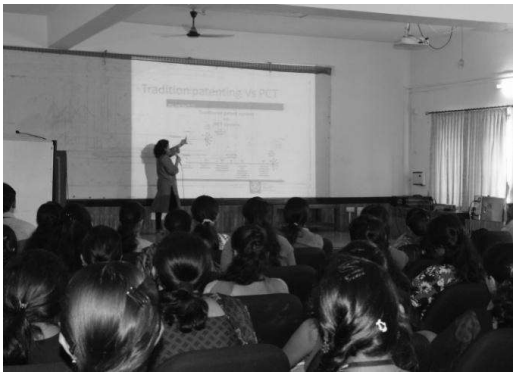

7.The technical talk was conducted on 9th November 2015 by Dr. Deepu Vijayasenan, Asst. Professor, Dept. of Electronics & Communication Engineering, N.I.T.K, Surathkal. The talk was about Digital Signal Compression, which includes various Digital signal applications, various methods of Signal Compression techniques in the current technology.

8. The technical talk was conducted on 6th November 2015 by Dr. D. Nirmal, Assc. Professor, School of Electrical Sciences, Karunya University, Coimbotore. The talk was about High Power & Low Power Devices in Nanotechnology, which includes scaling of devices and effects of scaling and the power associated with the scaled devices. The resource person had explained about the topic in detail to the students.


9. The Technical talk was conducted on 9th October 2015 by Dr. Somashekar Bhat, Professor & Head, Dept. of Electronics & Communication Engineering, Manipal Institute of Technology, Manipal. The talk was about “My Experiment in Teaching Analog Electronic circuits”, which includes various BJT Models, analysis of BJT circuits and the application. The resource person had explained in detail about the topic to the students.


10. The technical talk was conducted on 5th September 2015 by Mrs. Subhagya.D.S. , Consultant Engineer, Bengaluru, on the topic “Knowledge Management & Intellectual Property.In her talk she discussed about different forms of Knowledge Management and how students can make use of these concepts. She also highlighted different Intellectual Properties and explained about method required to avail patents.

11. The technical talk was conducted on 21st August 2015 delivered by Dr. D.V. Manjunatha, Professor , Dept. of E&CE, Sir M. Visvesvaraya Institute of Technology, Bengaluru. The talk was on the topic “Micro-Electro Mechanical Systems”, and he discussed about the application


12. Forum EVIONICS 2015-16 under Department of ECE conducted the first technical talk of the odd semester on 17th August, 2015 delivered by Dr. Vasantha M.H., Professor, Dept. of E&CE, National Institute of Technology, Goa., on the topic “Design of Differential Amplifier”. The talk was about the basics of FETs and their characteristics, operations in various regions and also about the design of CMOS amplifiers. In this talk design considerations and practical applications of the CMOS Amplifiers are clearly elaborated.