DEPARTMENT VISION

➢ To develop professionals having good knowledge skills and attitude to be competent enough in the global environment, to serve the society and IT industry.

DEPARTMENT MISSION

➢ To establish an environment for education and skill development on par with global environment.

➢ Providing state of art facilities, to achieve high quality in computer applications.

➢ To inculcate social and ethical responsibilities among the students to serve society and industry.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO'S)

PEO 1: Educate students to be successful computer application professional in a global environment.

PEO 2: Enhance the student's prospects for a career in academics and provide access to higher degrees by research programs and practice lifelong learning.

PEO 3: Provide exposure to cutting edge technologies and training to work on multidisciplinary projects   in a team.

PEO4: Develop a sense of social, ethical and professional responsibility with a capacity to demonstrate an understanding and application of the human dimension of technology and impact on mankind.

PROGRAMME OUTCOMES (PO'S)

PO 1: **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO 2: **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO 3: **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO 4: **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO 6: **Engineer and society:** Apply reasoning informed by the contextual knowledge to assesssocietal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering.

PO 7: **Environment and sustainability:** Understand the impact of the professional engineering solutions insocietal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms ofthe engineering practice.

PO 9: **Individual and team work:** Function effectively as an individual, and as a member or leader indiverse teams, and in multidisciplinary settings.

PO 10: **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

P0 11: **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 12: **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CONTENTS

SIR M.VISVESVARAYA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER APPLICATIONS

PRAGATI

MCA NEWSLETTER - 2019

The department was set up in 1998 with an annual intake of 30 students and subsequently enhanced to 60 over the years. The department has well-equipped laboratories with internet facility and good library. If offers an excellent academic students for holistic personality development, capability building in niche areas and confidence to take up the challenges of the dynamic socio-technical world. The departmental forum "PRAYOG" facilitates exposure to state-of-art industrial practices. The department organizes seminar series and workshops by eminent personalities from industry, academia and professional bodies to upgrade the technical and teaching skills of the staff. The department encourages participating in National/International conferences to present papers and learning upcoming knowledge. The department has a team of experienced and competent faculty members. The department has associated with Computer Society of India, a professional body, where all the MCA students possess membership, which helps them to cater the needs of the industry by attending CSI sponsored workshop/seminars.

TEACHING STAFFS:

Dr. Manjula Sanjay(HOD), Ms. Lakshmi.K, Ms. SujathaAnand, Ms. Latha.R, Ms. VaniHarave, Mr. Muthuramalingam.B, Mr. RaghavendraRao.B.G, Mr. Vasantha.S, Ms. Sneha Bharti, Ms. Komala.R.

NON-TEACHING STAFFS:

Ms. Ashwini.R, Ms. Nivedita.A, Mr. Prabhakara.S, Mr.Lakshmappa

PRINCIPAL MESSAGE:

It gives me great pleasure to write a few lines for the annual issue of MCA department Newsletter "PRAGATI" 2019. I believe this newsletter will provide the bench mark for continued improvement in overall development of the department. I hope, this newsletter will serve as a means of providing a complete package of expressing staff and student's creative ideas, innovative projects, achievements such as technical publications and related academic & research initiatives. It should also serve as a good source of guidance for staff and coming batches of students in choosing activities in the future for building their careers I congratulate the HOD, Staff and MCA Students for their tremendous enthusiasm, amazing involvement of academic interest that is shared in this issue of newsletter. My profound thanks to the editor and team of this newsletter for their initiative and interest in publishing it. I wish may the future issues grow with greater ideas through your appreciation and feedback.

HOD MESSAGE:

It gives me great pleasure to congratulate staff and students of department of Computer Applications for the publication of our newsletter "PRAGATI". Newsletter is an amalgamation of all the events held in the department during April 2018-2019 and it plays an instrumental role in providing a greater exposure of the achievements accomplished by the students and the faculty. We are very much grateful to our management and principal for their continuous support, inspiration and encouragement in bringing out this newsletter.

TECHNICAL EVENTS

Project Exhibition "Tech Pro 2K18" provided 6th semester students to exhibit their projects on 22nd May 2018. Dr. Prasad N. Hamsavath, Professor & Head, Dept. of Computer Applications, N.M.I.T., Bangalore, was the judge.

3-day Faculty Development Programme on "Mobile Applications" was organized from 17th to 21st July 2018. Resource Person: Mr. Vishwa Kiran, Consultant, Aprameyah Technologies Pvt. Ltd., Bangalore
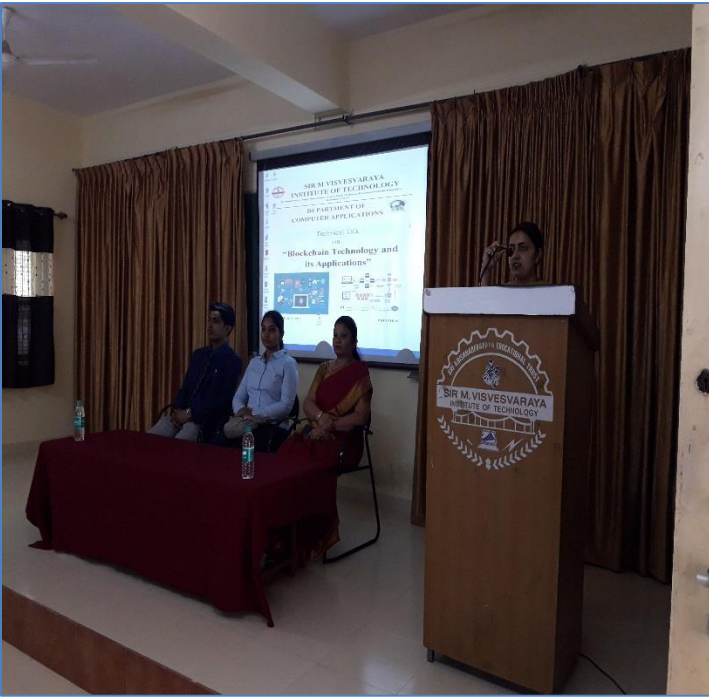
A technical Talk on "Blockchain Technology & It's Applications" was given by Mr. Ashwin Kumar, Head of Research & Development, Proprietor, RADEL Corp., Bangalore on 1st September 2018.

CSI Sponsored Student Development Programme on "App Building Fundamentals on Salesforce Cloud Platform" from Salesforce.com was organized on 12th to 16th November 2018 for 5th sem students. Resource person for this programme was Mr. Kumara Murali, Technical Trainer from Salesforce, Bangalore
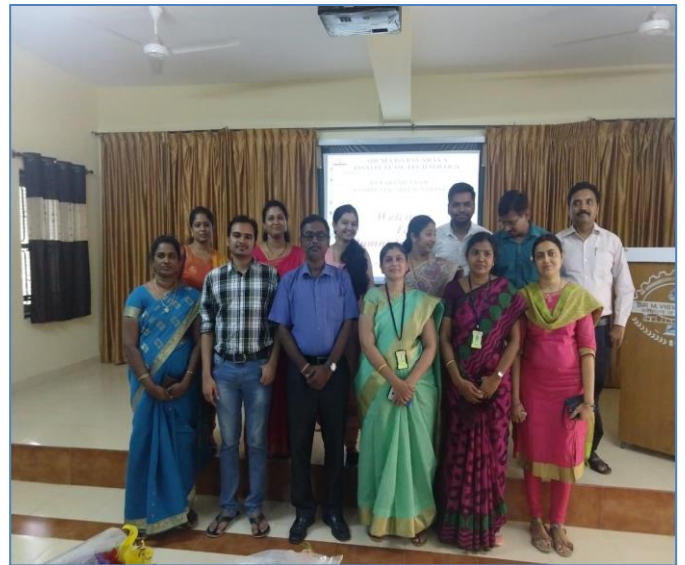
Alumni interaction -Mr. Sreendhi from Cerner, Ms. Prathima from Intel and Ms. NargisKhanum from IBM interacted and shared their experiences with 1st, 3rd and 5th sem students, 29th September 2018

CSI Sponsored Certification Programme was organized on 29th and 30th October 2018. This was led by Mr. Sachin Kumar, Programme Manager, Asia Pacific Region, VM-ware. Final year students from MCA/CSE/ISE department's secured digital badge from VMWare.

MOU:

- MOU has been signed between SIR MVIT and RADEL CORP, Bengaluru on Sep 1, 2018.

STAFF FOCUS

Awards and recognition:

- Dr. Manjula Sanjay Koti **has received Distinguished Educator award from International Institute of Organized Research, Chandigarh (July 2, 2018)**

- Dr. Manjula Sanjay Koti **has chaired the session at the International Conference on "Cyber Security & Privacy Control" on Oct 26-27, 2018 @ Suresh Gyan Vihar University, Jaipur in association with ELSEVIER.**

International Journal Publications:

- Dr. Manjula Sanjay Koti, "Predictive Analytics Techniques Using Big Data for Healthcare Databases", Springer series-Smart Innovation, Systems and Technologies, Vol 105, Springer, Singapore.
- Dr. Manjula Sanjay Koti, "The Role of Data Analytics in handling chronic diseases", International Journal of Advanced Studies of Scientific research, Vol 3, No. 12, 2018.
- Dr. Manjula Sanjay Koti,"Improved Quality of Patient Care and Data Security using Cloud Crypto System in EHR, Special Issue based on Proceedings of 4_{th} International Conference on Cyber Security (ICCS) 2018,indexed in Elsevier, 2018
- Dr. Manjula Sanjay Koti, "Role of Intelligent Tutoring System in enhancing the quality of education", International Journal of Advanced Studies of Scientific research, Vol 3, No. 12, 2018.
- Ms. Lakshmi K has published a paper on "Identification of significant nodes in communication network using maximal frequent sub graph mining" in Journal of Advanced Research in Dynamical and Control Systems (JARDCS), Volume 10(9), 2018.

Conference Publications:

- Mr. Raghavendra Rao B.G, Mr. Vasantha S & Yuvaraj U," Project Status Tracker", National Conference on Computer Applications & Communication Systems 2K18 - May 2018.

STUDENT FOCUS:

Conference:

Dr. Manjula Sanjay Koti, Prof. & Head- Dept. of Computer Applications & Mr. B. Muthuramalingam, Asst. Prof., Dept. of MCA along with 3rd semester MCA students attended "Cyber Security Conference – 2018" held on 9th September 2018 which was organized by Aegis School of Cyber Security at St. Joseph's Institute of

Poster Presentation:

Yashwanth S, Vishal Mahantesh, Rekha R on "Artificial Intelligence Softwares", National Seminar on Innovations in Science and Engineering, 25th -28th February 2019.

Ms. Lakshmi K, Nischal N.D, Shambavi G.S, Yogesh M on "Graph Mining Algorithms, Applications and Challenges", National Seminar on Innovations in Science and Engineering,


Vinaya C.G, Santosh Kumar R, Vishal Kumar Singh on "Implementation of IOT for various Applications using Raspberry Pi", National Seminar on Innovations in Science and Engineering, 25th -28th February 2019.

Latha, Poonam Patel, Shreya Soni on "Blockchain and its Applications"

Pranavi B.V, Reshma B on "Data Mining in Healthcare Sector",National Seminar on Innovations in Science and Engineering, 25th -28th February 2019.

Idea Presentation:

Ms. Latha, Poonam Patel, Shreya Soni on "Blockchain and its Applications" National Seminar on Innovations in Science and Engineering, 25th -28th February 2019.
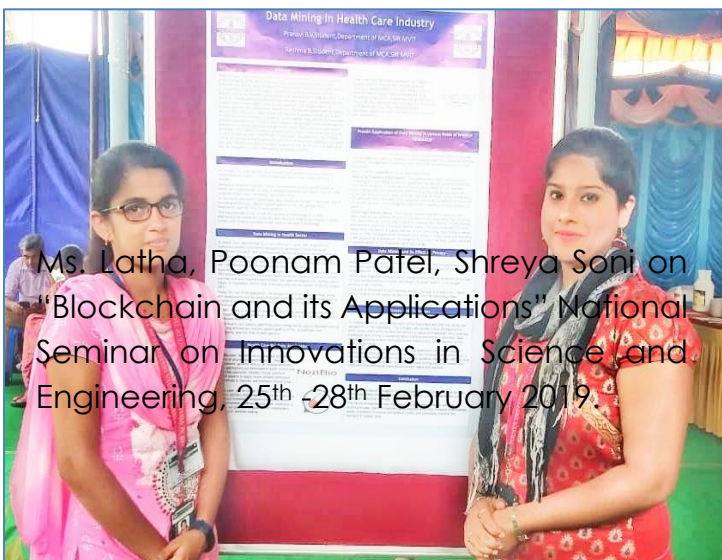
Paper presentation:

- Ms. Latha R, Shreya Soni, Poonam Patel, Vinaya C G. on "An overview of System Design Models", Technical Symposium, Oct 2018.
- Ms. Latha R, Pranavi B V ,Santosh Kumar R, Reshma B, Srinidhi U on "A Study on the Tizen Operating System", Technical Symposium, Oct 2018.
- Ms. Latha R, Yogesh Tripathi, Osama Imam, Manish on "Blue Eyes Technology", Technical Symposium, Oct 2018.
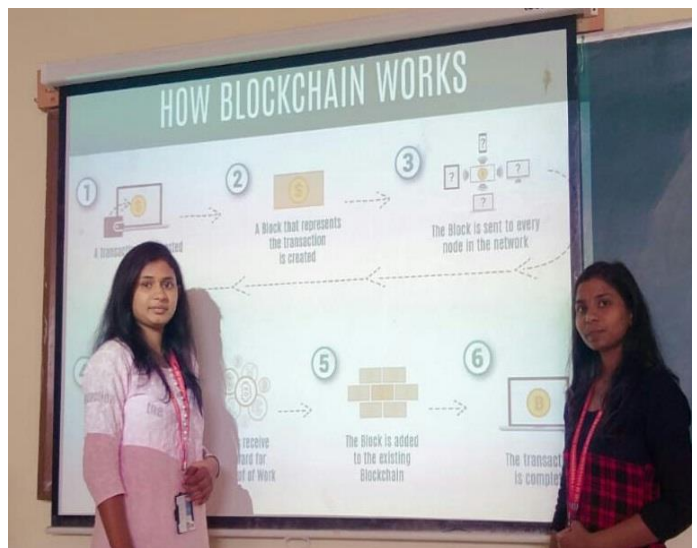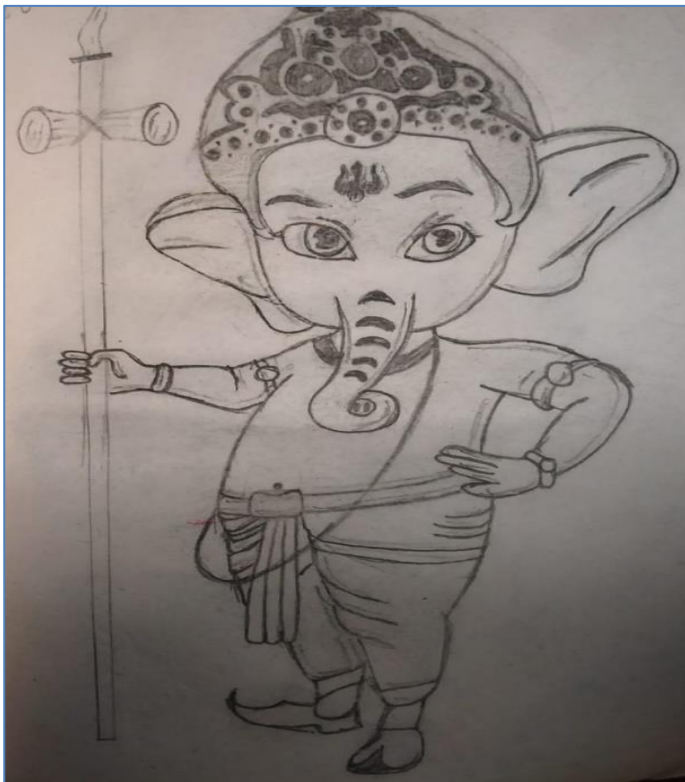
Fests:

Maneesh, hariprasad, theertesh, srinidhi-karthik, osama participated in "abhyuday6.0" MS Ramaiah college fest on 28 March 2019.

ART & CRAFT:

ART BY- Malini P, 4th Sem, MCA

ART BY-
Ankita Kumari, 2nd Sem, MCA

SPORTS ACHIVEMENTS:

1. SatishR , Tarun Simha and Sagar S represented our college in "Spardha" organized by CMR Institute of Technology for the event khokho and won the runners cup on 3rd and 4th October 2018.

2. Satish R., 4th semester MCA student has participated in Inter-Collegiate Kho-Kho tournament 2018 on 6th , 7th April 2018 held at SJCIT, Chickballapur

3. Sagar S., 4th semester MCA student has participated in Inter-School Rugby Championship at Central College Ground, Bangalore from 2nd April to 15th April 2018.

4. Satish S and Sagar R have represented department of MCA in annual sports meet held by Sir M Visvesvaraya Institute of Technology on 29th April 2018. Sagar S was awarded best player award for Taekwondo and won Silver Medal in Javelin throw. Satish R won silver medal in 400 meters.

5. Uday, Nischal, Vinay, Vinay, subramnai, Sunil participated in intra college volleyball event.

6. Aruna, Chandana, Shambavi, Malini, Arundathi, Akishita, Shanta, Sushma, Raksha participated in intra college Throwball event.
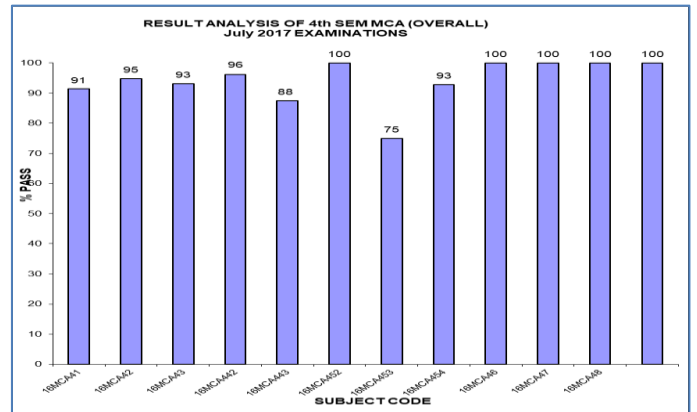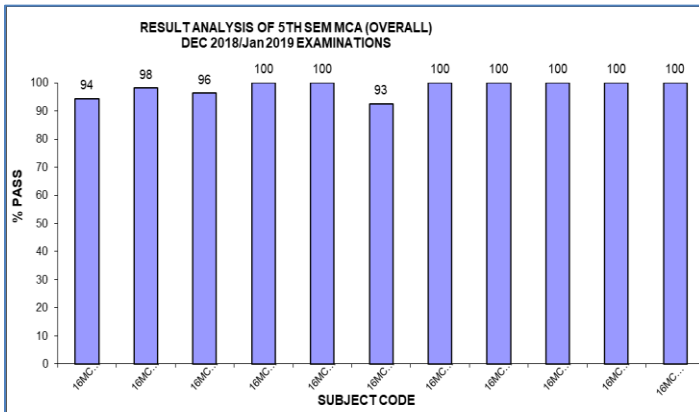

7. Uday Kumar, Anil Kumar, Rakesh, Bandaru Naveen, Yogesh, Khadir Pasha, Sunil Kumar, Vinay kumar participated in intra college Kabadi event.

RESULTS:

5th and 4thSEM

RESULT ANALYSIS OF 5TH SEM MCA (OVERALL)
DEC 2018/Jan 2019 EXAMINATIONS

RESULT ANALYSIS OF 4th SEM MCA (OVERALL)
July 2017 EXAMINATIONS

PALLAVI. P

VEERANNA D. MALLUR (80%)

(80%)

SHANANTH KUMAR. N (74%)

3rd and 2ndSEM

RESULT ANALYSIS OF 3rd SEM MCA (OVERALL)
Jan 2019 EXAMINATIONS

RESULT ANALYSIS OF 2nd SEM MCA (OVERALL)
JULY 2018 EXAMINATIONS
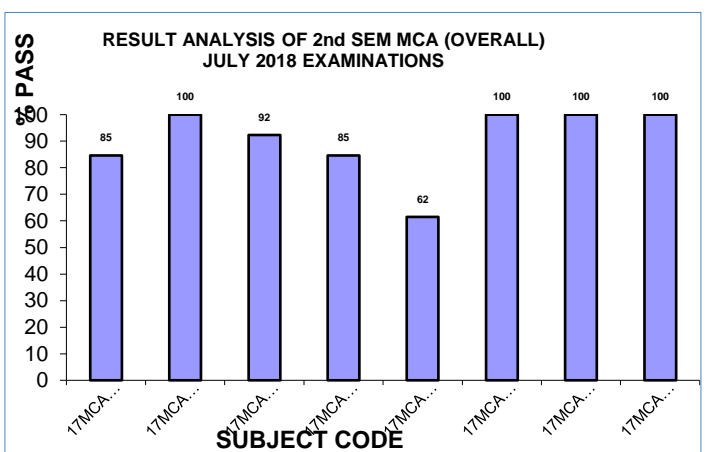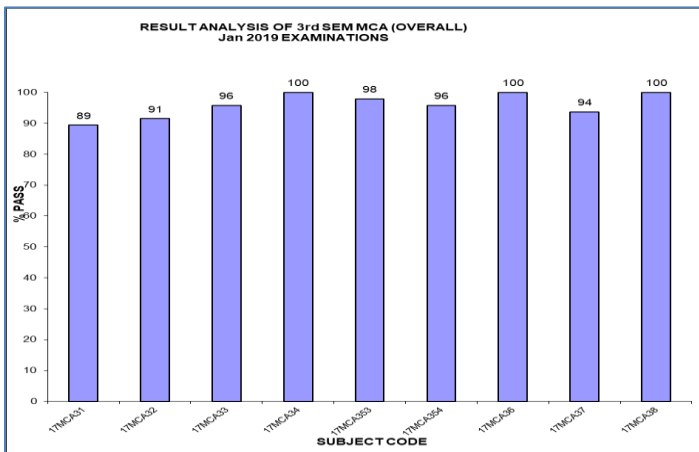
SHREYA SONI (84%)

ARUNA.H (78%)

SANGEETHA N.B (78%)

1st SEM

RESULT ANALYSIS OF 1ST SEM MCA (OVERALL)
JAN 2019 EXAMINATIONS

SUBJECT CODE	% PASS
18MCA11	91
18MCA12	91
18MCA13	82
18MCA14	91
18MCA15	100
18MCA16	100
18MCA17	100
18MCA18	100
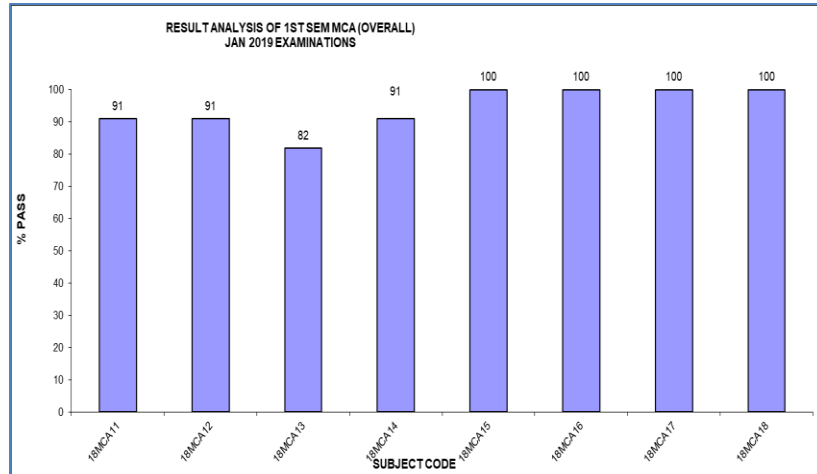
DURGA DEVI (84%)

THEERTHESH T.P (83%)

UTTANURU SRINIDHI (82%)

TECH ARTICLES:

Machine learning

Arthur Samuelan American pioneer in the field of computer gaming and artificial intelligence, coined the term "Machine Learning" in 1959 while at IBM.[Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.

Machine learning algorithms build a mathematical model of sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to perform the task. Machine learning algorithms are used in a wide variety of applications, such as email filtering, and computer vision, where it is infeasible to develop an algorithm of specific instructions for performing the task. Machine learning is closely related to computational statistics, which focuses on making predictions using computers. The study of mathematical optimization delivers methods, theory and application domains to the field of machine learning. Data mining is a field of study within machine learning, and focuses on exploratory data analysis through unsupervised learning. In its application across business problems, machine learning is also referred to as analytics. The top five programming languages used for artificial intelligence (AI) is Python, R, Lisp, Prolog and Java.

- Compiled By, Ms. Latha. R, Associate professor, Dept of MCA.

Raspberry pi

The Raspberry Pi is a small, barebones computer developed by The Raspberry Pi Foundation, a UK charity, with the intention of providing low-cost computers and free software to students. Their ultimate goal is to foster computer science education and they hope that this small, affordable computer will be a tool that enables that.

The Raspberry Pi launched in 2012, and there have been several iterations and variations released since then. The original Pi had a single-core 700MHz CPU and just 256MB RAM, and the latest model has a quad-core 1.4GHz CPU with 1GB RAM. The main price point for Raspberry Pi has always been $35 and all models have been $35 or less, including the Pi Zero, which costs just $5.

The Raspberry Pi is a very cheap computer that runs Linux, but it also provides a set of GPIO (general purpose input/output) pins that allow you to control electronic components for physical computing and explore the Internet of Things (IoT).

What are raspberry pi models released?

Pi 1 Model B (2012)
Pi 1 Model A (2013)
Pi 1 Model B+ (2014)
Pi 1 Model A+ (2014)
Pi 2 Model B (2015)

Pi Zero (2015)
Pi 3 Model B (2016)
Pi Zero W (2017)
Pi 3 Model B+ (2018)
Pi 3 Model A+ (2019)

What's the Raspberry Pi Foundation?

The Raspberry Pi Foundation works to put the power of computing and digital making into the hands of people all over the world. It does this by providing low-cost, high-performance computers that people use to learn, solve problems, and have fun. It provides outreach and education to help more people access computing and digital making—it develops free resources to help people learn about computing and making things with computers and also trains educators who can guide other people to learn.

Code Club and Coder Dojo are part of the Raspberry Pi Foundation, although these programs are platform-agnostic (not tied to Raspberry Pi hardware). Raspberry Pi promotes these clubs and helps grow the network around the world in order to ensure every child has access to learning about computing.

Is Raspberry Pi an open source?

The Raspberry Pi operates in the open source ecosystem: it runs Linux (a variety of distributions), and its main supported operating system, Raspbian, is open source and runs a suite of open source software. The Raspberry Pi Foundation contributes to the Linux kernel and various other open source projects as well as releasing much of its own software as open source.

The Raspberry Pi's schematics are released, but the board itself is not open hardware. The Raspberry Pi Foundation relies on income from the sale of Raspberry Pis to do its charitable work.

What can you do with a Raspberry Pi?

Some people buy a Raspberry Pi to learn to code, and people who can already code use the Pi to learn to code electronics for physical projects. The Raspberry Pi can open opportunities for you to create your own home automation projects, which is popular among people in the open source community because it puts you in control, rather than using a proprietary closed system.

– Compiled By Vinaya G, 4th Sem MCA

Network Mapper

Abstract: Nmap is a free and open source utility for network discovery and security auditing. Many systems and network administrators find it useful for tasks such as network inventory, managing service upgrade schedules, and monitoring host or service uptime. Nmap uses raw IP packets in novel ways to determine what hosts are available on the network, what services (application name and version) those hosts are offering, what operating systems (and OS versions) they are running, what type of packet filters/firewalls are in use, and dozens of other characteristics. It was designed to rapidly scan large networks, but works fine against single hosts.

Introduction: Nmap, short for Network Mapper, is a network discovery and security auditing tool. Nmap is one of the most commonly used tools by ethical hackers. It is known for its simple and easy to remember flags that provide powerful scanning options. Nmap is widely used by network administrators to scan for:

- Open ports and services
- Discover services along with their versions
- Guess the operating system running on a target machine
- Get accurate packet routes till the target machine
- Monitoring hosts

NMAP SCAN TYPES

TCP SCAN: A TCP scan is generally used to check and complete a three-way handshake between you and a chosen target system. A TCP scan is generally very noisy and can be detected with almost little to no effort. This is "noisy" because the services can log the sender IP address and might trigger Intrusion Detection Systems.

UDP SCAN: UDP scans are used to check whether there is any UDP port up and listening for incoming requests on the target machine. Unlike TCP, UDP has no mechanism to respond with a positive acknowledgment, so there is always a chance for a false positive in the scan results. However, UDP scans are used to reveal Trojan horses that might be running on UDP ports or even reveal hidden RPC services. This type of scan tends to be quite slow because machines, in general, tend to slow down their responses to this kind of traffic as a precautionary measure.

SYN SCAN: This is another form of TCP scan. The difference is unlike a normal TCP scan, nmap itself crafts a syn packet, which is the first packet that is sent to establish a TCP connection. What is important to note here is that the connection is never formed, rather the responses to these specially crafted packets are analyzed by Nmap to produce scan results.

ACK SCAN: ACK scans are used to determine whether a particular port is filtered or not. This proves to be extremely helpful when trying to probe for firewalls and their existing set of rules. Simple packet filtering will allow established connections (packets with the ACK bit set), whereas a more sophisticated stateful firewall might not.

– Compiled By Santosh Kumar R, 4th Sem MCA

Future of IOT

ABSTRACT: No matter which way you look at it, technology has been headed towards automation for a long time now. In fact, isn't the very basic principle of technology to make our lives easier by leaving fewer things to be explicitly done by us? It might be making us all lazier every day, or one might argue that it is giving us far greater time to pursue whatever we desire. Whatever might be the effect, there is no doubt that automation is the future and place that it is happening the most significantly is right in our homes.

INTRODUCTION: IOT has become so vital in our daily life and it is going to create a big impact in the near future. For example, solutions can be provided instantly for the traffic flows, reminding about the vehicle maintenance, reduce energy consumption. Monitoring sensors will diagnose pending maintenance issues, and even prioritize maintenance crew schedules for repair equipment. Data analysis systems will help metropolitan and cosmopolitan cities to function easily in terms of traffic management, waste management, pollution control, law enforcement and other major functions efficiently.

Big Data manages the enormous amount of data generated using its technologies. The Internet of Things (IoT) and big data are two vital subjects in commercial, industrial, and many other applications. The name IoT was framed in approximately a decade ago and refers to the world of machines or

devices connected to the Internet, by which a large amount of big data is collected, stored and managed. Big data additionally refers to the analysis of this generated data to produce useful results. The main motivating power behind the IoT and big data has been the collection and analysis of data related to consumer activities in order to find out why and what customers buy.

IOT IN FUTURE: The 5G will enable connected cars to send and receive messages 10 times faster. According to a recent report, the global connected car market is expected to grow from 5.1 Million units in 2015 to 37.7 million units by 2022. Adoption of telematics units and advances in tech with emphasis on driver and passenger experience along with safety and cyber security are ushering in a new era of growth for connected cars globally. India is expected to emerge as a huge market for such vehicles. Currently, less,than 2 percent of all vehicles sold in the country have some form of connectivity embedded in them.

CONCLUSION: A connected car can dig into its database to come out with suggestions on your favourite number or best route available to pick up your child from her piano class every Friday. With the arrival of 5G, connectivity issues will be a thing of the past. 5G will enable connected cars to send and receive messages faster(up to 10 times a second). 5G will also enable more situational awareness and provide advance warning in case any roadblock or hindrance were to appear on the road you are driving on thereby giving you more time to react.

– Compiled By Yogesh M, 4th Sem MCA

PLACEMENTS:

All our students are undergoing internship in reputed IT firms & most of them are placed in top MNC's working on various technologies like Cloud Analytics, Social Media Mining & Mobile Computing.