



**Proficiency Prize Winner (2013 - 16 MCA)**  
**Ashvina Kumari N**  
( Gold Medal )



**Proficiency Prize Winner (2013 - 16 MCA)**  
**Ganesh R**  
( Silver Medal )

**Our Students won the Best Research Paper Award at An International Conference INIT 2K17, held at St. Claret College, Bengaluru in association with CSI.**



**Best Research Paper Award 2017**  
**Mr. Jerin John**  
IV sem MCA



**Best Research Paper Award 2017**  
**Ms. Athira Thomas**  
IV sem MCA

## EDITORS

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(II sem MCA)

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(IV sem MCA)

**Mr. Ashwin Prakash Patil**  
(IV sem MCA)

**Mr. Kurian George C**  
(IV sem MCA)

**MCA Faculties**

**ROOF** is derived from **Real-time Onsite Operations Facilitation**, a key requirement for the Internet of Things. Roof is a federated networking and computational paradigm for the Internet of Things (IoT).



## THE ROOF COMPUTING

**Mr. Syam Madanapalli**

[ IoT - Engineer | Architect | Author | Speaker ]

### ORIGIN

In the early 2000s the term cloud computing was trending and in 2013 I heard about yet another computing model – Fog computing, as we have fog below the clouds. Then, I started thinking, what is beneath the fog, so that I can predict the next computing paradigm.

I found that we have roofs below the fog, and I was sure somebody would be proposing the Roof Computing, but I did not know that it would be me.

### The Roof Computing for the Internet of Things

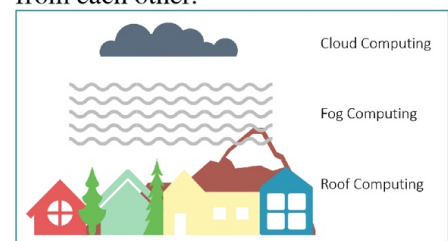
Roof Computing, unlike the Fog and the Cloud, is always available as the next hop for the Things and provides realtime computing needs for building the context and required actions, security and privacy, and efficient and flexible connectivity to the Cloud/ Service providers. Roof can be implemented in IoT gateways, home routers, mobile phones, personal computing platforms and other embedded platforms that proxy the Things for connectivity to the network and the Cloud.

Roof Computing is placed at few meters (or one hop) away from the Things and far below the Fog and Cloud. The IoT gateways and other device that implement the Roof will be

able to support the last meter connectivity for the Things. The Roof network architecture reflects the traditional federated networking architecture that is being practiced since the widespread use of the Internet. Roof enables this model for the Internet of Things for natural fit into the Internet and Cloud architecture.

The Roof bridges the physical world and cyber world in creating highly scalable cyber physical systems for the IoT by connecting the Things and systems to the Cloud to build cyber system for the respective physical systems.

The Roof Computing reduces complexity, and increases security and agility for managing large scale IoT networks. Roof allows each of the IoT element (Things, Gateway, Cloud and Applications) to evolve independently from each other.



### The Roof Functionality

The primary goal for the Roof is to provide highly functional, secure and scalable Internet of Things. To meet this goal, Roof provides four main functionalities .

1. Interoperable connectivity for the Things under the Roof
2. Context building and decisions to take actions in realtime
3. Information management and efficient connectivity to the Cloud and Service providers
4. Security & privacy by design

## VICE PRINCIPAL'S MESSAGE



Prominence of Information Technology in daily life has become inevitable than ever before. There is no walk of life that is not been touched by the magical wand of IT. Despite hectic schedules and targets profession in IT sector always wins in the long run. Globalization and Liberalization has their wings in the world and even beyond that in terms of bringing the global space on to a common platform. Ranging from magnificent infrastructures to wearable transmitters, IT manages it all. Information Technology is transforming the conduct of business on a global scale. It is also transforming the teaching-learning process in education. Education plays a major role in the pursuit of an important goal, viz., to be update and be a leader in information world of tomorrow. Technology allows students to become much more engaged in constructing their own knowledge. Cognitive studies show that ability is key to learning success. There may be powerful ways to blur the distinction between formal learning and informal where both turn on the social life of learning. Of course, we need to get back to basics refining the most effect modes of teaching, mentoring, and coaching, but we also should put some thought to informal teaching to support the inevitability and necessity of informal learning. Fortunately, the networked age might be the “silver bullet” that will provide a way to both

improve education and to set the stage for a necessary culture of learning. In the digital age, communities self-organize around the Internet, which has created a global platform that has vastly expanded access to all sorts of resources including formal and informal educational materials. New kinds of online resources such as social networking sites, blogs, wikis, and virtual communities, have allowed people with common interests to meet, share ideas, and collaborate in innovative ways.

The Department of Computer Science (PG), Kristu Jayanti College aspires at intensifying this new way of learning experience among the students to amalgamate both formal and informal education. Apart from the delivery of the curriculum through various novel teaching pedagogies, we involve them in social learning to augment and sustain the technical skills of the students.

‘Technobytes’ , the biannual newsletter of the department, brings to limelight activities and achievements of the department. It captures the glimpses of all academic, curricular and co-curricular activities, initiatives and achievements. I wish this endeavor a great success and I take this opportunity to appreciate the tireless efforts of every creative mind behind it.

**Fr. Augustine George**  
Vice Principal

## DEAN'S MESSAGE

Information technology has served as a big change agent in different aspects of business and society. It has emerged as an important area of study and is having a major impact in the higher education sector. Information Technology education creates skilled manpower, increases industrial productivity and improves the overall quality of life. Advancement and application of information technology are ever changing. To enter the workforce of skilled manpower, there is a continuous need to keep abreast the latest in this field. Technobyte will be an amalgamation of creative constituents formulated by students and faculty members and will inspire discussions on conventional, current and futuristic issues in the field of Information Technology. The newsletter also showcases the latest activities and achievements of the Department of Computer Science (PG) reflecting the vibrancy of the student community and teaching fraternity.



**Dr. A.L. Calistus Jude**  
Dean of Sciences

# MCA PROGRAMME AT A GLANCE



The Department of Computer Science - PG (MCA) of Kristu Jayanti College was established in the year 2004 with the objective of imparting technical education to aspiring youth to mould them into professionally competent workforce. Master of Computer Application is a three-year (six semesters) professional Master's Degree in Computer Science. The programme is designed to meet the growing demand for qualified professionals in the field of Information Technology. At present there are 129 students in the Department.

The autonomous curriculum is designed to hone strong software competencies, analytical and problem solving skills which are essential pre-requisites for a successful software professionals. The course structure and contents are regularly updated as per the latest requirement.

The learning environment is intense and stimulating. The regular academic programme is enhanced by Seminars, Workshops, Personality Development Programmes, Attitudinal Workshop, Soft Skills Training, Tech-Talk Series, Student Seminar Series, Communication sessions, paper presentations and Aptitude Reinforcement modules. Experts from industry conduct the sessions on a continuing basis. The students have participated in many inter-collegiate fests, international conferences,

presented papers and brought laurels to the institution. The Intra-collegiate fest Manoeuvre was conducted on 23<sup>rd</sup> October 2016. Shells 2017, and inter-collegiate fest was conducted on 02<sup>nd</sup> – 03<sup>rd</sup>, February, 2017. 121 participants from 14 colleges participated in the fest.

The students and the faculties are kept exposed to the latest developments in the industry. As part of knowledge sharing, peer to peer teaching is motivated amongst the students.

Department has launched IEEE Student Branch and is life time member of CSI. The IEEE Student Branch of our College is actively involved in conducting and participating in conferences, seminars and workshops.

The special feature of the Department includes successful conduct of International Conference on Current Trends in Advanced Computing (ICCTAC) once in a year. ICCTAC 17 is scheduled on 02<sup>nd</sup> – 03<sup>rd</sup>, March, 2017 which is technically co-sponsored by IEEE Bangalore section. The presented papers will be published in IEEE Xplore.

**Prof. Kumar R**

Head, Department of Computer Science (PG)

Machine Learning and Cognitive Computing are today's industry buzzwords. Both are related to Artificial Intelligence. Machine Learning detects patterns and projects information using different mechanisms using mathematical and statistical models. It does feature extraction, clustering and classification. Machine learning provides information relevant to the user by extracting patterns and improving search results. It also helps to provide suggestions about related content that are related to user's selection. Whereas Cognitive computing makes machines more user friendly by creating interfaces that understand what user wants.

## Machine Learning Principle



It takes input as signals and provides correct responses. Ex: Siri – Intelligent personal assistant uses natural language user interface understands context – whether user is in car or at home and give personal responses. There are several applications these systems play major role where algorithms are very hard to design, when application require to adapt environment or complex systems with extensive and complex data sets. Machine learning, cognitive systems and many other disciplines within the field of Artificial Intelligence has gained popularity and will have tremendous impact on the software industry.

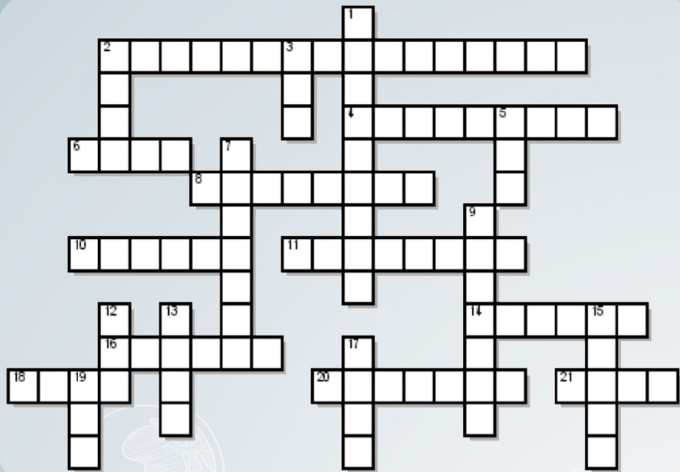
## “Artificial Intelligence

An Umbrella for Machine Learning and Cognitive Computing”

Dr. Ambika



## CROSS WORDS



### ACROSS

Mr. Deepak Dulal ( II sem MCA )

2. Performs the functions of file transfer, e-mail, etc.
4. I created the first ever AI-made movie trailer for movie "Morgan"
6. Sonar concept implemented with the Echo Request and Echo Reply application; basic connectivity test between two TCP/IP network devices.
8. Client applications that access WWW servers
10. First internet search engine
11. Company that invented Bluetooth.
14. Android 4.0
16. Database embedded into every Android device
18. In JavaScript \_\_\_\_\_ refers to the current object in an object method
20. American semi-secret research-and-development facility founded by Google in January 2010

- Down:
01. WIKIPEDIA
  02. ANSI
  03. API
  05. TAY
  07. TREESET
  09. COOKIES
  12. RSS
  13. ALLO
  15. APPLE
  17. FORK
  19. IBM

- Across:
04. IBMWATSON
  06. PING
  08. BROWSERS
  10. ARCHIE
  11. ERICSSON
  14. KITKAT
  16. SÖLITE
  18. THIS
  20. GOOGLEX
  21. JPEG

### ANSWERS

### DOWN

1. Several users can make changes to the content of this website
2. A voluntary organization that coordinates the development and use of consensus standards in the United States and represents the needs and views of U.S. stakeholders in standardization forums around the globe.
3. Gives programmers a formal set of routines to call on to use underlying network services.
5. An artificial intelligence chatterbot released by Microsoft on March 23, 2016.
7. Set implemented when we want elements in a sorted order in JAVA
9. The most widely supported method of persistent data storage in JavaScript are \_\_\_\_.
12. Uses a family of standard web feed formats to publish frequently updated information: blog entries, news headlines, audio, and video.
13. Google's new smart instant messaging mobile app
15. "Think different"
17. System call for creating a new process in linux/unix



## Long-lasting flow battery could run for more than a decade with minimum upkeep

Researchers from the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS) have developed a new flow battery that stores energy in organic molecules dissolved in neutral pH water. This new chemistry allows for a non-toxic, non-corrosive battery with an exceptionally long lifetime and offers the potential to significantly decrease the costs of production.



Flow batteries store energy in liquid solutions in external tanks - the bigger the tanks, the more energy they store. Flow batteries are a promising storage solution for renewable, intermittent energy like wind and solar but today's flow batteries often suffer degraded energy storage capacity after many charge-discharge cycles. The Harvard team was able to engineer a battery that loses only one percent of its capacity per 1000 cycles. "Lithium ion batteries don't even survive 1000 complete charge/discharge cycles," said [researcher Michael] Aziz. "Because we were able to dissolve the electrolytes in neutral water, this is a long-lasting battery that you could put in your basement," said [researcher Roy] Gordon. "If it spilled on the floor, it wouldn't eat the concrete and since the medium is noncorrosive, you can use cheaper materials to build the components of the batteries, like the tanks and pumps." The Department of Energy (DOE) has set a goal of building a battery that can store energy for less than \$100 per kilowatt-hour. "If you can get anywhere near this cost target then you change the world," said Aziz.

Ms. Leena K S, Mr. Sacheetha T,  
Mr. Shahjahan (II sem MCA)

## RANSOMWARE: THE NEW ATTACK

Ransomware the newest threat to computer users. It is a software virus that blocks your computer system until you pay money. The viruses have names like Cryptolocker or Cryptowall. The first ransomware viruses appeared in 2013 but they have become more dangerous recently. These viruses can sweep across the internet and infect millions of computers overnight.

Ransomware viruses is spreader via links, unauthorized downloads, email attachments etc. In many cases the virus stops the hard drive from working documents and photos, which become useless. Hackers demand for money, ranging from a few to a thousand dollars, for letting to control computer again. These virus developers are always looking for new ways to make money. Last year ransomware virus attacks went up by 100%. And currently, there are about 30,000 infections around the world every day.

To be secured- "Do not download suspicious files from the internet and try to be careful when you open email attachments". Finally, allow operating system to update regularly and make sure anti-virus databases are up-to-date and have frequent back up of the files and data.

Ms. Arya Peter (IV sem MCA)

## RESEARCH COLLOQUIUM



Research colloquium was held on 26/11/2016 on the topic-‘ How to prepare a research proposal and which are the funding agencies and how to identify the quality of journals that we choose for publications. The resource person was: Dr. Subashini. P, Professor, Department of Computer Science, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore.



## MANOEUVRE 2016 INTRA-COLLEGIATE FEST

Manoeuvre, the intra-college fest for MCA students was held on 23rd of September 2016 with the theme ‘Wear-ons’-‘Digital You’. The 3rd year students held 10 exciting events – Web Designing, Coding, IT Quiz, Junk Yard, Entrepreneurship, Treasure Hunt, Gaming, Short Film, News hunt and IT manager to bring out the competitive spirit of the first and 2nd year students.

Co-coordinated by Prof. Mrs. Jyothi Manoj and students Melbin Kuriakose and Vijaya the fest saw 125 enthusiastic and energetic students giving their best in the various events.

Manoeuvre 2016 was inaugurated by Mr. Sanjoe Tom Jose, CEO Talview, Bangalore. The valedictory ceremony was presided by Principal Rev. Fr. Josekutty and the chief guest was Ms. Divya Mehrothra, Chief Information, Officer Happy Locate relocate services, Bangalore.

Jobith M Basheer of III MCA won the title “Star of Manoeuvre” and IT manager was won by Aleena of I MCA. The overall title was won by team Athos

## SHELLS 2017 NATIONAL LEVEL INTER-COLLEGIATE IT FEST

The 11th edition of the National Level IT Fest conducted by the Department of Computer Science (PG) – SHELLS 2K17 was held on 2nd and 3rd of February 2017. Shells 2K17 was Inaugurated on 2nd February 2017 by Mr. Sivan Menon (CTO, GE).

About 121 talented participants from 14 colleges who registered and show cased a healthy competition. The theme for Shells 2K17 was “CHATBOTS” that is based on

# 2017

## INTRA & INTER COLLEGIATE FESTS



Augmented Reality and Tagline as “INNOVATING WITH INTELLIGENT INTERFACES”. There are 10 exciting events that will fascinate the students from various colleges which include Coding, IT Manager, Web Designing, IT Quiz, IT Tycoon, Gaming, Networks, Multimedia,

Treasure Hunt and Event-X. Different committees were formed such as Designing, Sponsorship and invitation, promotion, Onstage, Offstage, Escort, Control room, Registration, Venue management etc.

The art of making this event successful every year is the motivation of the core management team, enthusiasm of the Faculties, Co-operation and unity of the students. The Student coordinators of Shells 2K17 are Mr. Sonu Abraham, Mr. Sudeep Stephen, Ms. Neha Paul and Ms. Shruthi C D.

Each year Shells has marked higher standard and set new goals for the next year. This year exclusively for registration and result publishing a new app SHELLS 2K17 with Augmented reality was developed by our Students Mr. Jobith M Basheer and Mr. Jijo Joseph.



Yet another attraction of shells was the fascinating event coding for which the winners were awarded with a job offer in UST Global. This is the sixth consecutive time UST global is rendering us the job offer during shells.

Mr. Lokesh Srinivasan was the Chief Guest for the Shells 2K17 Valedictory ceremony. He accompanied with Prof. Aruna Devi K, Prof. Kumar R and Rev. Fr. Augustine George declared and bestowed the various event winners, the overall winners and runners up with certificates, trophies and cash prizes.

DATE OF THE EVENT	TITLE OF THE EVENT ORGANIZED	NAME OF THE RESOURCE PERSON/S WITH DESIGNATION
07.01.2017	<b>Alumni Interaction</b> – Overview of AWS (Intra)	<b>Mr. ArunKumar</b> , Software Engineer, NY Web Solutions
16.01.2017	<b>Workshop</b> on Digital Convergence for Smart Life (Inter)	<b>Session I : Mr. Kishore Annam</b> , Principal Consultant Telecom, United Telecoms <b>Session II : Mr. Syed Saif Abrar</b> , IBM OpenPower, Bangalore <b>Session III: Ms. Janaki</b> , Principal Technical Officer, CDAC
18.02.2017	<b>Seminar</b> on Artificial Intelligence – A Simple Approach (Intra)	<b>Mr. Ram Dayal Goyal</b> , Vice President Engineering, Growth Enabler
25.02.2017	<b>Peer-Peer teaching</b> (Intra)	<b>Mr. Sudeep P and Ms. Geetha IV MCA</b>
23.09.2016	<b>Manoeuvre 2016</b> (Intra Collegiate Fest)	<b>Inauguration : Chief Guest : Mr. Sanjoe Tom Jose</b> , CEO Talview,Bangalore <b>Valedictory: Chief Guest : Ms. Divya Mehrothra</b> , CIO, Happy Locate Relocation
02.02.2017 03.02.2017	<b>SHELLS 2017</b> (National Level Inter Collegiate Fest )	<b>Chief Guest : Mr.Sivan Menon</b> , Chief Technology officer SW,GE Health Care.
26.11.2016	<b>Research Colloquium</b> – Writing of proposals and funding agencies ( Intra )	<b>Dr. Subhashini.P.</b> , Professor, Department of Computer Science,Avinashilingam University, Coimbatore



# IEEE

## WORKSHOP

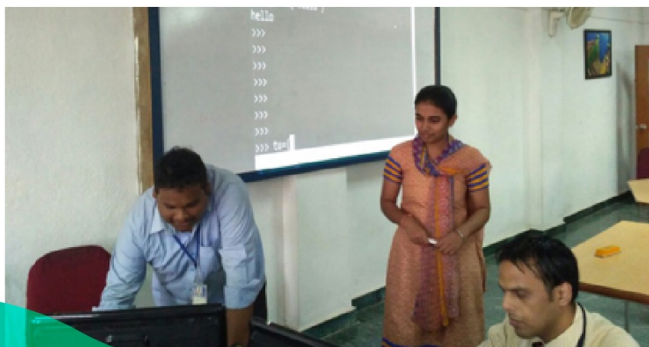
A One Day Workshop on “Digital Convergence for Smart Life” was conducted by the Department of Computer Science PG on 16-01-2017. In all they were four sessions:

The First Session by Mr. Kishore Annam, Principal Consultant Telecom, United Telecoms Technologies was about Wearables and Data Mining. The resource person for the second session was Mr.Syed Saif Abrar, IBM Open Power, Bangalore who spoke about IoT, IEEE, Academics. Session III: was by Ms. Janaki, Principal Technical Officer, CDAC her topic was Big Data in Life Sciences. The last session was by Mr. Navaneetha Krishnan, Senior Scientist, Philips and he spoke about Connected Health.

## PEER - PEER TEACHING



A session on python was organised by Department of Computer Science(PG) on 27<sup>th</sup> February 2017 at Lab I in PG block. The session was handled by Mr.Sudeep P and Ms. Geetha N both students of IV Sem, MCA department.



# ACHIEVEMENTS OF DEPARTMENT



## OVERALLS

Department won 4 Overalls in National Level Inter Collegiate Fest conducted by various colleges during this academic year 2016- 2017. The Colleges are Presidency College, Christ University, Ethiraj College and Jyothi Nivas College and won cash prizes and awards during the fest.



**Kristu Jayanti is the First and only Arts and Science College in Asia having IEEE Student Chapter.**

## SOFTWARE DEVELOPMENT CELL

- 1** **EVENT REGISTRATION PORTAL**  
 Jayantians can reserve their seats online for any events happening in the college through this portal.
- 2** **MARKS CARD PRINTING PORTAL**  
 Portal used by the COE office for printing the marks cards.
- 3** **CBCS COURSE ALLOTMENT PORTAL**  
 CBCS portal helps students to choose their credit based course offered by other departments.
- 4** **e-NEWS LETTER (GLIMPSES)**  
 Portal to generate and circulate weekly e-NewsLetter via email.
- 5** **RESULT PORTAL**  
 Portal publishes the results of examinations.

## PLACEMENT DETAILS 2014 - 2017 BATCH

Name	Designation & Name of the Company
Mr. Asish Tom	Associate Software Engineer , UST Global
Ms. Rincy Cherian Mr. Mutum Satyajit Singh	Software Engineer , Great West Finance
Mr. Anish Jiben Mr. Inderpreet Singh	Associate Software Engineer , Trivium E-Solutions
Mr. Mutum Amarjit Singh Ms. Vijaya Mr. Shijo Shaji	Associate SAP Consultant , Utegration India Pvt., Ltd.
Mr. Mathewkutty Mathew Ms. Vandhana Mr. Gulson Kumar Keisham Ms. Annie Myrtle Prakash	Software Engineer , SilfraTech
Mr. Nithin Koshy	Database Administrator , Synchron
Ms. Sherin Baby	Software Analyst , Geiom Software Pvt., Ltd.
Ms. Sangeetha	Associate Software Engineer , UST Global