

# Kristu Jayanti College, Autonomous

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#### FROM THE EDITORIAL TEAM

Dear Readers.

Welcome to 2020 issue of Interface, the Computer Science Department's Newsletter.

This issue covers all the activities happened in the department in the year 2019. The department witnessed a plethora of activities ranging from organising conferences and exhibitions, going for industrial visits, conducting workshops, social outreach programs to name a few. As the editors, we have tried to bring a glimpse on each of the programmes organised by the department. Due care is made to highlight the essence of each programme. Apart from reports about the various activities, the newsletter includes articles contributed by students, faculty members and alumni.

We would like to thank all the people who contributed in bringing out this issue.

We hope that you will enjoy reading this issue.

Editorial Team.

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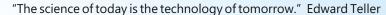
**Mr. Titus Pinto**Student, VI SEM BCA



# **MESSAGE**



Fr. Josekutty P.D, Principal



A breakthrough in technology has bought a change in the world. Technology influences people all over the world. Advances in technology have made our countries safer and our lives facile. Technology have ushered us to online banking, smart cars, smart T.V, lightning fast computers and the virtual reality. As technology evolves the society evolves.

Any sufficiently advanced technology is indistinguishable from magic. Life was burdensome before the advent of modern day technology. The access to education, medicine, industry, transportation etc. has been simplified due to the development of modern day technology. Some of the bewildering technologies have slowly taken an essential part in people's day to day lives and that being without them would be implausible to some of us. We humans have surpassed from the industrial age to an information age. Technology has profoundly changed education. Access to learning opportunities today is unprecedented in scope, thanks to technology. Technology is dynamic and it is essential for us to be rationalized. The digital revolution is just starting and modern technologies will outperform humans in many activities in the future.

The most important aspect of computer science is problem solving, an essential skill for life. The Department of Computer Science helps students study the design, development and analysis of software and hardware used to solve problems in variety of business, scientific and social contexts. Through the avant-garde programs and seminars the students seek to promulgate technical skills and are prompted to innovate with technology. I appreciate the Department of Computer Science in bringing out the seventh edition of newsletter - Interface and wish them all the best for their future endeavors.



Fr. Dr. Augustine George Vice-Principal

Information and communication technology has touched human life in ways unimaginable and has changed the way in which every human endeavour is pursued. Today the omnipresent nature of technology has optimised many routine tasks. The field of education is also no exception.

The exploratory nature of human mind is throwing challenges in new dimensions every day and the survival today depends upon being abreast with the technology. The technological advancements have brought in more boon than banes for the student community. Time and place has become irrelevant for an ardent knowledge seeker. The mastery of technology coupled with a creative mind is helping many students to become successful entrepreneurs thereby enabling the student to be the master of their own destiny.

The Department has always strived through its curriculum and various industry academia collaborated activities to bridge the gap between the academic curriculum and industry demands. The department always provides a platform for every aspiring student to enhance his skills and to showcase their talents through various platforms. The learning environment is conducive for experimenting and innovating with the knowledge assimilated through curricular and co-curricular activities during their course.

Interface the newsletter is a canvas which portrays the activities of the department for the current year. I take this opportunity to congratulate all the faculty members and students who have worked tirelessly for the successful publication of this Newsletter. I wish success to the Department of Computer Science in this creative endeavour.



Fr. Lijo P Thomas Head, Dept. of Computer Science

The digitized world has brought a spectrum of changes in our life. The Department of Computer Science with its amalgamated departments of Mathematics, Statistics, Electronics and Physics has made effort to foster the students with knowledge, skills and values required for successful professionals and aims at providing a beneficial learning environment and various opportunities to the students by providing various platforms for them to experiment and innovate. One such platform is Xactitude - the intercollegiate fest where young brains get to show case their skills in various events organized by the departments of Computer Science, Mathematics, Statistics, Electronics and Physics and compete with each other to exhibit the best version of them.

The Conference on Computational Intelligence (NCCI) provides a platform to present new advances and research outcomes in the emerging fields of Computer Science. The various fests and conference conducted by the department, the science exhibitions and the knowledge kindle group keeps the students updated about the latest developments in the emerging field of Information technology. Due care has been taken to enhance the curriculum with current industry specific requirements by means of various novel academic alliances and by offering various certificate and value added courses. The department has been frequently ranked as one of the best BCA colleges in the country by various national surveys. The students and faculty of the department are striving constantly in their incessant pursuit of aiming high which has helped us carve an ideal position for ourselves. I wish the team the very best in their challenging expedition as we strive to make every day of our life a better one.

#### FROM THE DEAN



Dr. Calistus Jude AL Dean, Sciences

The ecosystem of the Department of Computer Science provides sufficient and convincing setting for the students to learn, work together and be creative. The various scholarly activities help the students to imagine, innovate and build the future in exciting fields of Information Technology, Mathematics, Statistics, Electronics and Physics. The updates and details of events at the department are customized and made accesible the reader. The easy-to-read snippets presented in the newsletter will keep the reader abreast of the trends in Computer Science and allied subjects. As the department celebrates 20 years of its genesis, this years programmes of te department and this edition is rooted in the theme of the college "Empowerment through Lifelong Learning and Inclusiveness." Congratulations to the Editorial team, designers and contributers for this edition of the newsletter!

#### ABOUT THE DEPARTMENT



Prof. Sevuga Pandian A Co-ordinator, Computer Science (UG)

The Department of Computer Science (UG) with its proud history spanning over two decades, stands topmost in the Nation for the BCA programme it offers. Both BCA, BSc (CSMS/CSME), BSc (PMCS/PME) and BSc (MSE) programs are devised to provide an ideal amalgamation of theory with hands on experience for the students. Our students receive a broad education that includes a relevant contemporary industry related curriculum, excellent problem solving and communication skills, and the ability to work in cross-disciplinary teams enhancing their spirit of innovation and academic excellence.

The millennial generation of software developers is the future visionaries of companies and nations. To keep pace with rapid changes in the IT sector the department has an auspicious club Computer Academy with more than 1146 members attempts to confluence between the technology and academics through series of programmes like Guest lectures, Workshops, Seminars, Industrial Visit, Intra and Inter Collegiate fest, Science Exhibition and various communities.

The Department has initiated Academic Alliance with UiPath, SalesForce, Oracle Academy, Microsoft Dynamics Academic, ICT Academy, ACM-W, NPTEL, AWS

Educate, Dell EMC and VMware IT Academy to craft initiatives to address the contemporary skill gap in the novel computing technologies. It helps to ensure the industry, a strong pipeline of graduates to meet its future needs. The department also has a Knowledge Kindle Groups and Common Interest Groups to allow the students to connect communicate and collaborate. The department encourages the students for extended learning process such as self-paced learning through various MOOC and NPTEL courses of their interest.

The shared values of our department are exemplified in various extension activities like Social Outreach Programme (SOP) and Computer Literacy Programme (CLP) providing the students an opportunity to recognize their social responsibility and contribute to the development of the society. I am proud to say that our BCA programme is one of the best in the Nation due to its diligent adherence to quality in not just academics but also in creating the right impact on corporate sectors and national quality forums.

# **CONFERENCE & FACULTY DEVELOPMENT PROGRAMME**

# National Conference on Computational Intelligence ( NCCI-19)



The third National Conference on Computational Intelligence (NCCI 2019) was organized on 6th and 7th December, 2019. The conference provides a platform to discuss the state-of-the-art developments, key approaches, research line, challenges and unsolved open problems encountered in the fields of Computational Intelligence.

The chief guest, Mr. Sanal Kumar ,Chief Architect, Huawei Technolgy , interacted with the audience by giving some brainstorming questions and highlighted the relavence of computational intelligence in the current scenario. The Conference proceedings were also released by the dignitaries. Prof.SevagaPandian, Staff Coordinator, thanked the participants.

Inauguration was followed by two technical sessions. Session 1 was on Machine Learning with Bioinformatics by Dr. U. Srinivasulu Reddy, Assistant Professor, Department of Computer Applications, National Institute of Technology (NIT), Tiruchirappalli, Tamil Nadu, India and gave an insight into the basics of Machine Learning algorithms. Session 2 by Dr. L. Arockiam, Associate Professor & Dean, School of Computing Sciences, St. Joseph's College (Autonomous), Trichy, Tamil Nadu, India explained the importance of IoT as a new field and gave a basic architectural structure of IoT which consists of the edge (sensors), networking (communication) and the cloud. Track 1 Paper presentation happened on Day1 which was chaired by Dr. L. Arockiam and Dr. U. Srinivasulu Reddy. Day 2, 07-12-2019 started with technical Session 3 by Mr. Nishant Krishna, Architect, Researcher-IoT, Tech Machinery and More Pvt. Ltd, Bangalore, Karnataka, India. He briefed on Extelligence in the context of hyperconnectivity in IoT.

This was followed by Technical session 4 by Dr. Sujit Kumar Chakrabarti, Assistant Professor, Department of Computer Science, Indian Institute of Information Technology (IIIT), Bangalore, Karnataka, India. He gave an insight into Automated Evaluation of Programming Assignments- from Practice to Research and shared his experiences in using this system to evaluate assignments and examinations for programming courses taught in their University. Track 2 Paper Presentation chaired by Dr. L.Arockiam and Dr. R Kumar, Head, Department of Computer Science (PG) which

gave extensive information and insights into Computational Intelligence and AI. The papers reflected current trends in IOT, image processing, data mining and human computer interaction, to name a few.

The conference was attended by more than 200 participants and total of 47 technical papers on various topics supported by Computational Intelligence were received and out of which 19 papers were presented by the authors. All accepted and presented papers will be published in Journal of Physics:Conference Series (JPCS) (ISSN: 1742 - 6588) (SCOPUS Indexed) and International Journal of Recent Technology and Engineering (IJRTE) (ISSN: 2277 - 3878) (UGC CARE List-A) (SCOPUS Indexed).

NCCI 2019 served as a platform to discuss the advances in Computational Intelligence, Security and Intenet of things (IoT). The conference provided the participants an opportunity to expand their network and exchange knowledge and ideas among fellow researchers, academicians and technical experts from diverse areas towards the common goal of shaping the future of the society through AI.

# **Extension Lecture Program in Physics – Centre for Continuing Education, IISc, Bengaluru**



It is rightly said that imagination is more important than knowledge because it encircles the world. The interest and involvement of the participants could be seen in the potency exhibited by them during the session. It provided them with a platform to discover more about physics.

Extension lecture program in Physics was held in Kristu Jayanti College on 18th of July to 19th of July, 2019. The lecture workshop was organized by Department of Physics, Kristu Jayanti College in association with Centre for continuing education, Indian Institute of Science, Bengaluru. The Extension Lecture Programme in Physics started with an inaugural ceremony with Dr. Ashoka G Samuelson, Professor Department of Physical and Organic Chemistry, IISc , Bengaluru. The event focused on bridging the gap between theoretical, academic and applications of physics. The first session of the workshop was taken by Dr. KarunaKar Nanda. The topics covered during the session were Quantum Mechanics, Bohr Radius, Quantum size effect, De-Broglie wavelength and various applications of Nanotechnology. The session was very informative for everyone. The second session by Dr. M. Netaji on X-ray diffraction and crystallisation. Emphasis was given on Bragg's law and its applications. The other topics which were covered

diffraction and crystallisation. Emphasis was given on Bragg's law and its applications. The other topics which were covered included crystalline models, hydrogen atom model, Newton's corpuscular theory, Unit cells and applications of X-rays. The third session was held on the second day of the workshop by Dr. Atanu Bhattacharya. Dr. Bhattacharya took the session with utmost interest giving practical examples and involved the crowd in his talk. The session focused on Ultra fast Optics and Spectroscopy. The fourth and final session was taken by Dr. Satyam Suwas. He made sure that all students understood the basics properly. His session was mainly focusing on applications of X-rays. The session was interactive and students cleared their doubts regarding various topics in physics.

## **National Workshop on Analysis and Differential Equations with Applications**



A two day national workshop on Analysis and differential equations with applications was organized on 11th and 12th of July 2019 in association with Tata Institute of Fundamental Research [TIFR], Bengaluru.

Keynote Session 1 was on Limits, Continuity, Series and Sequences.Dr.Shyam Sundar Ghoshal, the resource person for the first session emphasized on Limits, Continuity, Series and Sequences. Sir explained Principle of mathematical induction and Limit theorems. He explained what a sequence is and how

it is generated. Sir also delivered about the behavior of a sequence at infinity. He also emphasized on the types of sequences: Finite and Infinite.Keynote Session 2 on Differentiation and Integration was handled by Dr. Sandeep. He explained in detail through graphical and analytical method, the purpose, importance and theory of Differentiation and Integration. He explained in detail with examples about the concepts of limits, continuity, differentiation and integration. Dr.Sandeep explained differentiable functions with many examples. Sir introduced the concept of integration graphically. Behavior of the function |x|, sinx, tanx, xsinx, x2 sinx, sin 1/x were discussed in detail. The session was concluded by stating and proving the Fundamental Theorems of Calculus. Keynote Session 3 on Applications of Ordinary Differential Equations. Professor Vasudeva Murthy started the session with origin and history of example of "Poincare's prize paper" facts. Sir introduced the n- body problems. Professor gave a clear definition for ODE, Initial Value and Boundary Value Problems and Sir mentioned Euler's method etc. to solve them. Prof. Murthy highlighted applications of ODE a few of them, say, are Ideal Projectile Motion, Height, Flight Time and Range, The Patriot Missile Failure. Finally Sir concluded the session with most interesting applications of ODE in dynamical system, chaos theory and Lorenz model.

Keynote Session 4 on Applications of Partial Differential Equations was handled by Prof Gowda. He introduced the concept by a video showing water -oil experiment. Sir explained how PDE can be used to measure the brightness of the photograph and then construct the 3D image. Sir concluded by siting many examples of mathematical models. The Workshop was beneficial to all the students and the teachers who attended. Students were equipped with deep understanding of the topics covered. All the participants from in and around colleges were acknowledged for their active participation in the workshop.

# **FACULTY ARTICLES**

## mabl – Machine learning to Functional testing



**Prof.Ramanathan G**Department of
Computer Science(UG)

mabl is using machine learning to help engineering teams with regression testing. mabl combines the best of end-to-end testing, test case management, and machine learning in one service. As mabl is testing applications, it also collects lots of data which isn't typically recorded by manual testers or other tools - test run time, page load times, screenshots showing visual changes in the app, etc. This data in turn trains several different types of machine learning models which are used to notify teams when something changes - either for the good or bad. Either something was working and now its not, or something was broken and now its fixed. mabl is using machine learning to help engineering teams with regression testing. mabl

mabl is using machine learning to help engineering teams with regression testing. mabl combines the best of end-to-end testing, test case management, and machine learning in one service. As mabl is testing applications, it also collects lots of data which isn't typically recorded by manual testers or other tools - test run time, page load times, screenshots showing visual changes in the app, etc.

This data in turn trains several different types of machine learning models which are used to notify teams when something changes - either for the good or bad. Either something was working and now its not, or something was broken and now its fixed. Features:

Proprietary machine learning models automatically identify and surface application issues

Tests are automatically repaired when UI changes

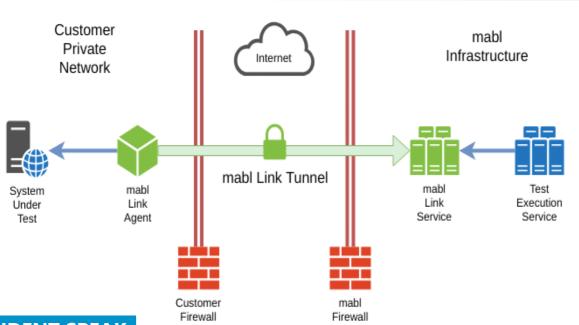
Automated regression insights on every build

mabl QA process

mabl uses Google Kubernetes Engine (GKE) to run tests, spinning up a new GKE container instance in seconds. The containers execute comprehensive tests in minutes, with mabl capturing screenshots, DOM snapshots, logs, network data, and timing information along the way.

#### mabl Link Overview

mabl Link consists of two main components – Link Agent and Link Service – that are responsible for establishing a secure outgoing (egress) connection from the network to the mabl cloud. There is typically no need to change the firewall rules since many firewalls are already configured to allow for most outgoing connections. Once the tunnel has been established, mabl can securely access and run tests against hosts on the private network.



### **STUDENT SPEAK**



Mr. KEVIN SIMON (VI SEM BCA C)

# The Artificial Sun Technology (The HL-2M Tokamak Device)

Now a days the world resources is getting depleted, so many scientists and researchers are trying various solutions to solve it, but now the first step is taken by China to solve it and one way to this solution is the artificial sun technology. The HL-2M Tokamak device is designed to replicate the nuclear fusion process that occurs naturally in the sun and stars to provide almost infinite clean energy through controlled nuclear fusion.

The device can actually reach temperatures 13 times hotter than our star. The HL-2M will be able to reach 200 million degrees Celsius (360 million degrees Fahrenheit) meanwhile, the Sun only gets as hot as 15 million degrees Celsius (27 million degrees Fahrenheit) in its core. The device uses superconducting niobium, titanium, poloidal magnets making the non-inductive current drives pulses of up to 102 seconds with 0.5 MA plasma current.

The schemes which controls the plasma and its instabilities are done through running real-time diagnostics. The device HL-2M uses parameters such as Ion Cyclotron Resonance Heating (ICHR), Lower Hybrid Current Drives (LHCD), Electron Cyclotron Resonance Heating (ECRH), Neutral Beam Injections (NBI) using all these parameters the device generates a lot of temperature which is more than the sun.

Due to this technology China by 2050 will have it own sun which will generate light resources and the city will have no street lights and power failure. Many technologies come and many people get ignited, but remember for all the technology which has come the only creator is one's self-mind.

# **Robot Bosses**



Ms. KarunyaChalla (VI BSc CSMS)

Being in the 21st century, we see that machines have become more efficient than humans. Considering the rise in population, to handle the employment sector it's a mammoth task. Having machines along with the humans will make this task easier. These days we hear the 2 terms Machine Learning and Artificial Intelligence on a daily basis. As soon as you check the technology news its all about the latest inventions based on the ML and AI concepts. These concepts were there previously too, but now the advancement in them is capable of replacing the humans.

To start with, Machine learning is the scientific study of algorithms and statistical models that computer systems use to perform a specific task without using explicit instructions, relying on patterns and inference instead. It is seen as a subset of artificial intelligence. Now,comes the million dollar question,have you ever imagined that one day you would have a machine as your boss? Well, artificial intelligence has made this a reality in 2019.

Currently, robots are used in the manufacturing and automobile industry to automate processes. Machine learning will make it possible for robots to perform business management tasks. How would you feel when a robot fires you? This is the reality from now on. Machine learning algorithms are powerful in pattern recognition and predictive analytics. Robots will be performing repetitive tasks currently done by lower level managers. They will become the decision makers. The need to lower the impact of emotions in making investment decisions will make the use of robots even more popular. The idea that robots and algorithms will take jobs is a common concern about the future. As Bill Gates argued earlier this year: "20 years from now, labour demand for lots of skill sets will be substantially lower." Automation has already removed the need for humans in many workplaces, from building cars in factories to taking bookings in call centres. Scientists at Birmingham University in the UK are testing whether an autonomous security guard can do a real job in a working office so that is the real magic of ML and AI working hand in hand to make all jobs more efficient in the country.

#### **ALUMINI CORNER**



Mr. Varun Govind BCA (2016-19)



Ms. Supriya Nickam BSc CSME (2016-19)

Well it's a common saying that time flies. It's been 7 months since I got graduated and now I am so called alumni but it still feels like yesterday. The major values and ethics of life that I have inculcated started from Kristu Jayanti College. The Department of Computer Science has given me a lot of opportunities to showcase my skills to the fullest. I still recall the wondrous moments when we were participants for fests conducted by various colleges and we bagged overalls from almost all the places. From the first day of the college which is Shubhaarambh (inauguration) to the last day which is Samavarthana (graduation), every event which was conducted had a motive of learning something new. It's been 6 months since I have started working and I have noticed that leadership and team work is very important to perform really well in the corporate world and Kristu Jayanti College has already made me ready to face these challenges. The management and the teachers makes sure that we meet the industry standards. I am proud to tell that I am a JAYANTIAN and I cherish each and every moment that I have spent in the college.

When I first stepped into Kristu Jayanti College, naive and fresh out of the conventional schooling environment, little did I know, that I was in for a whirlwind of experiences, emotions, and consequently, lessons. I entered as a girl who just wanted to obtain her degree, and left. Along the way, I realized that it was merely a part of my journey. KJC was much more than just that. I did learn a great deal academically, yes, but the teachers there weren't only equipped to teach the material inside the four walls of a classroom, but life lessons on the outside as well. I will forever be grateful for how approachable they've all been, without a moment's hesitation, no matter what the situation was. Not to mention, the plethora of opportunities I had, be it academic, extra-curricular, (inter and intra) departmental, and (inter or intra) collegiate, were immense. I soon learned that the teachers also had a knack of identifying strengths in their students, and encouraging them to put it to good use. At the end of the course, I walked out as a person who was ready to seek and make the most of opportunities.

## Workshop

## **Machine Learning Workshop Series**



**Cloud Literacy Day** 



The workshop series on Machine learning is conducted by Ms. Aditi Tiwari, Data Scientist and ACM Professional Member, Wizely. The main objective of this session is to provide the basics of Statistics and Mathematics which can lead to a career in Machine Learning. This workshop series will be conducted for 14 weeks on Saturdays from 11am to 1 pm which leads to a certification and also expose the students to a career in Data Science. During the course, students will be interacting with some leading Data Scientists for guidance and support. This workshop started on 17th August, 2019 and will be continuing till March 2020.

A workshop was organized on cloud Literacy day on 11th October 2019. The resource person was Mr. Rohit Singh, Cloud Project Manager in DXC Technology Bengaluru. Mr. Rohit started the session by explaining AWS [Amazon Web Services], explaining about how AWS Supports people and programs designed to proactively help you optimize performance, lower costs, and innovate faster. Dxc Technology, Customer centricity, Limitations and performance of traditional set of servers, How does a company offers solution on software service and Inbuilt data models in IBM cloud were also discussed. Discussions on qualities like performance, cost, optimization operations, excellence, reliability and security of cloud services was part of the workshop. Throughout the session the resource person encouraged queries and answered them with great clarity. The workshop was really effective.

#### **Interactive Web Design**



ACM-W Student chapter, Department of Computer Science (UG), organized a workshop on HTML and CSS, "PARIKALPANA-2" on 3rd July 2019 exclusively for ACM members. The workshop was conducted by the student coordinators of ACM Women's student Chapter and an HTML expert, Mr.Ibrahim. In this workshop students were imparted with the knowledge of working with HTML, CSS and Hosting web page. Trainers also elaborated on the basic features of CSS User Interface, CSS Background, fonts and Border Levels that gives a dynamic aspect to the Web Pages. At the end of the session, Quiz was also conducted to test the understanding of students.

## Research Colloquium - Data Analytics in Aeronautical R & D Applications



A research colloquium was orgainsed for the faculty members of the department of Computer Science. The resource person was Mr. Sufal Chandra Swar, Scientist 'E', Aeronautical Development Establishment (ADE), Defense Research & Development Organization, Bengaluru

The speaker began the session with the introduction of unmanned Aerial vehicle and its importance by comparing its components and risks associated with manned aircraft system. Various phases involved in developing and launching aerial vehicle were well explained by the speaker. Few statistical concepts and computational techniques were also discussed in the session. He also threw some light on autonomous mission control and the focus of current research areas such as UAV control, distributed control, group tactical goals, group coordination in UAV autonomy control vehicle. Then, the speaker given research direction to the audience by suggesting them to generate algorithms for onboard decision making

and onboard situational awareness which will helps the aerial vehicle to move further if there is any obstacles in its way. More specifically, the areas such as cooperative obstacle avoidance, cooperative landing maneuvers and cooperative source localization were recommended by the speaker for collaborative research with defense organization. He also suggested few websites related to research proposal submission. He concluded the presentation by addressing the problems associated with Artificial Potential fields. Finally the session ended with questions and answers. Patiently, the speaker clarified the question raised by the audience. The session, in a whole, was well informative and interactive.

## **Traning on Research Apititude**



Research aptitude training was organized for selected students of IV BCA and IV B.Sc on 10th December, 2019. The trainers were Dr. Jasmine Beulah and Dr. Vinothina V , faculty members of Department of Computer Science. The objectives of the programme were to foster research interest in undergraduate students , to create a network of students to promote and facilitate interdisciplinary research, to motivate the students to take part in various conferences, symposium, workshops and to enhance their innovative ideas, relevant to the need of the society to take active participation in smart hackathons. The session with the introduction on Research and the necessity to be innovative in doing research. She focused on the specific procedures or techniques used to identify, select, process, and analyze information about a topic. She explained the specific qualities of the researcher and the research paper. Dr. Vinothina continued explaining the different areas of research interest and explained the various stages of research. She also focused on the format of the research paper. Both the resource persons emphasized on the need of students to write research papers.

### **GUEST LECTURES**



#### **Introduction to Blockchain**

A guest lecture was organized on Introduction to Blockchain on 21st August, 2019 for IIIrd Semester PMCS, PME, and BCA students. The Resource person Mr.Mohamed Ijaz Co-founder, Comorin Consulting Services, Bengaluru discussed on "BLOCKCHAIN TECHNOLOGIES", He gave an insight into the various new trends in blockchain, and referred to the transparent, trust less, publicly accessible ledger that allows us to securely transfer the ownership of units of value using public key encryption and working methods. the speaker specified about the research opportunities based on his research on Blockchain as it is a emerging field in computing.

### **Introduction to Artificial Intelligence**



The Department of Computer Science organised a guest lecture on 'Introduction to Artificial Intelligence' on 24th August, 2019 from 11.00 am to 1.00 pm in Main Auditorium for second year Computer Science Students. The resource person for the session was Dr. Debabrata Samanta, Assistant Professor of Christ (Deemed to be University). He had a well prepared presentation, to make it more interesting. Speaker delivered wide set of information about the history of Artificial Intelligence and how the AI applications are utilizing by people and what are the misuses. He also specified about the research opportunities based on his research on Artificial Intelligence. The speaker of the session also gave an opportunity to two students to be a part of his research. Speaker made us comprehend the disadvantages of using the applications like Google, WhatsApp, Instagram app etc.

### **Create your own future**



On 31st August, 2019, Department of computer science [UG] organized a seminar to second year students by Anil Abraham Philip, Head of Support Services OSB India, Pvt Ltd. based on the topic: "Create your own future". His session was very understandable and motivating in a way which made everyone to set the goal. He had a well prepared presentation talk to the students in the auditorium. The topic was very interesting but he managed to cover the basic information. The topics discussed included challenges, comfort, imagination, discipline and consistency. He also shared his rich experience of his own plans of preparing his day-to-day activities with an example. He had pointed out the scopes of opportunities in various career path. He made us understand to get self-motivated and choose the right destination in becoming the successful leader. Time and change of management was also key future of the talk and enriched the audience to be successful.

# **Trailhead Workshop by Kristu Jayanti Community**



A workshop on Trailhead was organized by the Kristu Jayanti Community for the students from 29th June 2019 to 2nd July 2019. The following final year students Ms. Karunya,Mr. Kevin Simon,Mr. Ashish and Mr. Sashikant were the trainers.The hands on session commenced by explaining the agenda and the target to be completed. The trailblazers acquainted the participants of the workshop through the introductory process of explain the rankings, badges and points system of trailhead along with the advantages it gives to the user.The workshop consisted of helping the participants to create their Trailhead Playground and create their first app, 'Build an app to track your Trailblazer Journey' where they created their first project 'Discovery'.The workshop had around 50 participants who were successful in the completing the workshop that resulted in them acquiring their first badge ('Hiker' Badge) and 300 points. The session concluded with the trailblazers encouraging the participants to join the Student-India-Journey of trailhead, its advantages and possible opportunities it can provide for trailhead members.

# **National Statistics Day Celebration**



On the occasion of the 126th birthday of Prof. P.C Mahalanobis, on 29th June, National Statistics Day was celebrated on Friday,28th June 2019 in Kristu Jayanti. Prof. U.H Acharya, Professor at ISI Bengaluru, in the SQC and OR unit was the chief guest. Prof. Acharya gave a talk on the scope of higher studies in Statistics and told the students about the PG courses and other programmes offered by ISI. The session elaborated on industry requirements met by statisticians. He explained about the various statistical tools used in the industry. real time application of quality control, sampling, sampling designs, regression, forecasting, reliability theory and various other aspects were cited. During the interaction session a few questions pertaining to the entrance exam details, scope of Diploma courses in ISI were discussed. The session was very informative and motivational for all the students. Reliability theory and various other aspects were cited. During the interaction session a few questions pertaining to the entrance exam details, scope of Diploma courses in ISI were discussed. The session was very informative and motivational for all the students.

### **Computer Networking**



On 20th July 2019, the department organized a seminar by Mr.Dattareyalu TP, SR gTAC Expert, NOKIA India Pvt Ltd, based on networking.

The topics of the lecture included networking, types of networking, VLAN, Routing, switches IP address configuration and much more. Networking field is having a plethora of oppurtunities as the world of

technology is enhancing human lives using IoT. The resource person highlighted the scopes of networking field as a career path. Mr.Dattareyalu also explained in detail about the good courses available on various networking technologies and platforms which will enhance the career opportunities for a student in networking.

# **Computer Science Student Research Forum**



The Department of Computer Science [UG] inaugurated Computer Science Student Research Forum followed by lecture on 'Significance of Research' on September 13, 2019 in Mini Auditorium II. The session was inaugurated by Mr. Praveen Louis, COO & Founder at WarpDrive Tech Works, Bengaluru. The Speaker talked about the value of the term trends with respect to research. He also threw some light on the importance of augmented and predictive analysis in research. He said, "Research fosters critical thinking and analytical skills, defines academic, career and personal interests, expand

knowledge and understanding of a chosen field outside of the classroom." Through this session, speaker conveyed his apprehension on knowledge level of students by sharing his experience in interviewing the students for job. Finally, he encouraged the students to think practically where they can apply the learning. The session, in a whole, was well informative and interactive.

#### **Interaction with Alumni**



Two alumnus Mr. Kurian George, Social Media Specialist, Classical Palace, Qatar and Mr. Jobith, CEO, Three38Inc. , Bengaluru interacted with the students on 26th June,2019.Resource persons gave very inspiring and motivating session to the first year students about their experience in kristu Jayanti College and how the institution has molded them into better individuals. They shed light on their experience in organizing the fests Synchronize and Xactitude and encouraged the first year students to grab and participate in all the offered opportunities. They then made the session interesting by sharing their experience behind the inception and development of their software company Three38Inc.

Speakers encouraged the students to take every opportunity that they get and utilize it and extract knowledge. First year students were highly moved by the way the alumni's shared their life experience. Students were enthusiastic in asking relevant queries about the working atmosphere, kind of job and the selection procedure in Three38Inc. Then, Speakers discussed about the basic important needs that every individual should have in their lives. They are- Faith, Hope and Love, which was inspiring and thoughtful. Speaker also spoke about not suppressing others and not judging others. The session was indeed a fruitful one.

#### **EXPERIENTIAL LEARNING ACTIVITIES**



#### **Visit to Indian Statistical Institute**

43 students of V Semester B.Sc (CSMS) visited the Indian Statistical Institute, Bengaluru on 26th August 2019. It is also known as ISI Bengaluru and was established in the year 1960. Our team of students was addressed by the associate dean. The students were briefed about ISI, about the Campus on Courses offered. Later the students went for a campus tour and visit to library. At 3.30 pm, the group attended a research colloquium on A Brief History of Sequence Alignment by Mr. Soumyashant Nayak which explained on RNA Sequencing, Bioinformatics tools for handling RNA Sequencing data. The visit provided a motivational factor to pursue higher studies in Statistics. Also students gained awareness about RNA Sequencing and how it is used in the field of Statistics.

#### **Visit to IBM**





A visit to IBM was organized for fifth semester students on 5th July,2019.

There were three smart talk sessions on Talent Acquisition, Skill Ecosystem & Entrepreneurship, Market readiness and AI (Watson) on Cloud and Quantum Computing .During this session, students were briefed about IBM, Problem-solution methods, Market readiness, IT Trends and in depth knowledge of academic subjects. The second session was on Quantum Computing, Entrepreneurship and how IBM & Government of India can support Innovations. The students were taken to the only one of its kind, IBM's Green Data Center where they showed their reputed mainframes, fiber optic connections and how the entire data center runs on clean solar energy.

Members of the ACM-W chapter and few girls students of BCA visited the IBM Office at Embassy Golf Links Road on November 11,2019. The IBM resource personnel briefed about the working environment of IBM .He gave complete insight about Interview Preparation which included the preparation of CV, behaviour of students in front of Interview panel etc. which helped the students a lot. The session covered the Soft skills and Entrepreneurship skills, which is required for their future career. Students were taken to the green data center , workplace and their highly equipped discussion panel and technical rooms. Students were exposed to real working environment and shown how things were done in IBM. The visit helped to Identify career opportunities and target specific jobs that match current skills and career goals. This visit gave the students a new exposure to the outside IT world.

## Visit to Visvesvaraya Industrial & Technological Museum



Second semester CSME students visited the Visvesvaraya industrial & technological museum on 22nd November 2019 which opened to public in the year 1965, houses a treasure trove of machines and artifacts related to science and technology. The museum has a number of exhibition halls, two in each floor. "Engine Hall" was filled with engines of cars, machines, jet craft etc. which thrilled the students. The students tried their hands on fundamentals of machines in "How Things Work" gallery. This gallery had many basic concepts demonstrated in a much simpler way. The visit to the how things work gallery inspired the students to think about the ways in which fundamental and pure sciences can be used in a way beneficial to the society. "Fun Science" gallery greeted the students with science of sound, optics etc. The students tried their hands on They spent ample amount of time in "Electro Technic" and "BEL Hall of Electronics" Gallery since they are passionate about electrical exhibits. "The Space" gallery provided sufficient information on Indian Space Program.

The museum's interactive exhibits made it a great place for the students to develop a love for science. The students enjoyed the space science section the most where they could actually see the rocket models, satellite models and much more. The aim of the visit is to inspire students and kindle in their minds a sense of innovation by seeing the exhibits in the museum in different diverse fields of science. The students also got to know more into Sir M Visvesvaraya who pioneered many great projects in pre and independent India. This batch of students who are studying a combination of Computer Science, Mathematics and Electronics and hence enjoyed the practical "hands on" displays to explain mathematical and electrical principles.

#### Visit to Jawaharlal Nehru Planetarium



The students of IV SEM BCA visited the Jawaharlal Nehru Planetarium on 12th September 2019. The visit was an experiential learning activity. They had a 40 minutes show on space exploration and solar system. There are many different sizes of planetariums. They can be as large as the Hayden Planetarium's 21-meter dome. It seats 423 people. The visit provided an insight into astronomy ,night sky and celestial navigation. The visit generated curiosity and students were excited to explore the computational tools used in astronomy.

### **Visit to National Sample Survey Office**



A visit was was organized on Statistics day to National Sample Survey Office (NSSO) located in Koramangala, Bengaluru. The NSSO organized this session on the occasion of "Statistics day" on 29th June 2019. The sessions organised by the office highlighted the process of data capturing and the various analysis done by them. As part of the session oraganised at the NSSO, the Sustainable Development Goals were explained and activities like Quiz and crossword were also part of the event. The Jayantians enthusiastically participated in the events and won prizes. The visit to NSSO was interesting and enjoyable.

#### Visit to HAL Museum





An Industrial visit was arranged by the Department of Computer Science for the IV Semester BCA Section-C and D students on 9th December,2019 to Hindustan Aeronautics Limited Museum. IV BCA Section A and B students visited the museum on 10th December, 2019.It was an enriching experience for the students to know the facts about the aerospace and aviation Industry of India.

Two major halls displayed the photographs that depicted the growth of aviation in each decade from 1940 till date and a Hall of Fame that took the visitors on an exciting journey through the Heritage of Aerospace & Aviation Industry in India. The second Hall highlighted the various functions of an Aero Engine by displaying motorized cross sections of various models of Aero Engines.

Real Engines such as Garret (for Dornier Aircraft), Adour (for Jaguar Aircraft) and Orpheus (for Kiran Aircraft) can be seen here along with Ejection Seat with Parachute; and Pushpak & Basant Aircraft. Outdoor display of Aircraft such as MARUT, MIG-21, HT-2, KIRAN, CANBERRA, AJEET, LAKSHYA (Pilotless Target Aircraft) & many more, has excited our students. For the academically inclined, a Library on Aerospace provides opportunity to trace the exciting development of the industry since the 1940s. While the Museums' prized possessions include various types of Aircraft models on static display, the availability of Audio-Video facility enhances the experience immeasurably.

#### **SOCIAL OUTREACH PROGRAMME**

### **Social Outreach Programme - III BCA A**



Visit to Alamba Charitable Trust, Byrathi, Bengaluru.

As part of social outreach programme III BCA students visited Alamba Charitable Trust on 16th August 2018 .The trust was established in the year 2004 and Kristu Jayanti College has been working with them for past seven years. Alamba Trust took up a challenging venture to give orientation and relief for the

abandoned youth who are physically challenged, speech and hearing impaired.

The students upon reaching there were felicitated by a volunteer of the trust. They engaged the inhabitants of the charitable home in various activities and events, including dancing and singing. It had been an overwhelming experience for the students to see the participants getting involved in the activities. They were further divided into groups to enable interaction with the people there on a personal level. The visit enabled the students to know that despite all the challenges thrown by life they should never give up and move forward with increased vigor and a positive attitude. As a token of love and care, the students handed over various gifts bought for the inmates to the center head. The outreach programme made the student realise the immense blessing they had received in their lives and to be thankful for that.

### Social Outreach Programme - III BCA B



Visit To Home Of Faith Charitable Trust, Kothanur, Bengaluru Third semester BCA section - B students visited the Home of faith charitable trust, Kothanur, Bengaluru on 19th August 2019 as part of the Social outreach programme. The place had children of all age groups. We started off by explaining to them

our purpose of visit. The children there were given a chance to showcase their talents. Many interactive short programmes and fun games were arranged as part of the visit and the inmates actively participated in those events. The session was wholly interactive and fun. There was a music session which had three programmes in it. One of the students sung a song. Another one sung along with guitar and the last one was beat boxing. There was a dance performance by the students. The children were taught the basics of beat boxing and taught dance movements for a song.

The children were made to play different games between each entertainment programme. They were made to blow up balloons and burst them. The children loved the guessing game the most. The visit came to an end with a group photo with all the children there.

# Social Outreach Programme – III BCA C



Visit to Holy Family Home for the Aged, Bengaluru

The Holy Family Home houses people who are abandoned by families, those with irreconcilable and intractable family problems, those brought in by families for professional care and

Presently, 92 elderly women who were taken care by St. Anne's nuns. Third semester BCA Section C students visited the place on August 19th 2019 and provided them the basic amenities like groceries, food and healthcare.

The inmates of the home were very happy to see the students and was overwhelmed by their gesture of finding time to visit the lonely and abandoned people. St. Anne's sister were very happy for the institution and the students who came to interact and entertain the inmates of the home. Sister also conveyed their appreciation to the institute for taking such initiatives. The students realised their blessings and had a feel that happiness does not depend upon material fortunes but it is an inner feeling. The students thanked the management for making outreach programme a part of their curriculum.

### Social Outreach Programme - III BCA D



#### Visit to Holy Family of Faith, Bengaluru

Students of third semester BCA - D visited the holy family of faith on 23rd August, 2019. It was an opportunity for the students to share the joy and peace with the old people. The students were able to learn more about true life, sharing and loneliness and the feeling of helplessness. The students interacted with the people and shared their love and thoughts. They seemed to be very happy when people talked to them and showed care and affection towards them. The programmed began with a welcome speech followed by a group song to cheer them. They were all motivated and happy to see us performing. A small balloon activity was conducted for them. This rejuvenated their drooping spirit and filled the old hearts with joy and content. The girls conducted a dance performance for them. Dumb charades was also conducted for them. Sorrow and pity were filled in our minds, seeing their disabilities and made the students feel ever so grateful about the lives they have. The experience for the students was humble, as they saw people who have nothing, still be able to smile.

# Social Outreach Programme – III B.Sc CSME & CSMS



#### Visit to Trithva Ashram (AkashaParavagal), Bengaluru

As part of the social outreach programme-III B.Sc CSME students visited Thrithwa Ashram which is a home for the destitute and intellectually challenged women on 16th August 2019 and CSMS students visited the Thrithwa Ashram on 28th August 2019. This institution has been carrying out this splendid responsibility of making the inmates feel like home for several years. The students engagedin various activities with the inmates . The experience for the student was to count the blessings and to channel the gifts they have received to fulfilling activities.

The students interacted with the inmates and presented a cultural program for them. The inmates were very happy by the visit of the students and the students could experience in reality the hardships faced by abandoned and orphaned people.

### **INTRA COLLEGIATE FEST - SYNCHRONISE**



Synchronise is an intra-collegiate technical fest organized by the department exclusively for the 1st and 2nd year students of the department. Final year students organize the fest with an enthusiastic and innovative spirit which also provides them with an opportunity to develop leadership qualities, team work and creativity in the challenging areas of Computer Science and its

allied fields. The theme of the fest was "BLOCKCHAIN Technologies" and hence the students were grouped accordingly into ten teams named after the digital currency using block chain like Tron, Ethos, Stellar, Neo, Dash, Waves, Ripple, Tezos, Monero and Aurora. The fest offered a variety of events in which the participants could exhibit their skills and be inspired. The fest was well organized under the able guidance of Faculty Coordinators Dr. Ranjitha M and Dr. A. Cecil Donald with the leadership of student coordinators Mr. Alex Mathew (V B.Sc. CSME), Ms. SimranVerma (V BCA A). The preliminary rounds for all the events and finals of few events were held from 5th August 2019 to 19th August 2019 from 3:40 PM to 5.00 PM in various venues. The finals of IT Quiz, IT Manager, Grapho-Tech, Idea-thon Best Tech team and Gaming were conducted on 20th August 2019. The events were well planned, organized and executed by the respective staff and student coordinators. The inaugural function took place at 9:30 am on 20th August 2019, in the Main Auditorium. The Chief Guest for the inaugural

ceremony was Mr. Ram DayalGoyal, Founder & CEO, RNS Labs, Bengaluru. Mr. Goyal was highly impressed by the various programmes organized by the department which equip the students with Industry-oriented skills, thus making them more competent and employable. His message to the students was to work hard towards their goals and to never stop learning. The keynote presentation on Introduction to AI was also very inspiring. Rev. Dr. Augustine George also addressed the gathering with his thought-provoking speech. Students of the department showcased their talent in technology by displaying their innovative project on IOT in the campus quadrangle. The inaugural session was followed by the finals of various events which were held in the Main Auditorium, Mini Auditorium I and Mini Auditorium 2. The Second day started with a session on "BLOCK CHAIN Technologies" by Mr. Mohamed Ijaz Co-founder, Comorin Consulting Services, Bengaluru. He gave an insight into the various new trends in Blockchain and its technological challenges which was followed by the various technical events. Students participated in all the events with a competitive spirit. Separate Valedictory sessions were held on both days to felicitate the winners and overall champions of the fest which was graced by Fr. Emmanuel P.J., Director, College of Law on Day 1 and Rev. Dr. Augustine George, Vice Principal on Day 2.

The students of the department were fully involved with Synchronize 2K19 which provided a learning experience for the young minds. Among the first year students, the star of Synchronize 2K19 was won by VashithaRaju of Stellar. The group Stellar were the runners and the group Tron were the overall winners. Among the second year students, the star of Synchronize 2K19 was won by Shobit Kumar Gangwar and Subham Kumar Sarraf of III BCA B. The group AURORA were the runners and the group RIPPLE were the overall winners.

#### **GALAXIA SCIENCE EXHIBITION**



The Computer Science Department organized a two days Science exhibition - Galaxia on 30th January The exhibits were from the field of Computer Science, Electronics, Statistics, Mathematics, Physics and interactive projects. Our students exhibited their talents in this exhibition. This exhibition provided a platform for showcasing the innovative skills of the students. A total of 156projects were showcased. Air Screen, Facial Recognition Based Attendance, IOT Based Smart Mirror, Scissor Lift, Hydraulic Maze Aram & Bridge, Sierpinski Triangle, Railway Track Pedestrian Crossing project weresome of the projects which gathered much attention. The projects were categorized and judged in five different subjects. The winners of GALAXIA were awarded by cash prize at the valedictory function of Xactitude.783 people visited Galaxia- 2K19, which included students and teachers from other departments of our college, school children of neighborhood schools. Students and teachers from New Baldwin School, St. Michel School, & Govt. Higher Primary School, Kothanur visited the exhibition and were benefitted.

## **XACTITUDE Intercollegiate Fest**



Intercollegiate Fest -Xactitude :Department of Computer Science [UG], organized "XACTITUDE" an inter-collegiate IT fest on 31st January 2019, for students in order to have a platform to showcase their potentials and cultivate leadership qualities and team work. It is named for 'ExactAttiduitude' - the quality of

precision which is the driving force behind modern technology and continues to spur mankind towards greater heights. Xactitude has been instilling a passion for perfection among its participants ever since its inception in 2009.

Students have developed XApp software for paper free, in order to conduct aptitude rounds for various events. The various events of the fest were Excalibur (IT Manager), Mind Stone (IT Quiz), Bug Stone (Coding and Debugging), Vision Stone (Graphotech), Port Stone (Web Designing), Strike Force (Gaming), Plexplanation (Lecture Contest), Division Stone (Math Event), Analytica Stone (Statistics Event), Thor-Stone (Electronics Event), Bt-Squad (Best Tech Team), Acm-W-Wwc, Physistark (Physics Event), Project-X (Project Exhibit Contest)

The inaugural function took place at 9.15 am on 31st January 2019, in Mini Auditorium III. Mr. Ezaz Mohammed Hussain Sheikh, Vice President, Accenture, Bengaluru inaugurated the fest and spoke on the current trends in IT Industry and the need to have a positive attitude along with aptitude and academic

strength. The Department magazine, 'Interface - 2019' was released by chief guest during the inaugural ceremony.Rev. Fr. Jose Kutty P.D, Principal, KristuJayanti College cherished the determination of the Department and encouraged the students to explore new horizons. He also described the significance of inventive thoughts many of which had led to the latest trends in the technology. Mr. Suresh K, Staff Coordinator, Computer academy, presented an overview of XACTITUDE 2K19. The valedictory function took place at 3.30 P.M in the Mini Auditorium II. Rev. Fr. Augustine George, Vice Principal, KristuJayanti College addressed the gathering and congratulated all the staff and students behind the success of XACTITUDE 2019. 104 students from 10 different colleges participated in the 14 different events conducted in the fest and the Winner's trophy was bagged by Christ - Deemed to be University.



### Students' Achievements [2018-2019]

Infovision – 2K19, Maharani Lakshmi Ammanni College for Women(Autonomous) Bangalore on 25/1/2019 – Overall Winner.

Oculus Nucleus, Jain University (Deemed to be University), Bangalore on 6/02/2019 - Overall Winner Carnivore 2019, St. Joseph Evening College, Department of Computer Application, Bangalore on 23/2/2019 - Overall Winner IT FIESTA, Dept. of Computer Applications, Acharya Institute of Graduate studies on 11/4/2019 - Overall Winner Students bagged 38 prizes in different intercollegiate competitions apart from being overall winners

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# **PHOTO GALLERY**





















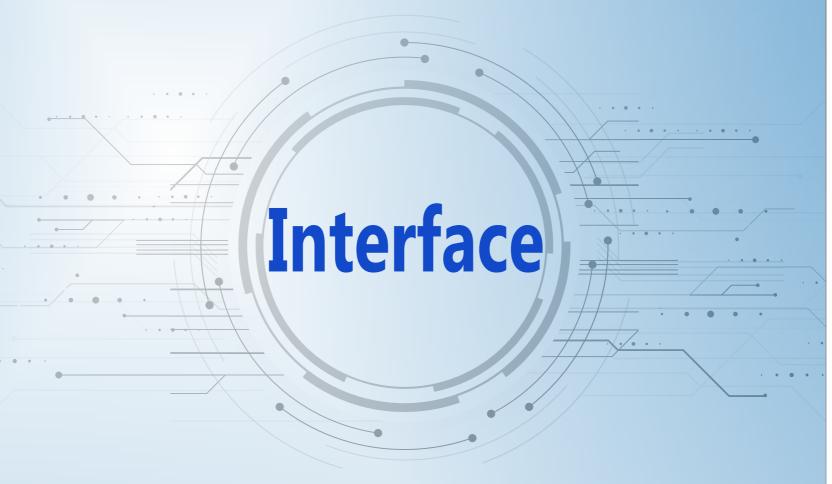




**Department of Computer Science** 

Kristu Jayanti College, Autonomous

# Department of Computer Science



# Kristu Jayanti College, Autonomous

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