



Kristu Jayanti College

A U T O N O M O U S

Bengaluru

Reaccredited A++ Grade by NAAC | Affiliated to Bengaluru North University

DEPARTMENT OF COMPUTER SCIENCE (UG)

INTERFACE

ISSUE 10 | VOLUME 1 | FEBRUARY 2023



FROM THE EDITORIAL TEAM

Dear Readers,

Welcome to 2023 issue of Interface, the Computer Science (UG) Department's Newsletter.

This issue covers all the activities happened in the department in the year 2022. The department witnessed a plethora of activities ranging from organizing 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 programs organized by the department. Due care is made to highlight the essence of each program. 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 to bringing out this issue. We hope that you will enjoy reading this issue.

Editorial Team.

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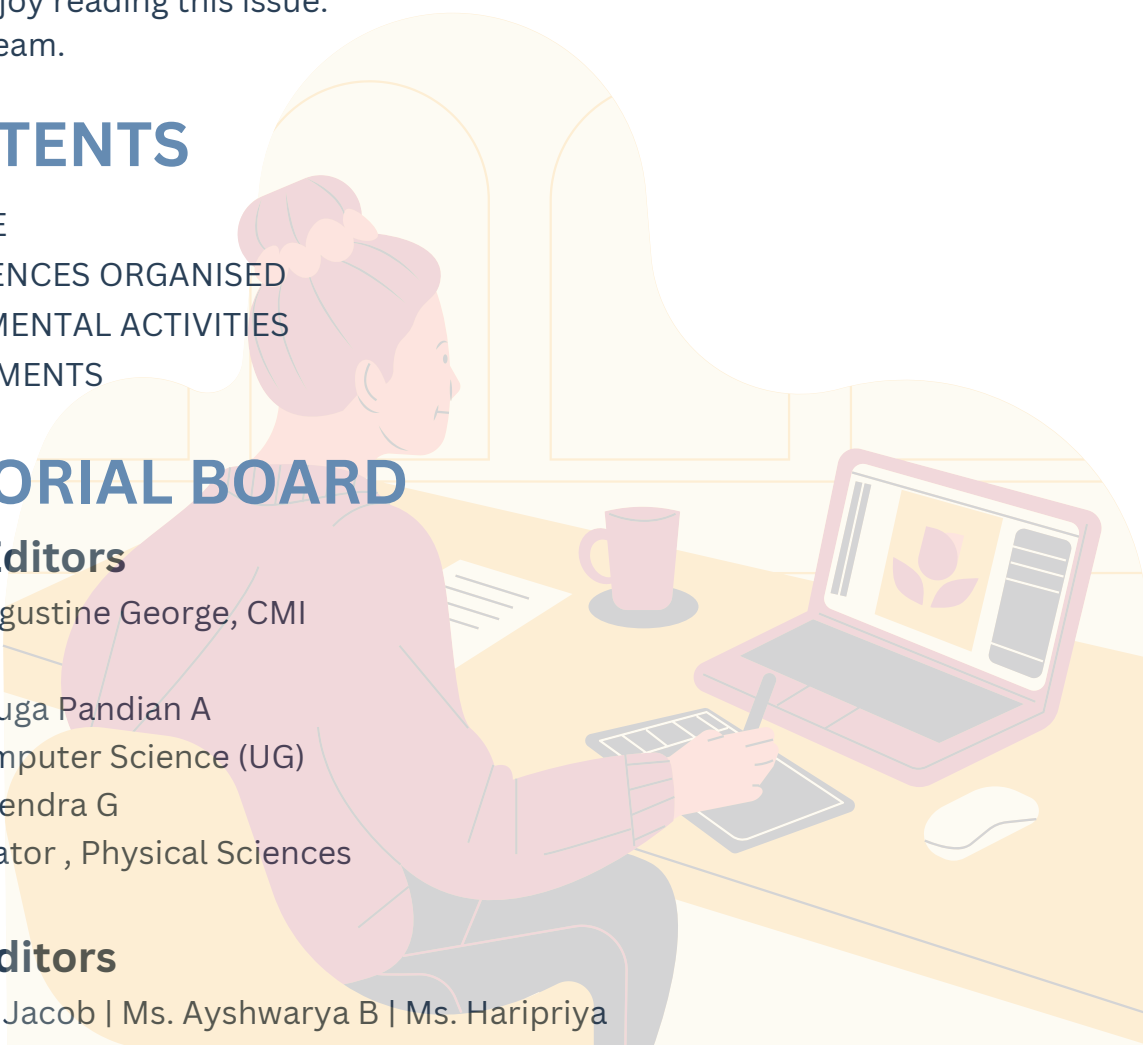
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MESSAGE



Fr. Dr. Augustine George
Principal

Technology has significantly impacted human lives in many ways. It has made our lives easier, faster, and more convenient by automating many tasks and providing instant access to information. It has revolutionized communication and transportation, allowing people to connect and travel in new and innovative ways. Additionally, technology has transformed the way we work, learn, and entertain ourselves. On the other hand, the increased dependence on technology has also raised concerns about privacy, security, and potential job loss due to automation. In recent years, the development of artificial intelligence, cloud computing, and the Internet of Things has opened up new possibilities for the use of technology in fields such as healthcare, education, and entertainment. The ongoing advancements in computer technology are expected to continue to have a significant impact on society in the future.

Computer Science department has always spearheaded the technological initiatives of the college. The students and faculty members has always been quick in adopting new technological trends. The role of the department is commendable in establishing a robust IT infrastructure conducive for day to day academic learning and content delivery. The college has a well-established learning management system which was pivotal during the online and offline learning period . The department had always strived to impart a holistic education through its curriculum, various industry academia collaborations, skill development activities and social responsibility initiatives. Ample avenues are provided to the students to experiment and innovate throughout their academic journey at Kristu Jayanti College and the various academic platforms helps to kindle the curious minds to learn and innovate.

I congratulate the department in releasing the tenth edition of the Newsletter- Interface and wish them all success in their future creative endeavors.

FROM THE DEAN



Dr. Calistus Jude A.L.
Dean, Faculty of Sciences

It is exciting that the department of computer science's newsletter, "Interface," is now in its tenth issue and features news, events, and the opinions of its teachers and alumni. I value and appreciate the department's sincere efforts in planning diverse extracurricular and co-curricular activities throughout the academic year to provide students with a well-rounded educational experience. The department is one of the best at providing the best learning environment for the students in both online and offline mode. The Department has a lot to be proud of, including its role in the NIRF 2022 rankings, for the college to be placed among the top 150 colleges in the country and being ranked as one of the five colleges from Karnataka. The department has also made a huge contribution towards the ranking of college by India Today MDRA Survey (2022), as the Best Emerging College in Science at the National Level, the top rankings of its programmes at the National and Regional levels, through various partnerships with illustrious institutions and businesses for various academic enrichment programmes, the organisation of certificate programmes exclusively for female students, and many other accomplishments. This issue of Interface will undoubtedly shed more light on the methods used in teaching and learning, as well as the department's and its members' numerous endeavours and successes. I want to recognise and thank the editorial staff in particular for the work they put into the publication of this issue.

ABOUT THE DEPARTMENT



Prof. Sevuga Pandian A
Head, Department of Computer Science (UG)

The Department of Computer Science (UG) with its proud history of spanning over two decades and stands topmost in the Nation and in the State for the BCA Program it offers. BCA, BCA Analytics , BSc Data Science, BSc CSMM, CSEL PHCS, PHEL, STMM, STCS and STEC 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 1250 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, Sales Force, Oracle Academy, Microsoft Dynamics Academic, ICT Academy, ACM-W, NPTEL, AWS Educate, Dell EMC, Palo Alto, Honeywell, SAP, Infosys and VMware IT Academy and IIRS Nodal Center 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 department supports the Hybrid Learning model by implementing our own in-house customized Learning management system called Kristu Jayanti Learning Management System (KJLMS), a web application that enables the teachers to create dynamic courses that extend learning to the students, anytime, anywhere. KJLMS facilitates the blended mode of teaching-learning process of both online and offline classes by organizing and executing the teaching and learning in a creative manner.

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 & BSc Programmes are 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.

CONFERENCES



International Conference on Computational Intelligence (INCCI-2022)

The International Conference on Computational Intelligence was organized by the Department of Computer Science (UG) in association with the Indian Science Congress Association on 15th and 16th of March 2022. The inaugural address was delivered by Dr. Vijay Laxmi Saxena, General President, ISCA. The speaker gave a brief talk on how skills had to be developed to cope with the sudden onset of the pandemic and using various technologies like Computational Intelligence and AI to assist medical professionals and to curb the spread of the virus. She also spoke on Bio and natural intelligence which is used to comprehend and profit from utilization of intelligent machines to emulate the processes of the human brain. Fr. Dr. Augustine George, Principal, Kristu Jayanti College, in his Presidential Address Spoke on how the conference is facilitating thought provoking discussions on the various technological advancements in the field of science, questioning conventional wisdoms and notions, experimenting creative concepts, and revamping science in our country.

Prof. Venugopal K R, Vice Chancellor, Bangalore University in his Keynote Address, emphasized on the universal importance of Artificial Intelligence, Machine Learning and Deep Learning in Educational institutions. He insisted on the fact that everything around humans will be ingrained with AI in the near future. He cited his observation on how the world turned into an online gathering of educators imparting their knowledge upon the students through webcams and laptops due to the pandemic, which is a revolutionary change brought upon by Artificial Intelligence and Machine Learning.

Dr. K.S. Rangappa, Immediate Past General President, ISCA highlighted on how Science, technology and Innovation are the key drivers of economic development of the country and its importance for long term growth. He briefed the audience on the concept of Computational intelligence and how the analyzed data is used in various industries.

Dr. Geetha Bali , Former General President, ISCA spoke on India's excellence in the field of mathematics by citing various sources . She briefed the audience on the brain and its capacity to store 2.5 million GB of digital memory which is pivotal in proceeding info and storing information. She also spoke on the vital role of neuroscience in Artificial Intelligence which is an inspiration for human-like machines and neural networks.

Dr.Aravind Kumar Saxena , Former President, ISCA briefed the audience on Computational Intelligence in chemistry and on tackling environmental pollution due to nano-chemicals using an Intelligent system

Dr. Paras Nath Singh, President ICT-CS, Indian Science Congress Association 2021-22, in the first technical session on Power of Python spoke on the technical aspect of Python - Lambda, a model of computation, its functionalities and the advantages of using Python over other languages.He also elaborated on plotting graphs using Python's library-matplotlib.pyplot, and the compound data structures. The speaker also ignited the audience on how Pandas package is providing fast, flexible and expressive data structures.

Dr. R Devika Rubi, R & D member, KMIIT, Hyderabad in the Technical Session II on AI in healthcare brought to light the significance of AI in decision making with respect to the radiology and pathology department. She also spoke on the various methods of Image enhancement, wherein the preprocessing is done before Deep Learning to ensure that the image quality and attributes are on par with the requirements.

Dr. Lakshmi s Iyer , Acting Associate Dean for graduate programs and research, L M Baker Jr Partners in Excellence, Professor and Computer Information Systems, walker College of Business, Appalachian State University, USA provided a bigger view of Artificial Intelligence and Machine Learning together with evolutionary computing. She briefed the audience on Ant Colony optimization and its applications. She also elaborated on the impact in society when using these technologies like Unemployment due to automation and economic inequality due to unemployment.

Mr. Ashit Kumar, Lead Architect, Huawei Technologies in Technical Session- V : on Open Source – ‘How to Contribute and Create an Impact’ emphasized on the main aspects of the Open Source aspect: Understand, Identify, Setup and finally contribute. He then introduced the audience to the SODA foundation, which is a sub-Foundation under Linux.

Dr. Ranjitha M, Associate Professor, Dept. of Computer Science, Kristu Jayanti College in the last Technical Session on Medical Image Analysis from Healthcare Perspective spoke on the importance given to computer aided diagnostics -VR and robotics leading to more accurate results .The two days international conference concluded with the valedictory ceremony. The Chief Guest of the valediction Dr. Hanumanthappa, Professor and chairman, Department of Computer science, Bengaluru University and application, insisted the need to remain updated with the technology and cater to the benefit of the society through research contributions.

NATIONAL CONFERENCE ON COMPUTATIONAL INTELLIGENCE (NCCI 2023)

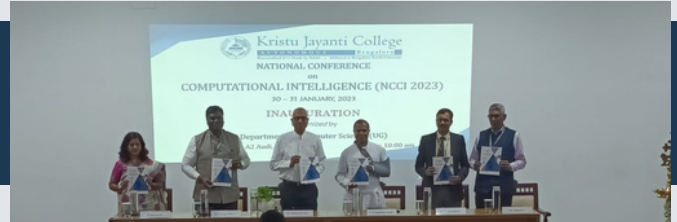


The National Conference on Computational Intelligence was organized by the Department of Computer Science (UG) in Collaboration with AK Choudhury School of Information Technology, University of Calcutta on 30th and 31st, January 2023.

Fr. Dr. Augustine George, Principal, Kristu Jayanti College delivered the Presidential address through which he emphasized on competencies, innovation, learning and research. Father elaborated on associative, observative, innovative, experimental and questioning capacities.

The chief guest, Mr. Rostow Ramanan, Chairman and CEO, Alphahive, Bengaluru delivered the inaugural address in which he emphasized the importance of an individual's development as a computer science professional, development of character and growth as an individual. He instilled in the audience a sense of confidence and encouraged them to develop fortitude and cultivate habits such as truthfulness, charity and forgiveness.

Dr. Kunal Narayan Chaudhury, Department of Electrical Engineering, Indian Institute of Science, Bengaluru was



the resource person for the first technical session. The session was about the use of deep learning techniques in the field of computational imaging.

Dr.Kunal explained about the difference between classical and deep learning. He familiarized the audience with the various reasons behind the success of neural networks. He delivered an in-detail explanation about imaging modalities, the MRI (Magnetic Resonance Imaging) system and CT (Computerized Tomography) scans. Sir also spoke about Biological Neural Networks and CNN (Convolutional neural networks) and about the new era of computational imaging. He covered major aspects of visual analytics, image classification and image reconstruction.

Prof. Amlan Chakrabarti, Director, AK Choudhury, School of Information Technology, University of Calcutta. The session familiarized the audience with the concept of water informatics and the machine learning techniques used for the same. The primary focus was to understand the digital solutions to the water industry and to be able to correlate the solutions with their region-specific problems and thereby generating new innovative ideas.





He explained how machine learning can automate, simplify and improve many aspects of water monitoring including improving modeling and analysis.

Ms. Priyanka Roy, Data Architect, ADOBE in the last session highlighted the importance of blockchain and how it was revolutionizing the world. She pointed out its key features such as decentralization, immutability and consensus. She threw light on the evolution of blockchain and emphasized why data security and transparency needed advancement and the various blockchain security measures and how it works. Blockchain networks and its features, various blockchain protocols and usage as blockchain as a service were the highlights of the session. The conference witnessed the paper presentations of more than 60 researchers and the abstracts of the same was released during the conference.

detecting and correcting equipment malfunctions, detecting environmental anomalies, predicting the effects of policy decisions and controlling allocation and distribution.

Mr. Ajith Mathew George, Co-founder and Director-Technology at Sysfore in the third technical session on Paradigm Shift in programming - No code Revolution spoke on tackling digital transformational challenges like budgets, time resources, expectations from customers, cybersecurity, changing workforce, surging digital demand and on how people who have no knowledge about programming can build these kind of applications. Mr. Ajith emphasized the importance of no-code and how it helps in gaining speed in creating applications. The no-code movement refers to an ecosystem of tools and platforms that lets anyone build and launch software without learning how to code. He spoke about various no-code tools, environment for creation of such applications and also provided a live demonstration.

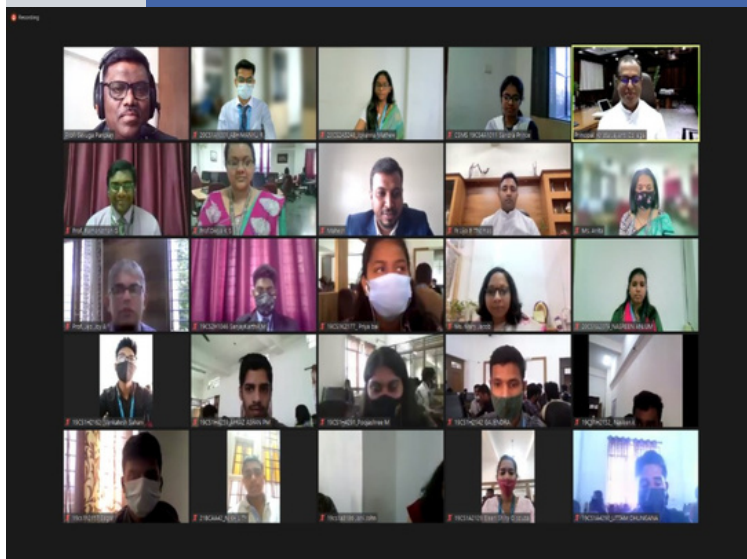


FESTS

XACTITUDE 2022

Xactitude 2022 , the annual National Science and Technology fest was organized by the Department of Computer Science (UG) based on the theme - Blockchain Technology Trends. In accordance With The Theme, Statsoryx (Statistics Event), Electrovolta (Electronics event), Codex (Coding & Debugging event), Neutrino (Physics Event), π rates (Mathematics event), Web Designing competitions were organized. There were participants from 16 different colleges who took part in all the events. The preliminary rounds were conducted through Auto Proctoring Google Forms, workbench, hacker rank enabled with zoom platform.

The inauguration was presided by Rev Dr. Augustine George , Principal Kristu Jayanti college, emphasized on the fact that we live in an era where technology creates a more global platform redefining the way we connect to each other. . He also spoke on the enormous opportunities and challenges in technological innovations. Father insisted on the need for 3C's - Connect, Communicate and Converge. He also said that the ability to innovate is the biggest challenge in the world today and hence, one has to go the extra mile and participate in all academic activities.



The chief guest for the inaugural session Mr.Mahesh Srinivastava, Technology Leader at Solve Care, Bangalore advised the students to adapt themselves to the emerging technologies. He also explained how real-world problems can be addressed or solved by adapting some of the emerging technologies like Cloud computing, Data Analysis, Digital experience, Digital reality, Cognitive Computing, Block Chain. Mr.Mahesh also motivated the students to connect with world leaders and learn from their experiences. He concluded the inaugural address by highlighting the importance of self-learning, hard work, passion and dedication that can take an individual to greater heights. The ninth edition of the Department Newsletter "Interface" was released by the dignitaries. The Fest Prelude was delivered by Prof. Ramanathan G, Coordinator, Computer Academy. The Inaugural session was followed by the various events of Xactitude 2022.The fest concluded with the Valedictory Ceremony which was presided over by Rev. Fr. Emmanuel P J. The ceremony ended with the announcement of winners of all events. The Overall winners trophy of Xactitude 2022 was Presidency College, Bangalore.

SYNCHRONIZE 2022



The students left no stones unturned and participated in a synchronized manner in all the events of the Intra Collegiate IT fest with a total participation of more than 600 students competing for the 12 events. The preliminary rounds were conducted from 19th September to 24th September 2022 through Google Forms and Quizziz platform, and 70 students were selected for the final round.

Synchronize 2022 was inaugurated with the lighting of the lamp by student secretaries of Computer Academy and other dignitaries on 30th September. Fr. Emmanuel P J, Director, Kristu Jayanti College of Law presided over the inauguration. Father emphasized on the need of embedding technology in the campus and day to day life of humans.

The Intra-Collegiate IT fest Synchronize 2022 was organized on 30th August 2022, by the Third-year students of BCA and B.Sc. for the first and second year students, to provide an opportunity to organize, participate and showcase their potentials. Synchronize 2022 was based on the theme of Virtual Reality. The students were grouped into 9 teams named after the Virtual Reality giants, namely – Within, Vironit, Nvidia, AMD, Ninehertz, Oculus, Centrex, Worldwiz and HTC. The fest offered events in all the foundation subjects like Mathematics, Statistics, Electronics, and Physics so that students could exhibit their skills and be inspired. Synchronize 2022 also saw the beginning of gaming with Fifa 22 and Valorant as the two Esports games for the gaming event. Students participated in all the 12 well organized events of Synchronize 2022.





The Chief Guest for the Inaugural session was Mr. Venkataraman Umakanth, Vice president and Head Analytics of IT Vees, Bangalore. He highlighted on the need of entrepreneurship and innovation for the societal transformation. Sir also mentioned the role of attitude and persistent learning to reach the goals of an individual.

The Fest Prelude was delivered by Prof. Prathap G, Staff Coordinator, Computer Academy. The Inaugural session was followed by the final rounds of Coding and Debugging, Elektreum event, and Graphosnark, which was held offline.

The fest concluded with the Valedictory Ceremony which was presided over by Fr. Joshy Mathew, Coordinator, Department of English (PG), Director, Library and Information Centre. The final report of Synchronise 2022 was presented by Dr. Jasmine Beluah, Staff Coordinator, Computer Academy. The ceremony ended with the announcement of winners of all the events.

GALAXIA 2022

The BCA and BSc. students from the Department of Computer Science (UG) organized a science exhibition , Galaxia 2022 on the 29th September 2022, in M1 Auditorium.

This Exhibition has been conducted by the students after 2 year of gap due to the Covid.

The exhibition consisted of 5 major divisions: Electronics, Physics, Maths, Statistics, and Computer science. The visitors were provided an explanation in details of the different experiments and inventions. It was a thoroughly knowledgeable experience.

Several concepts from the machine learning, artificial intelligence and data analytics were well demonstrated through models and simulations Galaxia-2022 and explored the fair. With the help of the CSA student volunteers, the whole process was conducted..



A few displays of the exhibition were: Pathfinder, a mobile control car, principles of Pythagoras, Retro 5 games, etc. The visitors to this knowledgeable place were the students from various schools. The Centre for Social Activities (CSA) has been organizing Community Education for the daily wage laborers' children studying in the K Narayanapura Government School.



GUEST LECTURES

Expert Talk on IT Industry Expectations

The Industry Talk on “IT Industry Expectations” was organized by the Department of Computer Science (UG) on 14th October, 2022. Ms. Francina Sonia, First Line Assistant Manager, Kyndryl India Pvt Ltd, Bangalore explained in detail about the software module development process in IT companies and also about various practices to be followed by IT engineers. She explained about the attitude to be kept by the aspiring candidates who are about to join the IT industry. She also shared the industry experiences, expectations and the best qualities to be possessed by the graduates. The participants were very much interested and interacted with the resource person with their questions.



Expert Talk on Digital Forensics and Incident Response

The Department of Electronics organized an expert lecture talk on "Digital Forensics and Incident Response" on 16th September at 10.00 AM in Auditorium M1. The main objective of this program was to bring awareness about digital forensics and incident response among the students.



Dr. Abdul discussed on ‘phishing’ and how to hack into a person's private network and collect all the personal information. He also briefed on accessing the control of the camera by providing a demonstration. The demo was exciting and the students were all well engaged in the session. He shared his experiences in his field of research regarding hacking. He also spoke on ethical hacking and how it can be used with good intentions and inspired the students to perform Hacking by keeping its ethnicity. Dr. Abdul narrated the procedures that Forensic officers follow when a gadget engaged in an unethical incident is caught, how we retrieve data from the gadget and how we clone it using a technique called imaging.

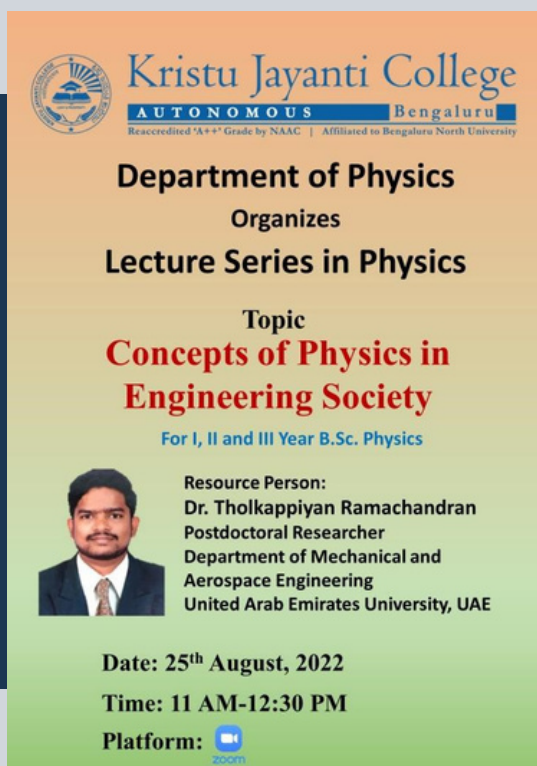
Expert Talk on Concepts of Physics in Engineering Society

A session on “Concepts of Physics in Engineering Society” was organized for the physics students on 25th August 2022 in virtual platform.

The resource person Dr. Tholkappiyan Ramachandran, Post Doctoral researcher, Department of Mechanical and Aerospace Engineering, College of Engineering, UAE gave an overview of what physics is and what it is dealing with

The speaker introduced the audience to the different branches of physics and explained the role of them in the society. The resource person demonstrated the applications in each and every branch with specific examples. The speaker also briefed on the career opportunities for physics students in India and abroad, giving emphasize to his parent institution.

Dr.Tholkappiyan also explained in detail all the scholarship opportunities in his university and the process of applying for the same.




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Department of Physics
Organizes
Lecture Series in Physics

Topic
Concepts of Physics in Engineering Society
For I, II and III Year B.Sc. Physics

Resource Person:
Dr. Tholkappiyan Ramachandran
Postdoctoral Researcher
Department of Mechanical and Aerospace Engineering
United Arab Emirates University, UAE

Date: 25th August, 2022
Time: 11 AM-12:30 PM
Platform: 

Expert Talk on Software Development using Agile

The session on “Software Development using Agile” was organized on 27th August 2022 for BCA students. The technical talk was conducted by Mr.Mohammed Shamsuddin, Software Engineer, Kaplan T Inc. The Resource Person Mr.Mohammed Samsuddin explained in detail about the software module development process

Expert Talk on Software Development using Agile



using Agile and provided a very good comparison between the traditional waterfall model and Agile model. Mr. Shamsuddin also shared his industry experiences and spoke on the expectations of the industry from the graduates.

International Research Empowerment Lecture



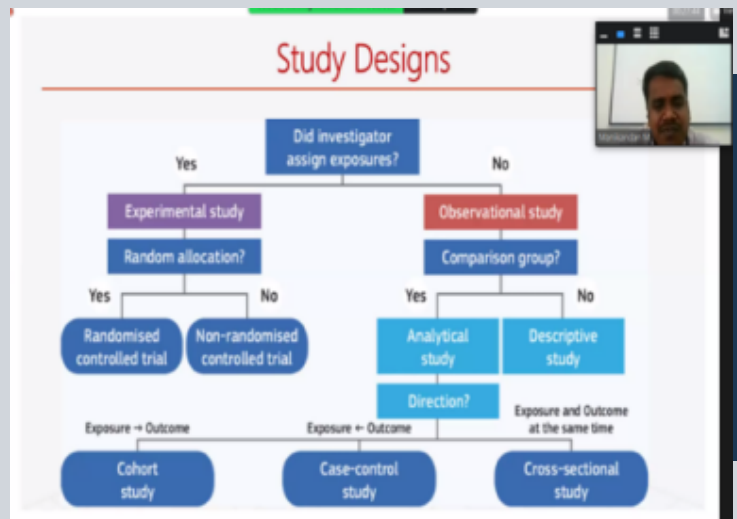
The International Research Empowerment Lecture was organized on 29th August 2022 for Computer Science (UG) Faculty Members. Dr. Mohammed Rawidean, R & D Manager, Technology Deployment Department, Malaysia delivered his talk on

“The Wireless Sensors Network (WSN)”.Sir highlighted the need of WSN presently as it is widely used to build decision support systems to overcome many problems in the real world. The resource person also mentioned that one of the most interesting domain, Precision Agriculture (PA) has an increasing need for decision support systems . The speaker presented WSN as the best way to solve the agricultural problems related to farming resources optimization, decision-making support, and land monitoring. He spoke on the usage of the basic principles of Internet-of-Things (IoT) and WSN technology in precision agriculture systems . The resource person gave a detailed overview of the hardware architecture, network architecture and software process control of the precision irrigation system.

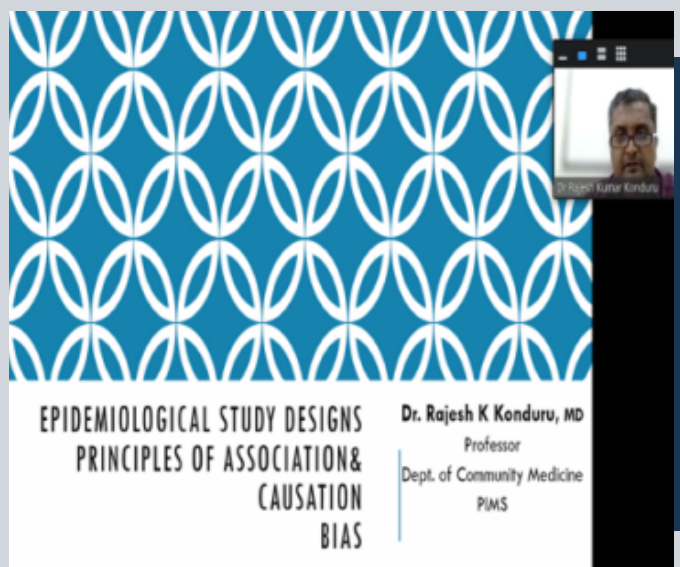


Expert Lecture on Intellectual Property Rights

The Department of Statistics organizes “Expert Lecture Series on Clinical Trials “ on 28th April 2022 and the session was handled by Dr. Manikantan M,Department



of Community Medicine, Pondicherry Institute of Medical Sciences (PIMS).Sir briefed the students about his experiences as a professional, working in the field and explained all that is involved in the process of a clinical trial . Dr. Rajesh Kumar Konduru,Professor, Department of Community Medicine, PIMS in the second session explained on how the odds ratio and ROC curves are used in the process of clinical trial studies.



COMMEMORATIVE DAYS

International E-Waste Day



Students, Faculties and Administrative staff are deposited the e-waste in the bins which are placed in various blocks from 14th October 2022 to 20th October 2022. They collected various e-waste equipment such as mouse, keyboard, wire, Circuit boards, DVDs, Compact disks, Audio Equipment, amplifiers and so on. On 21st October 2022, all the three E-waste collected bins were submitted to Mr. Amir, Lab Administrator, Kristu Jayanti College (Autonomous), Bengaluru, by Faculty coordinators and student coordinators.



World Entrepreneurship Day

The programme focused on entrepreneurial development (ED) to provide knowledge of business to the students having no knowledge and to make them successful in business which was conducted on 27th August 2022. Dr. Muruganantham A, Director, Kristu Jayanti Incubation Centre, Kristu Jayanti College, Autonomous, Bengaluru explained about the main perspectives such as the promotion for First Generation Businessman and Industrialists, Create Awareness about Availability of Resources, Encourage Self Employment Tendencies, Make a Successful Entrepreneur and he remove doubts of Entrepreneurs, Give Solutions and Suggest Remedies of Problems.

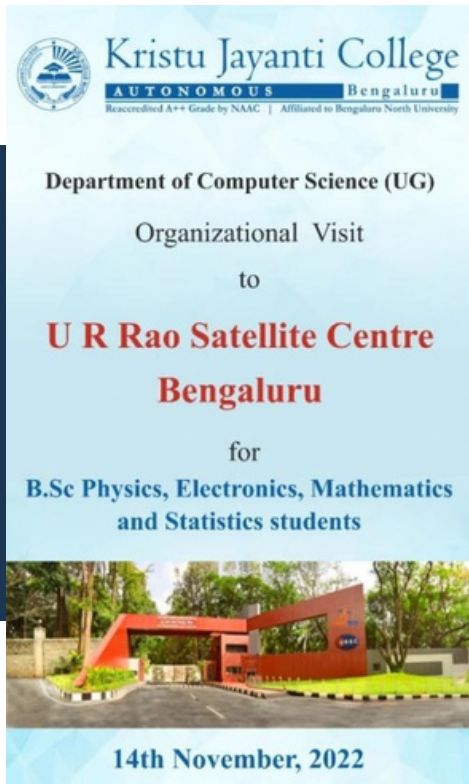
CODE-HACK



Every year the third week of September is observed as the national coding week. From 14th to 20th September 2022 is observed as the National Coding Week. To utilize this week properly and inculcate a love for coding among the students of Kristu Jayanti College, we propose running a 4-day coding competition for all the students. For the first-of-its-kind multi-day online coding competition 'CODE-HACK 22' held on 17th -20th September 2022, the winners of the competition were selected from their Hacker-rank score.

INDUSTRY VISIT

Industrial Visit to U R Rao Satellite Centre, Bengaluru



The Department of Computer Science (UG) organized two Industrial Visits to U R Rao Satellite Centre (URSC), XM53+RQ5, HAL Old Airport Road, Vimanapura , Bengaluru .The first visit was on 25th of April, 2022 for the sixth semester BCA students. 285 students visited the center in four batches. Each batch and each batch accompanied by faculty members. The second visit was on 14th November 2022 for 375 BSc. Statistics, Physics, Electronics and Mathematics Students. They visited the centre in 5 different batches and each batch were accompanied by 2 faculties per batch. The students explored the usage of programming concepts in the process of developing and launching satellites. For many students, this visit was their first step towards the exploration of knowledge in

the field of satellites. Dr. Nagaraj explained the different types of satellites and their applications. Various components and the process of how the satellites are created were well explained by Dr. Nagaraj. They were able to realize how a laboratory could be integrated in a single chip. The students also got an understanding of how Artificial Intelligence is used in satellite operations, in particular to support the operation of large satellite constellations, which includes relative positioning, communication, end-of-life management. They were also briefed on how Machine Learning systems which is commonly used in space applications to approximate complex representations of the real world. The students were also briefed on Mars rovers using AI, and been taught to navigate by themselves. The students were also provided with the insight of careers in satellite centre .

Industrial Visit to Hewlett Packard Enterprise, Bengaluru



An Industrial visit to “Hewlett Packard Enterprise”, Electronic City Campus, Bangalore, was organized by the Department of Computer Science on Thursday, 19th & 20th , May 2022. 290 students of fourth semester BCA and 6 faculty members visited the enterprise in 2 batches .



The visit provided the students an insight regarding the internal working of organizations. The students were divided into 6 different batches for the visit of different facilities in the campus. The students were taken to five major labs of the company - Global lab, Training lab, ITOC, SME and the IOT lab where they were briefed on the concepts of data networks, security monitoring, data centre,, the communication system between the clients and the company, Internet of Things with a model explaining the working of IoT. The students were provided with a small video clip regarding the establishment of the company and its expansion at the end of all the day. The students had a delightful experience and gained a lot of professional insight about the IT working environment and the infrastructure.



COLLABORATIVE EVENTS

SODACODE 2022 Hackers' Bootcamp 01

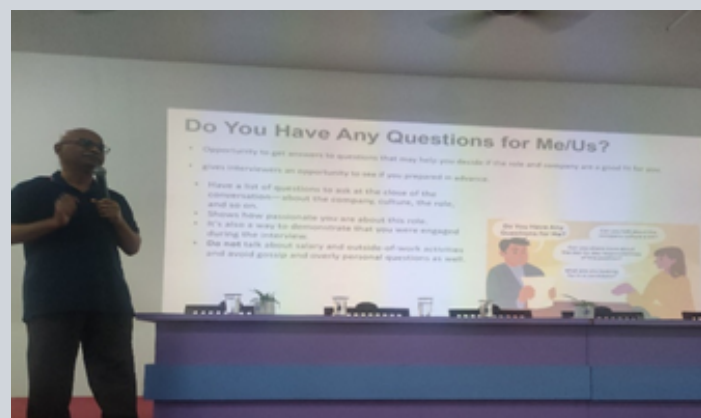


The SODACODE 2022 Hacker's Bootcamp 01, conducted on 21st March was hosted by the Department of Computer Science (UG) for the skill training of UG and PG students, and to give an orientation about SODACODE Hackathon. The inaugural session started by faculty in charge Ms. Ayshwarya, Faculty, Kristu Jayanti College. Later, Prof. Sevuga Pandian A, HoD, Department of Computer Science (UG), extended a cordial welcome to the guests and the gathering, followed by introduction of the key resource person Mr. Sanil. The resource person took over the session later on to give a brief introduction about the program, importance of Open source and many other core topics, following him, all the other resource persons shared their views on how the bootcamp and the open-source technology would be beneficial to the students and the organization, and how this very neglected topic could turn out to be a driving force for all inventions around the world on top of creating in numerous learning opportunities to developers all around the globe irrespective of their location and qualification.

After the speakers finished their interaction with the students, on a closing note Mr.Sanil threw light on the schedule for the day and its grave benefits. After the Inauguration, all the participants were request to assemble in computer Lab for hands on training and the resource persons trained about GitHub tool and working procedure, following that the training was completed with closing ceremony talk by Dr.Kumar and Prof. Sevuga Pandian.

INDUSTRY MENTORSHIP PROGRAM – (Honeywell India)

Industry mentorship program organized on November 11, 2022. The aim of the session was to impart knowledge in the domains of skill development, resume writing and attending technical and HR interviews with confidence. It was an opportunity to prepare themselves on how these domains are going to help us out in IT Industry. Students can see how the principles they have learned in the classroom are actually applied for the research in various fields. The session began with a briefing on skill development and how our skills helps us to stand out by Prof Sevuga Pandian, Head Department of Computer Science.



The topic was well explained and gave a detailed guide to enhancing and developing skills in various fields.

The speakers broke the stereotype of needing only degrees for attaining jobs and threw light on the importance of having skills. It's not about what you have and It's about how you use what you have. Secondly topic of the session was Interview Skills and Resume writing which gave insights of how one can present oneself in the professional front. This topic was mostly like a to-do list that was laid out clear cut to the students. Pro's and cons, do's and don'ts in an interview was established. The concluding topic was Priorities and Goals- it helped to get a clear understanding of priorities when set right help us work effectively to accomplish the goals.

All the speakers did an excellent job of teaching young moldable minds to priorities things in life, best learnt earlier. Prioritizing things is like the beam balance that helps the students to take decisions based on necessity and urgency.

Infosys Springboard: Students Webinar

Department of Computer Science (UG) organized a webinar “Infosys Springboard: Students Webinar” on 9th September 2022, in the SKE auditorium. The resource persons are from Infosys Springboard, Ms. Girija, Senior Analyst Learning-ETA, Campus connect team at Infosys and Ms. Pruthvi, Senior Analyst Learning-ETA, Campus connect team at Infosys. Dr. Margaret Mary T, welcomed and introduced the chief guest to the gathering.



Prof. Sevuga Pandian, Chief guest, were present on the stage.

The Technical session started with the resource person given a briefing on Infosys Springboard which is a platform offering several online courses free of cost along with a course completion certificate. The resource persons demonstrated students how to login and access the courses and asked them to take a live quiz. Students had hands on experience and were able to score passing marks on the quiz. On the completion of workshop students were able to know their way around the application and how to use it for their benefits. The workshop provided a learning experience for the students and provided them a platform where they learnt many things through an interactive and interesting webinar.

ACM-Women student chapter

ACM-W conducted on 30th August 2022 and its objective is to supports, celebrates, and advocates internationally for the full engagement of women in all aspects of the computing field, providing a wide range of programs and services to ACM members and working in the larger community to advance the contributions of technical women.



ACM-W Student Chapters are created to help recruit and retain students in computing programs. Professional Chapter-sponsored activities educate women about careers in computing and provide networking opportunities.

ACM-W aims to provide social and professional support for women in computing, and its proposed activities include:

- Facilitate technical growth of women by organizing invited lectures, seminars, workshops and informal meetings
- Provide a platform for the sharing of information, resources, ideas and experiences
- Support women in their professional career growth and help them to face the challenges in their work environment
- Encourage them to participate in computer-related studies and research

International Research Empowerment Lecture

International Research Empowerment Lecture in association with IEEE Computer Society is organized on 29th August 2022, the lecture series delivers the opportunities

for building impactful relationships, strengthening our workforce, and expanding our brand's reach critical objectives for competitive computing technologies.

Dr. Mohammed Rawidean delivered his talk on The Wireless Sensors Network (WSN) as it is nowadays widely used to build decision support systems to overcome many problems in the real world. One of the most interesting fields having an increasing need for decision support systems is precision agriculture (PA). He presented WSN as the best way to solve the agricultural problems related to farming resources optimization, decision-making support, and land monitoring. This approach provides real-time information about the lands and crops that will help farmers make the right decisions. Using the basic principles of Internet and WSN technology, precision agriculture systems based on the Internet-of-Things (IoT) technology is explained in detail, especially on the hardware architecture, network architecture and software process control of the precision irrigation system. The software monitors data from the sensors in a feedback loop, which activates the control devices based on threshold value. Implementation of WSN in PA will optimize the usage of water fertilizer and maximize the yield of the crops.



INTERNET OF THINGS FOR THE CLASSROOM



Education needs to keep up with the increasingly tech-savvy emerging generations. IoT-enabled education solutions, from smart boards to school security applications, are allowing the education sector to transform itself for the future. However, two obstacles stand in the way: cost and security. As we live through the ever-changing world, education is the sphere that remains surprisingly behind the general rapid advancement. IoT can help reform the educational system and solve the problems of the shortage of educators and textbooks. In this article, we'll have a closer look at the direct impact of IoT solutions on classrooms.

Most likely, when it comes to IoT-enabled education, we imagine, among other things, a technically-advanced classroom equipped with a smart whiteboard. It's valid, of course, but IoT for schools begins far before stepping into the classroom. For example, in connected schools, buses can tell parents when they would drop off their children and provide the latter with internet access to do homework, or consume educational content in route to school.

IoT indeed enables innovation, starting with whiteboards and connected school buses, moving toward smart lighting and security cameras—all of which provide real-time data and valuable insights to students, parents, faculty and administration. The most common IoT devices used in the classroom include:

- Interactive whiteboards
- Student ID cards
- Temperature and environmental sensors
- Security cameras with computer vision (say, for detecting weapons)
- Smart, efficient lighting and predictive maintenance for infrastructure
- Smart HVAC systems
- Automated attendance tracking systems (see ID cards)
- Wireless door locks and lockdown protocols

Here we will discuss some of the elements of a smart class room that can create change in the whole educational system.



1. Real-Time Insight and Correction

Insight into a student's progress, including test results, end-of-term reports and peer reviews, is a cornerstone of education. More Internet-connected devices, such as tablets,

paired with data analytics technology, can help educators monitor student attendance and activity during testing and classwork, and ultimately provide more agile and personalized instruction.

2. Better Visualization

The IoT paradigm means interactive content will soon become the norm, and everything from distributing exercises to marking papers will become automated and streamlined. Smart whiteboards and screens can provide for optimized learning and at the same time engage more students into the education process. Visualization of difficult abstract concepts and immediate access to new information on touch or on click can ensure better and more enduring learning.

3. Safer Environment

Smart tech is capable of making schools safer. Wearable wristbands, for example, can register students' entering and exiting the classroom and school premises. No more sneaking out at lunchtime or between lessons. This measure also helps to prevent intruders and other unauthorized persons entering schools. Besides, smarter security cameras can be trusted to monitor hallways and building perimeters to keep students safe.

4. Efficient Allocation of Resources

In classrooms smart HVAC systems may help save money and energy by functioning only when needed. IoT devices can automatically adjust lighting and audio visual settings to a teacher's specifications.

All of this looks promising, but some educational establishments remain concerned about the implementation of IoT in actual schools. First of all, there are infrastructural problems, like connectivity; then, there are funding problems; then, there are social problems, like acceptance, compliance and generally being scared of 1984-esque big brother monoliths; then, there are security issues, given the early-stage nature of IoT. And other unmentioned and/or unknown problems remain.

At the same time, when devices begin measuring and collecting data from students, they're automatically putting the security and privacy of students at risk by storing sensitive data in an IoT network (which are prone to cyberattacks). If connected devices penetrate all spheres, this can compromise a student ID linked to an individual's health records and even to the family's financial information.

Challenges for Educational Institutions

Two Obstacles: Cost and Security

To sum it up, two main concerns about IoT in education are expensiveness and security. However, students already live in a connected reality: in increasingly smart cities, in connected buses and cars, with smartphones, smartwatches and new and exciting EdTech solutions.

Dr. M. Balamurugan

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PATENTS

Patents Published

Dr. V.S. Prakash: Evaluation of Malicious URL Outbreaks Via Mining Approach Intellect Scheme To Evade Ransomware [Patent Application Number – 202241008361].

Dr.Thenmozhi K, Dr.Vennila J: An Integrated System of Image Recognition along with Artificial Intelligence for Accurate Prediction of Lung Cancer using various Medical Modalities [Patent Application Number – 202241020244].

Dr.V.S.Prakash , Dr. Vinoth B, Dr. Vennila J, Ms. Keerthi Vijayan, Dr. Margaret Mary T: Dual Perseverance Sprayer For Pesticides And Fertilizers Blender In Agriculture [Patent Application Number – 202241034259].

Dr. K Kalaiselvi , Dr. Gopika S, Ms. Mary Jacob : Behavioral Analysis Of Subject Barking Features And Remote Monitoring Using Machine Learning (ML) Based On IOT [Patent Application Number – 202241047822].

Dr.C.Naveeth Babu: Packet Sniffer and detection of data breach in network path analysis [Patent Application Number – 202241053328].

Dr.S. Britto Jacob, Mrs.Ann mary, Mrs.Mini G: SVIHRW covid-19 image classification [Patent Application Number – 2202241061684].

Dr.Soya Mathew, Ms.Menaka: Using augmented intelligence based On federated learning.

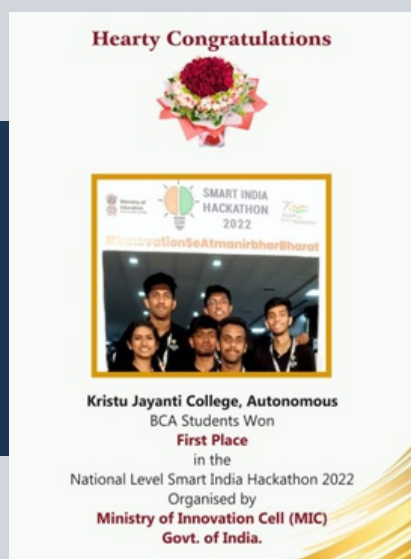
Dr.S. Britto Jacob: A Novel Segmentation And Pre-Processing Of Interstitial Lung Disease Using Deep Learning Model [Patent Application Number – 202241063769].

Faculty Awards and Recognitions

Fr. Lijo P Thomas : Outstanding Leadership, Asian Education Awards Conference 2022, KITES KRAF Productions.

STUDENT ACHIEVEMENTS

BCA students(Anto Tom Abraham, Andrew George Issac, Aaron Joju, Jyothish, Anciline Mathew under the leadership of Febin Francis) won First Place (Cash Prize: 1 Lakh) in the National Level Smart India Hackathon. July 2022 under the Ministry of Innovation Cell, Government of India. 6 students participated and won 9 prizes in the IT Fest-Phoenix conducted by Presidency College, Bengaluru. 13 students participated and won 9 prizes in the SYNTAXIA 2022 and 11 students participated and won 9 prizes in the AD INFINITUM, both conducted by St. Joseph College, Bengaluru .



NPTEL CERTIFICATION

53 students completed Operating System fundamentals.

45 students completed Solid State Physics.

83 students completed Programming in Java.

FACULTY PUBLICATIONS

Fruits Quality Detection Using Deep learning Models : A Meta Analysis [Dr.Thenmozhi K], IEEE -International Conference on Electronics and Sustainable Communication System (ICESC 2022), Coimbatore. August 2022 & ISBN: 978-1-6654-7970-7.

IoT based Soil Nutrients Analysis and Monitoring System for Smart [Dr. Thenmozhi K], IEEE - International Conference on Electronics and Sustainable Communication System (ICESC 2022), Coimbatore. August 2022 & ISBN: 978-1-6654-7970-7.

Energy Efficient Data Accumulation Scheme Based on ABC Algorithm with Mobile Sink for IWS Expert cloud and Applications [Dr. C. Naveeth Babu], Proceedings of ICOECA 2022 - Lecture notes in networks and systems - Springer book series. August 2022 & ISBN 978-981-19-2500-9_10.

Random forest regression with hyper parameter tuning for medical insurance premium prediction [Dr. V.S.Prakash], International Journal of Health Sciences. 6(S6), & ISBN 7093-7101.

Examination of Water Impurities of Erode District Using IoT and Machine Learning Techniques. [Dr. Thenmozhi K], Springer. OCT 2022, & ISBN 978-981-19-5845-8.

ARTICLE PUBLICATIONS

Neural Network Analysis on Employee Relationship Management among Public Sector Bank Employees –with Reference to Chennai Metro Branches [Dr.G.Jasmine Beulah], Indian Journal of Natural Sciences June,2022 ISSN : 0976-0997

A study on Surveillance System Using Deep Learning Methods [Dr.G.Jasmine Beulah], Springer, July 2022 E-ISSN 2190-3026 P-ISSN 2190-3018.

Review on Mapping of Tasks to Resources in Cloud Computing [Dr.G.Jasmine Beulah], International Journal of Cloud computing and Applications IGI Global. July 2022. ISSN: 2156-1834.

Analysing the Educational Challenges during COVID'19 by using R-Programming [Dr. Vennila J], International Journal of Ecological Economics and Statistics, CESER Publications. July, 2022, ISSN (P): 0973-1385 ISSN (O): 0973-7537.

Emotions and Body Vitals Detection using RGB and Thermal Images Implemented in Smart Street Lights through Machine Learning Techniques [K.Kalaiselvi, S.Gopika, Mary Jacob], Indian Journal of Natural Sciences. October / 2022 ISSN: 0976 – 0997

MIL-STD-105D with Single Double Sampling Plan [Dr. Vennila J], Indian Journal of Natural Sciences. October / 2022 ISSN: 0976 – 0997

On Faintly Upper and Lower Precontinuous Multifunctions in Intuitionistic Topological Spaces [Dr. Vennila J], Indian Journal of Natural Sciences. October / 2022 ISSN: 0976 – 0997

Smart Automation Agriculture using IoT Technologies [Dr.Margaret Mary, Ms. Divya K S] Indian Journal of Natural Sciences. Vol.13 / Issue 74 / October / 2022 ISSN: 0976 – 0997

Assessment of Awareness on Risk Factors and Screening Practices for Breast Cancer Among Age Group of 18-65 Years Women [Dr. Vennila J], NeuroQuantology. December 2022/ Volume 20 | Issue 20 | Page 804-818| doi: 10.48047/NQ.2022.20.20.NQ109081

PAPER PRESENTATION

Accessibility and Usability Evaluation of Learning Management System: A case study on Kristu Jayanti Learning Management System by Dr.K Kalaiselvi and Fr.Lijo P Thomas at the 13th Global Islamic Marketing Conference held in Istanbul- Türkiye.

Examination of Water Impurities of Erode

District Using IoT and Machine Learning Techniques - presented by Dr.Thenmozhi K at the International Conference on IoT based control networks and intelligent system, Reva University, Bangalore.

Analysis of Wiener Index of Cycloalkanes for $C_n H_{2n}$ structural molecules by Ms. Menaka B at the International virtual Conference on Progress in Mathematics towards Industrial Applications (PMTIA-2022). Complex Dynamics of Fractional Order SIR Model with Carrying Capacity in Discrete Time by Ms. Menaka B and Mr. Britto Jacob S at the 3rd International Conference on Communication CMR Institute of Technology, Bengaluru.

Chaos, Bifurcation and Stability analysis of Trophic Level Prey Predator System by Dr. VS. Prakash and Mr. Britto Jacob S at the 3rd International Conference on Communication CMR Institute of Technology, Bengaluru.

Predictive Modelling for Coffee Production Using R Programming by Ms. Keerthi Vijayan, Ms. Liji George and Dr. Vennila J at the 3rd International Conference on Communication CMR Institute of Technology, Bengaluru.

Analyzer for Heterogeneous Peer Server Nodes with ADCD Technique for Load Diversion by Dr. VS Prakash and Dr. Vennila J at the 3rd International Conference on Communication CMR Institute of Technology, Bengaluru.

Improved Privacy Conservation Applicability for the Disturbed Data in Multi Partitioned Data Collection Environment by Dr. VS Prakash at the 3rd International Conference on Communication CMR Institute of Technology, Bengaluru.



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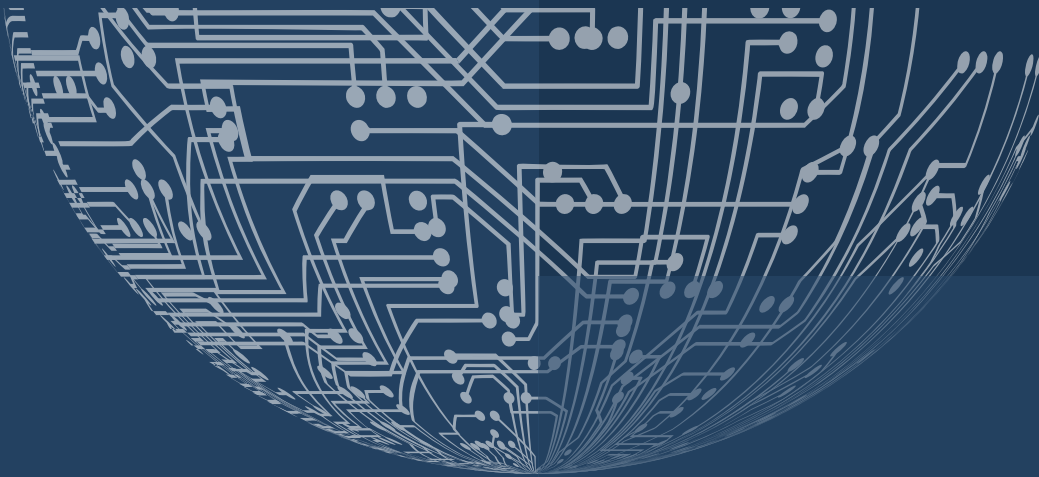
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DEPARTMENT OF COMPUTER SCIENCE (UG)

INTERFACE



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