Kristu Jayanti College
AUTONOMOUS — Bengaluru
Reaccredited 'A++' Grade by NAAC | Affiliated to Bengaluru North University

TECHNOBYTES

CHIEF EDITOR: REV. DR. AUGUSTINE GEORGE, PRINCIPAL | DR. R KUMAR, HOD

THE EMERGING POWER OF P-COMPUTERS

Mr. Vignesh Raja S
Associate Tech Architect Aspire Systems
Chennai, Tamilnadu

The intensive growth of artificial intelligence (AI) and machine learning (ML) has led to indirect crisis in computing and a significant need for additional hardware that is both energy-efficient and scalable. The primary step in both AI and ML is making decisions based on inadequate data in hand. The best approach for which is to output a probability for each possible circumstances The limitation what we have is the classical computers cannot do that in an energy-efficient way, which led to search for novel approaches in computing. Generally Quantum computers operate on qubits that could meet these kinds of challenges however they are very sensitive to their environments, must be kept at extremely very low temperatures and are still in the early stages of development.

Original | Sparsified
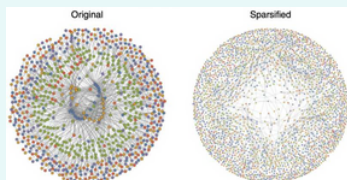
Kerem Camsari from UC Santa Barbara stated that probabilistic computers (p-computers) can be one of the proposed solutions. P-computers are powered by probabilistic bits (p-bits), which interact with other p-bits in the same system. Unlike the bits in traditional computers, which generally have binary states as 0 and 1, qubits can be in more than one state at a time, p-bits fluctuate between positions and operate at room temperature. The inherently probabilistic computers built out of p-bits, can outperform state-of-the-art software that has been in development for decades, said Camsari, who received a Young Investigator Award from the Office of Naval Research earlier this year. Camsari's group collaborated with scientists at the University of Messina in Italy, with Luke Theogarajan, vice chair of UCSB's ECE Department, and with physics professor John Martinis, who led the team that built the world's first quantum computer to achieve quantum supremacy.

Together the researchers achieved their promising results by using classical hardware to create domain-specific architectures. They developed a unique sparse Ising machine (sIm), a novel computing device used to solve optimization problems and minimize energy consumption. The sIm is a collection of probabilistic bits which can be thought of as people. An 8 p-bit p-computer that these researchers built showed the device's potential. The initial findings as a result of multiple experiments mean that building p-computers with millions of p-bits to solve optimization or probabilistic decision-making problems with competitive performance may just be possible. The research team hopes that p-computers will one day handle a specific set of problems, naturally probabilistic ones, much faster and more efficiently.

CONSULTANCY

Dr. Kumar R completed Technology Services for International Skill Development Corporation from 01/07/2021 to 31/01/2022 and generated **Rs. 1,25,000/-**

FEST WINNERS
★★★★★

Aswin S Nair
II SEM, MCA, A

Jithin Mohan
II SEM, MCA, A

Secured II Place in **Ideannerve** event of the National Level IT Fest **'Enthios 22-TECHINNERVE'** conducted by Jyothi Nivas College

PRINCIPAL'S MESSAGE

Rev. Dr. Augustine George

Crisis requires society to renew itself, albeit in a disruptive way. The Covid-19 pandemic transformed the ways of working, living, and relating to each other on a global level, abruptly and dramatically. Our ability to build resilience in times of disruption was clearly tested this year with the challenges of Covid restrictions. The aid of right technology and academic expertise is the framework for blended learning methods which provided uninterrupted online / offline knowledge sharing to the learners. The strength of college is its robust academic infrastructure along with the physical infrastructure. The institution believe that learning and personal growth, in and outside the classroom, is a continuous process. The department of computer science have actively engaged the learners through different pedagogical approach in terms of variety of interactive, experiential and constructivist learning methods catering to the theme for the academic year Reinventing Educational process through Technological Integration. The Department of Computer Science (PG), Kristu Jayanti College aspire to enrich the learning experience of students by escalating to new way of teaching learning methods that amalgamate both formal and informal education. New kinds of online resources such as social networking sites, blogs, wikis, and virtual communities, have allowed people with common interests to meet, share ideas, and collaborate in innovative ways. A culture of sharing, augmented with a culture of participation has made this learning more interesting and attractive. Apart from the delivery of the curriculum through the novel teaching pedagogies, we engross them in social learning to augment and to sustain the technical skills of the students. The students are also encouraged to showcase their talents by doing innovative projects, participating in webinars and fests that promotes their employability and entrepreneurship skills.

'**Technobytes**' the Biannual newsletter of the department brings to limelight the amazing activities and meritorious achievements. It captures the glimpses of all academic, curricular and co-curricular activities, initiatives and achievements. I wish this endeavor a great success and I extremely appreciate untiring efforts of every creative mind behind it.

COMPUTER SCIENCE PG AT A GLANCE

Dr. Kumar R - Head, Department of Computer Science [PG]

The department offers Master's Degree in Computer Applications (MCA) approved by AICTE and M.Sc (Computer Science) with the intention to produce competitive computer professionals in tune with advanced technical concepts. The Department strives to impart substantial knowledge in problem solving techniques, competencies for employability and integrity by inculcating ethical values. The desire to pursue continued professional development by seeking out knowledge and experience is achieved by conducting sessions beyond the classrooms. The department is rated as one among Top 10 Promising MCA Colleges in India by Higher Education Review Magazine. The course structure and contents updated as per the latest requirement. The learning environment is intense and stimulating. The regular academic programme is enhanced by Seminars, Workshops, Personality Development Programmes, Attitudinal Workshop, Soft Skills Training, Tech-Talk Series, Student Seminar Series, Communication sessions, Paper presentations and Aptitude Reinforcement modules. Experts from industry conduct the IET (Industry Expert Training) sessions on a continuing basis. The students have participated in seven inter-collegiate fests in this academic year and won overalls in all the fests. The department has a very active software development cell that empowers the community by creating projects on demand. The students and the faculty members exposed to the latest developments in the industry. As part of knowledge sharing, peer to peer teaching motivated amongst the students. The academic transactions are rigorous and innovative. The IEEE Student Branch of our college conducted workshops and tech-talks. College is an institutional member of ICT Academy, ACM-W and Soda foundation, and all the faculty members are life member of Indian Science Congress.
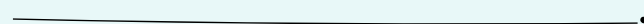
Python A Perfect Tool for Data Science or for Web Development?

Prof. Mary Jacob
Department of Computer Science

Python programming has numerous frameworks and features that help in web application development, graphical user interfaces, data analysis, data visualization, etc. It might not be an epitome choice for web application development; however it is broadly used for assessing large datasets, for data visualization, for running data analysis or prototyping. It is exponentially gaining traction amongst users for data science whilst being outmoded as a web programming language. Hence it is not necessary to know Python as a web programming language for doing data science in Python. It becomes the core technology which powers big data, finance, statistics and number crunching with English like syntax. The recent growth of the rich Python data science ecosystem with multiple packages for Machine learning, natural language processing, data visualization, data exploration, data analysis and data mining is resulting in Pythonification of the data science community.

Today, Python becomes one of the data science languages that have all the nuts and bolts for cleaning, transforming, processing and crunching big data. Python is the most vital skill for data scientist job role. Always Data Scientists like to work in a computing environment that can rapidly prototype by transforming their ideas and models easily.

Python has almost every aspect of scientific computing with high computational intensity which makes it a supreme choice for programming across different data science applications that can help communicate the data patterns and predictions to various stakeholders of the business effectively with pretty good visualization.

Python has a unified design philosophy that focuses on ease of use, readability and easy learning curve for data science. The high scalability of the language does things faster when compared to other languages like Stata, Matlab. There are more and more data visualization libraries and cool application programming interfaces being added for inclusion of graphics to depict the results of data analysis. Python has a pretty good community with large number of data science or data analytics libraries like Sci-Kit learn, NumPy, Pandas, and Statsmodels, SciPy etc. which have rich functionality and have been tested extensively periodically.

One of the best assets of Python is its simplicity and readability that makes it ideal for beginner or seasoned developers to use for data science and web development. For startups, in particular, the language offers flexibility, scalability, supports prototypes and MVP development, and more. Some of the top companies using Python for their web development include Pinterest, Dropbox, Instagram, and Bitbucket. Additionally, the adoption of Python for machine learning and AI is increasing its worth in data science, whereas new emerging languages are replacing Python in web development.

HYPERAUTOMATION

Hyperautomation is the continuation of business process automation beyond particular tasks. It provides automation for nearly any recurring action performed by business users by combining AI tools with RPA. It even finds business processes dynamically and creates bots. It is a mechanism for full digital transformation with tools like RPA, ML and AI collaborating to automate complicated business actions, including those that formerly needed subject matter experts. More power and flexibility is obtained to automate operations that were previously impossible to automate by integrating RPA and AI

Automation vs Hyperautomation

Traditional way to automation is specific to implement it within a particular context. In workload automation for example, scripts automate a number of extremely repeating procedures and tasks automated using BPM tools. AI expands traditional automation to include more jobs such as reading documents having OCR understanding them with natural language processing and providing summaries to humans with natural language generation. Making use of pre-built modules given via an app store or organizational repository **Hyperautomation** makes it easy to include ai and ml capabilities into automations.

-Beryl Sandrina
II SEM, MCA, A

Advantages

- Minimizes the cost of automation
- Increases IT-business alignment
- Enhances security and governance
- Enhances the incorporation of AI and ML into business tasks.
- Improves the capacity to measure the impact of digital transformation activities
- Helps prioritize upcoming automation efforts

VIRTUAL REALITY GAMING - OMNI ONE GAMING PLATFORM

Mycal A
II SEM, MCA, A

The Virtual reality gaming first came into existence in the early 1990s, where a person wares a VR gear set and enters the virtual game environment, the initial VR game consists of a chukker board and the goal hear was to chase around, aim and shoot the enemy using the gun controller of the VR gear.

Even though VR Headsets came around a long time ago, it got its popularity only in the last decade but however it seems like a logical progression for gamers to switch from monitor to a VR headset for a greater immersion into the gaming world it still feels nothing more than a passing trend.

The most common way to use VR headsets for gaming is to stand in an open room and use the hand controllers so that the software can track your hand moments in the VR world, but this practice has caused a lot of physical damages like jumping into a TV and breaking it or running straight into a wall or hitting someone close unintentionally while still on VR headset.

Keeping this reason in mind one company is trying to take personal gaming VR into next level with the machine called omni one.

What makes omni one different from standalone headsets is the platform itself, you wear a vest attached to the machine which helps keep you centered on the platform and gives the players the freedom of movement including crouching, kneeling, jumping and especially running in any direction, this is very familiar to the steven Spielberg's sci-fi movie ready player one where people were headset and move around omnidirectional treadmill.
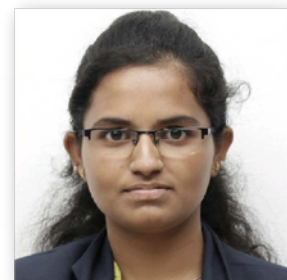
The omni one platform is made up of low friction plastic base so when we walk in the omni base our brain believes we are moving around naturally in the virtual world, this feature helps the gamers to experience the games like call of duty in a whole new level, this freedom of movement without the fear of hitting something in our house has been the missing piece for bringing the VR into the masses.

This new breakthrough can lay the foundation for the future of gaming, this technology can be used in many other fields like military to train the soldiers creating a realistic virtual environment or in medical field for performing training surgeries etc.

TATA AVINYA

Tesla! I mean who doesn't know tesla. Tesla is currently one of the largest and the most valuable car company in the world co-founded by Elon musk. But will Tesla's electric cars work in India? Factors including Tesla's starting price which is approx.60 lakhs, not having any charging infrastructure for tesla and mainly the roads of India would make tesla's working very difficult here. Indian roads are considered to be one of the dangerous roads in the world. Most of Tesla's features wont work here as the features would be general and not in particular with Indian roads. Does this mean Tesla will not work in India? The future is electric, but will India be left behind in this electric revolution, absolutely not! Because an Indian company is ready to tackle Tesla.

Shilpa R
II SEM, MCA, A

Tata group of companies have come up with their very own made-in-India EV called "Avinya" which is expected to release in the year 2025. Avinya is said to be an expression of the Tata company's vision of a pure electric vehicle, based on its GEN3 architecture. It comes packed with new age technology, software and AI that work in the background to deliver wellness and tranquility during transit. Avinya can run upto 500 km with a single charge. Furthermore, the battery used will support an ultra-past charge capability, in line with the infrastructure evolution, pumping a minimum 500 kms range in under 30 minutes. The overall philosophy for enhanced range would be "Minimize-Maximize-Optimize". Tata is considered to be dominating in the EV sector as it holds 96% of total sales share in the market as of February 2022.The word Avinya means innovation. Avinya is completely electric with a dope design. The price range of Avinya is between 30.00- 60.00 lakhs approx. As we are moving towards make-in-India products, Avinya could be the future of electric India.

Is "Programming" The New Biriyani..??

Dinesh B
II SEM, MCA, A

In this fast-developing World, where there happens to be continuous development and improvements in every field such as science, technology, medical, arts, business, entertainment etc. There is one commoner which runs the whole show…that is "Programming".

"Programming" - As we humans communicate with each other through a medium known as **Language.** The same way when a human needs to communicated with a computer we call it as a Programming Language and we ourselves as Programmer/Developer. There exists a few rules and regulations that forms the structure of the languages that the computer understands are these are **"Syntax".**

"Programming" is for the minds which can craft and create, unless like people who only believe God is the only creator….I may suggest you to look into the life of a Programmer just once. Programming is an artwork filled up with lines of code alongside with the logic present in it. These days coding is being thought from school days as a part of the curriculum and there are even more online teaching sites that train the young minds to start their coding lifestyle and to kick off their careers in the springtime of life.

There happens to be enamours growth in every industry with the help of programming and computers. As we can see programming is used even the smallest device we use in our day-to-day life. Everything in this world is going to be controlled through technology and programmers are the ones who are developing these tech-related gadgets. There existed days when people had to appoint drivers for a driving car but these days we have self-driven cars.

Programming resides in each developing and developed machine such as ECG machines, modern printing machines, and many more.

If u still ask me 'Is Programming the new Biriyani?' My Answer is YES..!!

A few centuries ago it was Doctors and Medics who spun the world, then it was Engineers who were running the show… but yeah now it is Programmers who are keeping their footsteps in each & every field from creating an application for delivering food to consulting a doctor online through apps. Henceforth programming with or without our knowledge is present in each device we use and in each activity we take part in.

If we just look into Human history once, we have always created and crafted some things that we always wanted to do, the same way programming helps us to make our life more convenient, reliable, robust, efficient and time-saving by building simple and user-friendly websites, applications, machines and much more which in return makes human life simpler and easy to lead.

PSYCHO ANALYSIS OF STUDENT'S MENTAL HEALTH USING MACHINE LEARNING

Jithin Mohan
II SEM, MCA, A

With the rapid changes occurring in society, student's have been undergoing various kinds of pressure due to different reasons. Covid being one of those reasons has brought a drastic change in the education system, from the traditional methods to online learning. This has increased the mental stress in students. Anxiety, academic stress, difficulties concentrating, sleeping pattern abnormalities, diminished social engagement, job fear and other factors all have an impact on students' mental health.

Machine learning is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy. It has recently gained attraction as a potential method for diagnosing depression.

Machine-learning models have been built that can recognize words and intonations in speech that may signal depression. These approaches are accurate, but they have a limit because they rely on particular responses to specific questions in order to make a diagnosis. One of the methods is to design a modular framework for predicting the mental health of students based on a set of questions. Questionnaire is created to assess and analyze the parameters associated with mental health among college students. Based on these parameters, a survey is conducted from different colleges and schools. Using the K-means clustering algorithm students are categorized into two groups: high stress and low stress. Multiple classification models are applied to predict the class of students using the labels identified by k-means. Through the dataset generated from the questionnaire, the suggested framework is experimentally validated. In addition, we examine students' responses to determine the parameters that are most important to them. After acquiring the results, necessary measures can be taken to tend to the student's mental health.

What Does It Mean to Mint an NFT?

The world of crypto and NFTs may appear frightening at first, but its far more approachable than you may think.

Creating an NFT

When Beeple's digital artwork Everyday: The First 5000 Days sold for 69 million dollars, it sent shockwaves across the art world, both for investors and creators. It was an opportunity for investors to join in on the next big thing, and it gave digital artists the ability to value digital goods on a whole new level. They were suddenly placed in the same price range as the world's most well-known fine artists. It all because of NFTs and the blockchain technology that underpins them. But how do you go about making an NFT? The answer can be found in a procedure known as minting

Prarthana Ponnath
II SEM, MCA, A

How Do You Create a Non-Fungible Token (NFT)?

To mint an NFT, you'll need access to both a blockchain and an NFT marketplace. You're essentially posting your token on the blockchain and making it available for purchase when you mint an NFT. OpenSea, Rarible, Zora, and, of course, Momint are some of the most prominent online markets. While minting and selling on each platform is different, you'll need to follow a few basic processes regardless of which marketplace you choose.

1. Create a One-of-a-Kind Digital Asset

Before you start minting your NFT, you'll need a few things. What's the first item on that list?

Make something unique to mint (emphasis on the word "original"; plagiarised work is not acceptable!). There are numerous tools available to assist you in exercising your creative muscles. If you're a Photoshop wizard, you may take advantage of the opportunity to produce a one-of-a-kind piece of artwork that reflects your passions. Alternatively, you might go through your photo library and select a beautiful image. It's a lot easier to do, and anyone with a camera can do it!

2. Select a Market Place

The vast majority of the time, you'll have to pay to get your NFT coined. The costs of putting your NFT on the blockchain are covered by these minting and gas fees. However, in some cases, you may be able to postpone these fees. Lazy minting is now available on Opensea, allowing authors to postpone paying gas and minting fees until after an NFT has been sold. Most exchanges will ask you to pay for your minting fees in a certain coin. Ethereum is a popular choice since it has a large user base for NFTs and is compatible with popular exchanges like Opensea and Rarible. Other marketplaces, such as Momint, use blockchains with extremely low minting fees, and in some cases, no minting expenses at all. The process of launching art/work becomes much more accessible as a result of this.

3. Select and Configure Your Digital Wallet

You'll need a blockchain wallet (also known as a crypto wallet) to hold your funds when you mint an NFT. A crypto wallet connects users to their crypto network as well as their account. When choosing a blockchain wallet, there are a few factors to keep in mind.

To use a hot wallet, you'll first need connection to the internet. The second need is that you purchase a non-custodial wallet, such as MetaMask, which gives you complete control over your cash. There is no third-party participation with a non-custodial wallet, and you own the private keys to your assets. A custodial wallet is a sort of storage device that a cryptocurrency exchange may assign to you. They're quite convenient, but they don't give you control over your private keys. Instead, your information is managed and stored by a third party.

4. Start an NFT collection by uploading your assets.

Because each marketplace is unique, there will be different instructions on how to construct an NFT. However, there are some general parallels. Choose the artwork you'd like to mint and fill in the blanks with information about the collection (like a name and description). Once you've done that, add the new asset to your first collection to finish the minting process! After you've minted your NFTs, what's next? After you've created your NFT, you can begin listing, marketing, and selling them. When you list your NFT on the marketplace, you'll be given the option of categorizing it as 'for sale'. Remember that while you can transfer and sell your NFTs on other platforms, you will almost certainly pay additional costs and fees. When you decide to offer your NFTs, you'll need to give certain transaction specifics, such as the price, the auction time limit, and the cryptocurrency you want to be paid in. The marketplace is likely to calculate the gas fees that cover the cost of recording a transaction at this stage.

Can you Solve this?

Arjun G K
II SEM, MCA, A
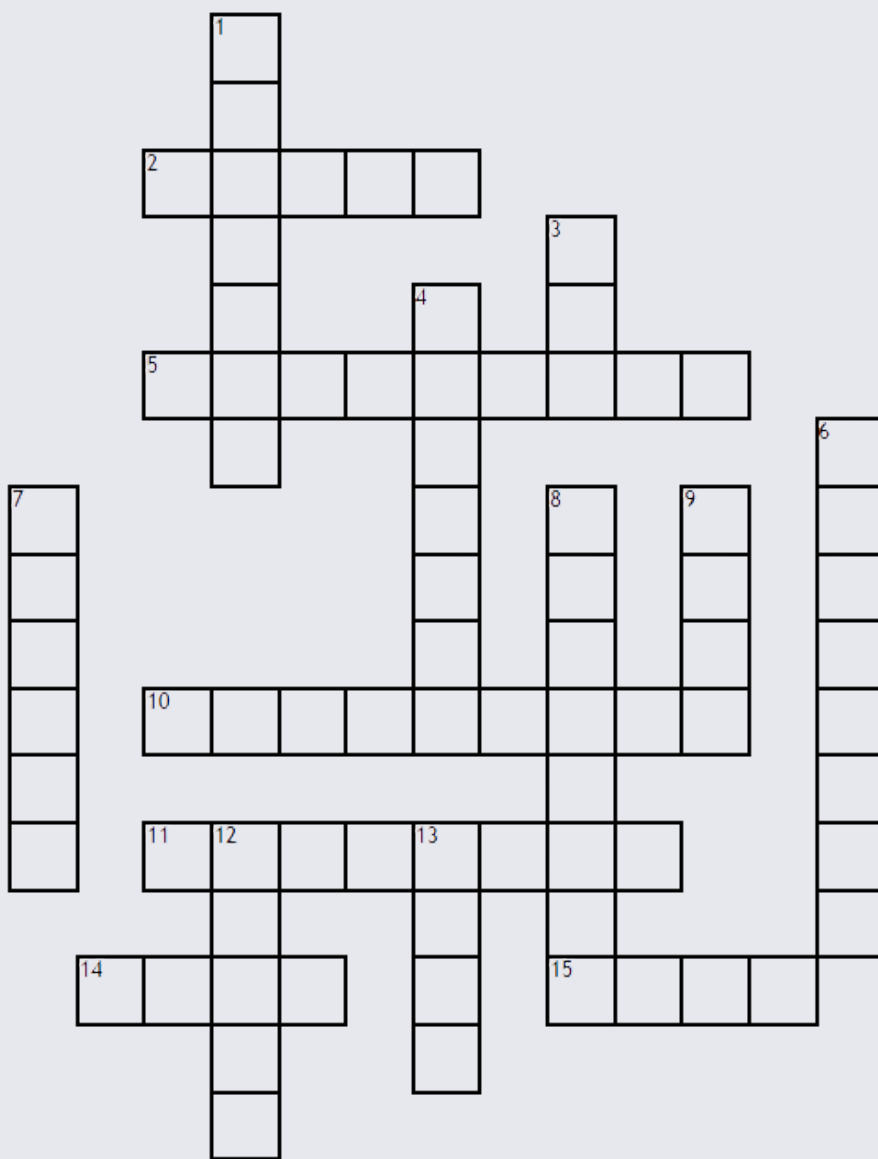
Across

2. A device that feeds data into a computer, such as a keyboard or mouse.

5. The exclusive right, as recognized separately in each country, to publish and sell literary, artistic, or musical materials.

10. A software system that links topics on the screen to related information and graphics, which are typically accessed by a point-and-click method.

11. copy (data) from one computer system to another, typically over the Internet.

14. Usually consists of eight bits.

15. A measure of the amount of computational work that a computer system performs.

Down

1. Usually comprises the display device, circuitry, casing, and power supply.

3. An error, flaw, failure, or fault in a computer program or system that causes it to produce an incorrect or unexpected result or to behave in unintended ways.

4. A client software program that runs against a Web server or other Internet server and enables a user to navigate the World Wide Web (WWW) to access and display data.

6. The collection of physical parts of a computer system.

7. Sending an email, posting photos on a social media site and using your webcam.

8. A part of a computer system or network that is designed to block unauthorized access while permitting outward communication.

9. The combination of typeface and other qualities, such as size, pitch, and spacing.

12. Any computer-generated information displayed on screen, printed on paper or in machine readable form, such as disk and tape.

13. A word or group of words that act as a way to cross reference to other documents or files on the computer.

Yield Farming!! What do we need to know?

Nived S
II SEM, MCA, A
_____

Basically it is one the investment strategy in DeFi. It involves lending or staking your cryptocurrency coins or tokens to get rewards in the farm of transaction fee or even interest. It is somewhat similar to earning interest from a bank account whereas technically lending money to the bank.

Yield farming is a keystone concept of using decentralized finance (Defi) to maximize returns. Where the users lend or borrow crypto on DeFi platform and earn cryptocurrency in return for their services. The yield farmers who wants to increase their yield output can employ more complex tactics. The world of DeFi is complex, but some users have learned tactics to make their cryptocurrency generate as much income as possible. For example, yield farmers can constantly shift their cryptos between multiple loan platforms to optimize their gains.

How does Yield Farming work?
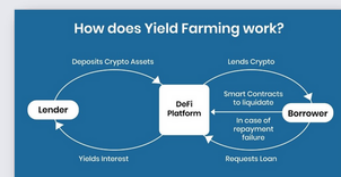
Types of Yield farming :

- **Liquid provider:** Users deposit two coins to DEX to provide trading liquidity. Exchanges charge a small fee to swap the two tokens which is paid to liquidity providers. This fee can sometimes be paid in new liquidity pool (LP) tokens.
- **Lending :** coin or tokwn holders can lend crpto to borrowers through a smart contract and earn yield from interest paid on the loan.
- **Staking:** there are two forms of stalking in the world of Defi . The main form is on proof-of –stake blockchains, where a user is paid interest to pledge their tokens to the network to provide security. The second is to stake LP tokens earned from supplying a DEX with liquidity. This allows users to earn yield twice.

Popular yield farming protocols

Curve Finance
Curve is the largest DeFi platform in terms of total value locked, with nearly $19 billion on the platform. With its own market-making algorithm.

Aave
Aave is one of the most widely used stablecoin yield farming platforms, with over $14 billion in value locked up and a market worth of over $3.4 billion.

Uniswap
Uniswap is a DEX system that enables token exchanges with no trust. Liquidity providers invest the equivalent of two tokens to create a market. Traders can then trade against the liquidity pool.

Risks of yield farming

Yield farming is a complicated process that exposes both borrowers and lenders to financial risk. When markets are turbulent, users face an increased risk of temporary loss and price slippage. Some risks associated with yield farming are as follows:

Rug pulls: Rug Pulls are a form of an exit scam in which a cryptocurrency developer collects investor cash for a project and then abandons it without
repaying the funds to the investors.

Regulatory risk: Cryptocurrency regulation is still shrouded in uncertainty. The Securities and Exchange Commission has declared that some digital assets are securities, putting them within its jurisdiction and allowing it to regulate them.

Volatility: Volatility is the degree to which the price of an investment moves in either direction. A volatile investment is one that has a large price swing over a short period of time.
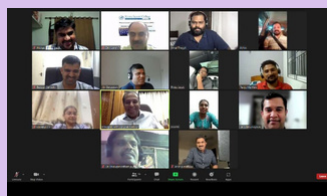
ALUMNI MEET

The Department of Computer Science have conducted Alumni meet virtually for various batches.
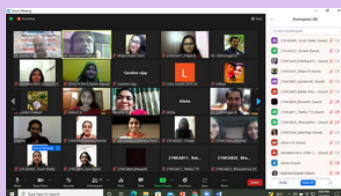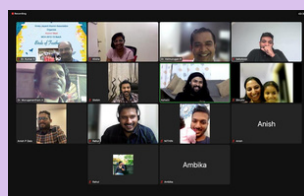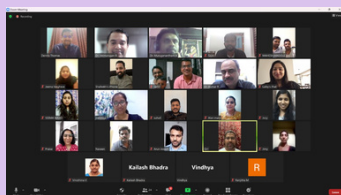

08/03/2022
Girl Students of all batches
(Womens Day)

12/03/2022
MCA 2004 - 2007
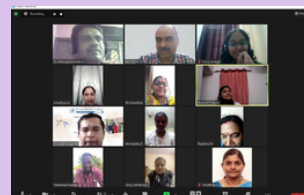

26/03/2022
MCA 2012-15

23/04/2022
MCA 2011-14

28/04/2022
Alumni Visit to Campus
(MCA 2009-12)

28/05/2022
M.Sc CS 2018-2020

Details of Alumni Meetings

1. **30/01/2022 ->Mitrotsava 2022 - Annual Alumni meet**
2. **26/02/2022 -> MCA 2013 - 2016**
3. **12/03/2022 -> MCA 2004 - 2007**
4. **08/03/2022 -> Girl Students of all the batches**
5. **26/03/2022 -> MCA 2012-15**
6. **23/04/2022 -> MCA 2011-14**
7. **28/04/2022 -> Alumni Visit to Campus (MCA 2009-12)**
8. **28/05/2022 -> M.Sc CS 2018-2020**

SHELLS 2022

NATIONAL INTER COLLEGIATE IT FEST

The 15th Edition of the National Intercollegiate IT fest of the Department of Computer Science (PG) was held on 25th May 2022. This fest aims at discovering students' inner potential. The staff coordinator for Shells 2022 was **Dr. Velmurugan R** and the student coordinators were **Mr. Prem Dhananjayan** (II Sem MCA) and **Ms. Yeshodha S** (II Sem MCA). The Participants were Post graduate Computer Science students from different colleges across India

Mrs. Shreya Srikanth Director of Planning and supply chain at the **Bay, Hudson's Bay company Bengaluru**, was the chief guest for the inauguration ceremony. Rev. Dr. Augustine George, the Principal, Kristu Jayanti College in his Presidential address spoke about the ethics and values of life as well as the importance of education in one's life. He also highlighted on how IT had a huge impact on today's youth. The Chief Guest appreciated to the college and highlighted Hudson's Bay company contribution towards technology. She also explained how retail and technology is connected to each other and highlighted upon supply chain issues, how e-commerce helped us during pandemic. She quoted that "Technology is the backbone for everything we are running today". The events for the fest include Web Designing, Coding, IT Manager, IT Quiz, Tech-talk and product launch. The events were conducted virtually through zoom in multiple rounds.

Pricipal Addressing Gathering

CHIEF GUEST, Mrs. Shreya Srikanth
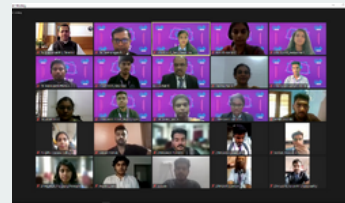
VALEDICTORY CEREMONY

The overall winners were **St. Joseph's College, Bangalore** and runners up were **NIT, Kurukshetra**. The star was shells 2022 was **Nirmal Scaria NIT, Kurukshetra**. The valedictory ceremony had Fr. Emmanuel P J Director, Kristu Jayanti College of Law, Director, Office of International and Domestic Relations as the chief guest to announce the winners of the fest. Dr. R Kumar appreciated the participants, organizers, Faculty coordinator and Student coordinator, Mr. James of MCAII Sem proposed the Vote of thanks.

MANOEUVRE 2021

INTRA COLLEGIATE FEST

Department of Computer Science (PG) organised its annual intra-collegiate IT fest-Manoeuvre on 19th November 2021. It is organised by the final year students of MCA and I & II year MCA and MSc (Computer Science) students were the participants. The theme for the fest is TOR with the tagline 'Deep web'. The Staff Coordinator was Dr. Ranjitha M and the Student Coordinators were Mr. Giteshwar Goswami and Ms. Jinu John (V Sem MCA). 7 teams of students of I year and II year MCA and MSc students were competing with each other. There were totally nine events to test the technological acumen of the participants. They are Web designing, Coding, IT quiz, App development, Photo and Videography, Short film making, Product launch, Treasure hunt and IT Manager. The prelims of the events were held during November 2 to 19.

Lighting the Lamp

The chief guest of the Inaugural ceremony was Mr. T K Noushad, CEO & Business Development Consultant, Ambeiter. Technobytes the newsletter of the department was released by the chief guest. Mr. Noushad spoke about the different aspects of career opportunities in IT. He encouraged the students to learn different domains in order to know their expertise. He listed the benefits of learning upcoming trends with online courses. The final rounds of the events happened after the inauguration.

After the competitions are over, the Valedictory Ceremony started with Fr. Joshy, faculty coordinator for the English Department as the chief guest. The Overall champions and the Runner up teams were announced. All the winners of the events were honoured with prizes and certificates.

Number of participants: 137

OVERALL CHAMPIONS (TECH PHANTOMS)

National Faculty Development Programme (FDP)

Information Retrieval and its Research Trends

The Department of Computer Science [PG] had the 7 day National FDP on from June 3 – 10, 2022. The programme is specially designed to appraise the participants with the nuances of the changes in the technology as expected and to give clear insight into the rising solutions for the current scenario research problems.

Technical Session I started by Dr. Samiya Khan, Post-Doctoral Research Fellow, University of Wolverhampton, United Kingdom on Edge Computing Architectures for Data-Intensive Applications. She discussed on various topics related to Edge Computing, including the Edge Ecosystem, the various pros and cons of Edge Computing, examples and different use cases. On day 2, Research Prospects on Gait Analysis were discussed in detail by Dr. M Pushpa Rani, Professor & Head, Department of Computer Science, Director – Center for Artificial Intelligence, Mother Teresa Women's University Kodaikanal, Tamilnadu. Next day the Advanced Face Recognition Technology and its challenges were discussed by Dr. Pramod Kumar Pal, Professor & Head, Dept. of Computer Science & Engineering, Bengal College of Engineering and Technology, Kolkata, West Bengal.
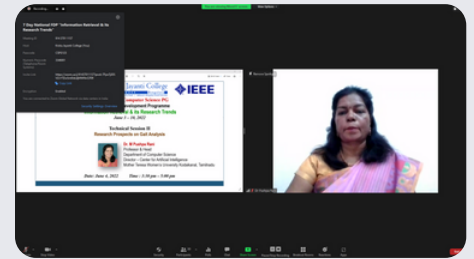
The day 4 of FDP had Dr. Ambika P, Expert Data Scientist, Impact Analytics, Bengaluru, Karnataka as resource person and madam explained MLOps, how MLOps is different from DevOps, the Typical ML Lifecycle, Components of MLOps, Storage, Transformation, ML Operations and the different stages of ML. The Day 5 included the Query Expansion Techniques for Monolingual and Cross Lingual Information Retrieval with different real time examples by Dr. Rajendra Prasath, Associate Professor, Indian Institute of Information Technology (IIIT) Sri City, Chittoor, Andhra Pradesh. The NLP, the components of NLP, POS Tagging, Text Pre-processing, IR and the different models like the Conceptual model, Boolean model etc., and many more was explained by Dr. Aruna Devi K, Associate Professor, Department of Computer Science PG, Kristu Jayanti College. On the final day of FDP, Dr. Kumar R, Professor & Head, Department of Computer Science PG, Kristu Jayanti College (Autonomous) shared knowledge on Real time research applications of Information Retrieval. There were 65 participants benefited which include Faculty Members, Industry Professionals, Research Scholars and Post Graduate Students of Computer Science whose area of interest is Data Science and its related domains.

TECH TALK SESSION

INTRODUCTION TO IOT AND ITS APPLICATIONS

A webinar on "Introduction to IOT and IOT Applications" was hosted by the Department of Computer [PG] in association with the IEEE Bangalore Section. The session started with silent prayer continued with the MC of the session Ms. Yeshodha S welcoming the resource person of the day **Mr. ShriKrishna**, Team lead, Firmware development and Training at Centre for Development of Advanced Computing (C-DAC), Bengaluru, **Mr. Pramod Kumar P**, Manager IEEE, Dr Kumar R Head, Department of Computer Science [PG], Prof. Sevuga Pandian Head, Department of Computer Science [UG], faculty members of the Computer Science Department and students. The workshop was organized by Dr Velmurugan R, Branch Counsellor of IEEE Bangalore section of the college.

The speaker started the session explaining the introduction of IoT, how it can applied in various fields. Students could understand how IoT was embedded with sensors, Software and other technologies for connecting with other devices. The resource person continued explaining what are the requirements of IoT such as actuators, Gateways, Local and global Connectivity and what are the platforms where IoT can be implemented. The speaker gave a brief information on Request-Response model such as client, server and resources. Along with the examples of protocols based on Request-Response such as HTTP, COAP.

The participants were addressed by Mr. Pramod Kumar P, Manager IEEE of how the IoT was emerging and the importance of it. The webinar was completely interactive and informative and it was concluded by a Q&A session in which the students were able to clarify their doubts, making it more engaging.

**Number of beneficiaries: 680 students**

Birth Anniversary of Swami Vivekananda

The Birth Anniversary of Swami Vivekananda January 12 is commemorated as National Youth Day and on the occasion the Department of Computer Science PG organized a digital poster making competition. Dr. Muruganantham Alagiah started the celebration by briefing about the importance of the day. The theme given to the participants for the poster making was "Swami Vivekananda-My Inspiration". 32 students participated by preparing digital posters, portraying the ideas and goals that Swami Vivekananda devised for the youth. The winners of the poster making competition were declared by Dr. Kumar. R, Head of the Department, Department of Computer Science (PG). The winners of the event were Mr. Arjun G K [21MCAA07] and Ms. Beryl Sandrina [21MCAA10]. The students gained the knowledge about Vivekananda's life history and his philosophy and also enhanced their poster designing skill.
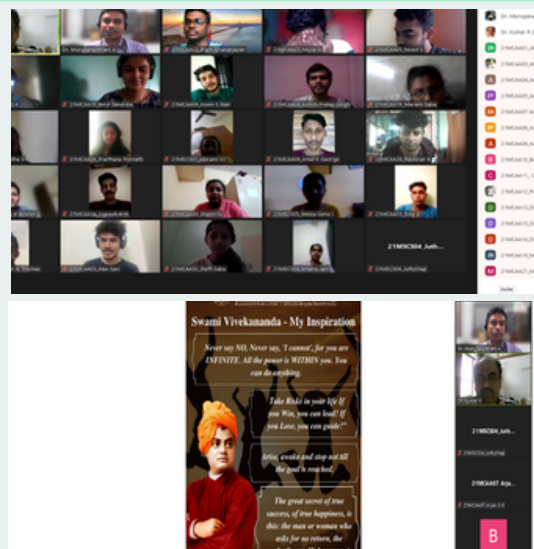
INTERNATIONAL WOMEN'S DAY

TECHNICAL SESSION ON AI AND IT'S ENDLESS POSSIBILITIES
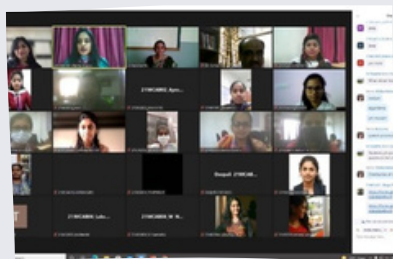
The International Women's Day Technical session was held on **8th March 2022**, on the topic "AI and its endless possibilities".

Every year on March 8th, "International Women's Day" is marked to honor women. To commemorate the occasion, the Department of Computer Science[PG]hosted a technical session exclusively for girls

Ms. Shikha Maheshwari is the technical solutions architect at IBM digital technology labs ,tech evangelist in cloud, AI and blockchain .She explained on AI and its services, related IBM Tools and also gave a Hands-on-session on AI Services like Watson, Healthcare etc. The participants gained an understanding on AI and its various uses.

The speakers went through the questions of participants and clarified all the doubts in an effective manner by giving more insights to the students and made the session more interesting.

WEBINAR ON EMERGING TECHNOLOGIES BY ACM-W

The webinar on emerging technologies by ACM-W was held on **28th January 2022**. To help students understand the emerging technologies and different skills required in the job market.

The session was started by a welcome speech given by Ms. Beryl Sandrina to welcome Dr. Kumar R, Dr. Ranjitha, the Resource person and all the participants gathered in the session. The speaker of the session **Ms. Latha Raj** is the business consultant and global technical eminence leader, IBM India software Labs, she started the session by briefly explain what emerging technologies mean. She discussed the top trends followed in 2022 within the IT industry which are essential for the current pandemic and beyond era. Ms. Latha emphasized on the importance of acquiring deep skills and also mastering human centric skills for being successful within the industry and also discussed the emerging job roles published by the National Skills Council. The Q/A round was also conducted where all the participants could ask their queries and doubts to the speaker. The session ended with the vote of thanks presented by Ms. Yeshodha S.

Number of beneficiaries: 79 students

Tech Talk Series on "Essence of Artificial Intelligence"

The National Science Day was celebrated by the Department of Computer Science PG by organizing Tech Talk Series and a workshop.

The Chief Guest, Mr. Syed Yasin is the chief scientist in SyfertSoft Founder/Director at BookKle Innovations Pvt Ltd , Bengaluru. He started the session by giving a brief summary on Mathematics, Trigonometry and Algorithms. He explained how Trigonometry is used for autonomous systems. He also gave a demo on Artificial Intelligence algorithms that identify the static images.
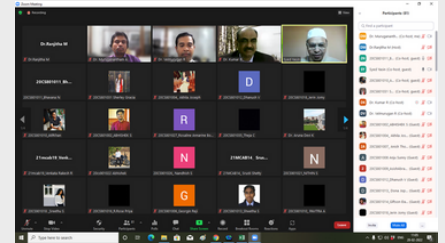
He also quoted that "Data is like Fuel and AI is like Engine" and made the participants to understand the concepts easily. Mr. Syed also gave a brief note on the AI tools that are used for creative writing. During the interactions the resource person clarified the questions of participants in an effective manner by giving more examples that made the session more interesting.

Number of beneficiaries:100 students

Workshop on Web Designing and Web Hosting

The second session of the National Science Day was the workshop conducted by Ms. Sherly Gracia and Mr. Atif Khan of II year MCA. Ms. Sherly started the session by giving a brief summary on HTML and CSS. She also listed the steps in designing the webpage by demonstrating Marina Fashion Boutique as an example web page. She also gave a brief description on different Google Fonts that can be used to make the page more attractive. Then Mr. Atif Khan continued the session by presenting the information on how to host a website and the ways to use bootstrap. These sessions were very much useful to all the students since it is practical. The participants also raised the questions regarding the effective design of the web page and their doubts were made clear by the experts of the session.
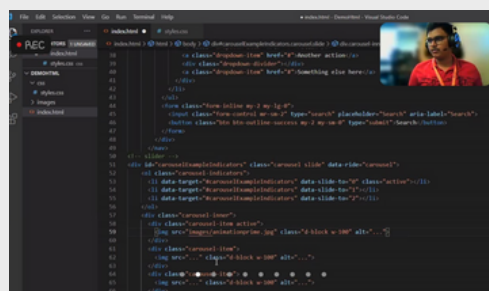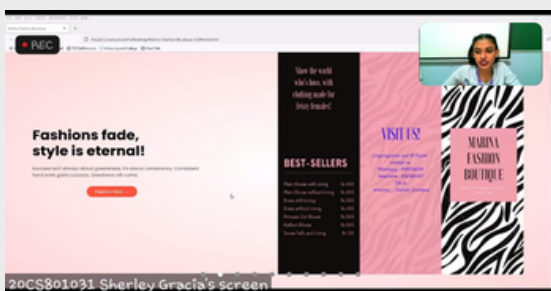
Number of beneficiaries:100 students

STUDENT ACHIEVEMENTS

- **16 Students participated in the National / International Webinars during January to May 2022**
- **No. of Online Courses Completed : 107**
- **No. of Online Course Certifications :133**

INDUSTRIAL VISIT

Place of Visit: Indian Space Research Organization (ISRO)
Date of Visit: 6th April 2022
Objective: To Learn how satellites are launched and the working science behind it.

The Industrial visit to ISRO was organized by Kristu Jayanti College, Department of Computer Science [PG]. There were total of 67 students of I Year MCA & MSC alongside with 4 Faculty Members. The visit to ISRO helped students to gain knowledge about the working of satellites. At the beginning the students were taken to the conference hall, where they shown the working of the satellites, types of satellites and components of the satellite. The students were taken to the environment where the real satellite was being building. After that they were taken to the museum where they were shown the real physical components. At the end the students were given opportunity for Q&A Session. Overall, the visit helped students to gain knowledge abut the satellite and rockets.

COMPUTER LITERACY PROGRAMME

WEBINAR ON ' *NURTURING A CYBER SAFE WORLD* '

The Department of Computer Science [PG] organized a webinar on Nurturing Cyber Safe world on **9th February 2022** for the students of Euro School Whitefield, to provide knowledge on the cybercrimes and ways to stay protected on the Internet.

The webinar was officially Inaugurated by the teachers of Euro School, and Chief Guest was Dr. Kumar R, Head of the Department Computer Science [PG], Kristu Jayanti College (Autonomous), the webinar was started by Dr. Ranjitha M, Faculty, Department Computer Science [PG], Kristu Jayanti College (Autonomous), followed by Mr. Atif Khan, Student, 4th Semester MCA.
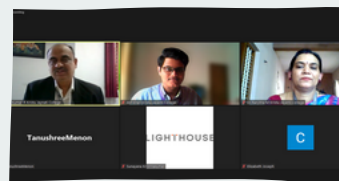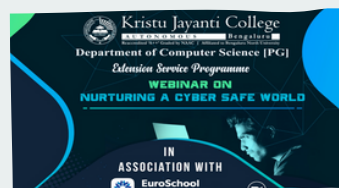
The seminar had informative content delivered on the topic Nurturing a cyber-safe world. Topics such as Types of Cyber Crimes, Overcoming Cyber Crimes, how hacking works, different types of hackers, why hackers hack and many such topics were covered.

The Students of Euro School were interactive and had asked set of question and most of the questions were answered. The webinar was concluded with a vote of thanks from the teachers of Euro School Whitefield.

**NUMBER OF BENEFICIARIES:
595 STUDENTS**

SODACODE 2022 HACKERS' BOOTCAMP 01

The SODACODE 2022 Hacker's Bootcamp 01, conducted on 21st March was hosted by the Computer Science Department for the skill training of UG and PG students, and to give an orientation about SODACODE Hackathon. The inaugural session started by Dr. 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 would be beneficial to the students and the organization, and the ways of creating innumerous 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 Inaguration, all the participants were request to assemble 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.

NUMBER OF BENEFICIARIES: 131 STUDENTS

FACULTY EMPOWERMENT

PARTICIPATION

- All the faculty members participated in the National / International seminars and workshops during January to May 2022. Total number of participation: 22
- **Online Course Completion**
  - **Dr. Vinothina V** completed
    1. Statistics for Data Science and Business Analysis offered by Udemy [26/02/2022]
    2. Introduction to Soft Computing offered by Swayam – NPTEL [Jan 2022- March 2022]
    3. Getting Started with Data Analytics on AWS offered by Amazon AWS [28/04/2022]
  - **Dr. Aruna Devi K** completed
    1. Introduction to Machine Learning with scikit-learn offered by Dataschool.com [May 2022]

RESEARCH CONTRIBUTION

PUBLICATIONS

- **Dr. Aruna Devi K** published research article on Performance analysis of Pneumonia using Convolutional Neural Networks in NATURAL VOLATILES & ESSENTIAL OILS November 2021, ISSN: 2148-9637. Vol. 8(5): PP 2161 - 2169 indexed in **Scopus**
- **Dr. Ranjitha M** published research article on Comparative Analysis on English Grammar and Spelling Correction using Artificial Intelligence Techniques in Indian Journal of Natural Sciences, February / 2022, ISSN: 0976 – 0997 indexed in **Web of Science**

PAPER PRESENTATION

- **Dr. Vinothina V** presented a paper titled "A Study on Video surveillance System using Deep Learning Methods" in the International Conference on Ubiquitous computing and Intelligent Information Systems on 10/03/2022 & 11/03/2022

Membership in Boards

- **Dr. Kumar R - Board of Studies** (BoS), Computer Science, Indian Academy Degree College, Bangalore.
- **Dr. Velmurugan R** - Board of Studies (BoS), Computer Science (PG), Kongu Arts and Science College (Autonomous), Erode, Tamilnadu.
- **Dr. Aruna Devi K**
  - Reviewer in Defence Journal, DRDO (Scopus)
  - Reviewer in IEEE Sponsored Conference ICDSIS-2022
  - IEEE Sponsored Conference ICDSIS - 2022, Malnad College of Engineering, Hassan
- **Dr. Vinothina V**
  - International Conference on Computing Science, Communication and Security (COMS2)
  - Reviewer in International Conference on Distributed Computing and Electrical Circuits and Electronics ICDCECE-2022 in association IEEE Bangalore Section and IEEE Information Theory Society Bangalore Chapter
  - Reviewer in IEEE Sponsored Conference ICDSIS-2022

Patent / Copyright Details

- **Dr. Aruna Devi K** registered copyright on "AI and IoT driven Intelligent Sensor based Precision Agriculture System for Illiterate Farmers" Reg. No. L-110096/2022 [03/01/2022]
- **Dr. Ranjitha M** published Indian patent on "Design System of Automated Microclimate Prediction System Using CNN and Internet of Things (IoT)" No. 202141059523 [28/01/2022]

FACULTY ACHIVEMENTS

Faculty Members as Resource Persons

Dr. Kumar R

- Chairperson for the International Conference on Futuristic Computing - Trends and Challenges (ICFCTC@2022), organized by the Department of Computer Science, Mount Carmel College, (Autonomous), Bengaluru [3/2/2022]
- Technical Session on Real time research applications of Information Retrieval, National FDP on Information Retrieval & its Research Trends organized by Department of Computer Science PG, Kristu Jayanti College (Autonomous), Bengaluru [10/06/2022]
- External Chairperson for Faculty Seminar Series, Presidency College(Autonomous), Bengaluru [May 2022]

Dr. Aruna Devi K

- Technical Talk on Developing e-content - National FDP on Integrated Learning through Blended Approach organized by Department of Management, Kristu Jayanti College (Autonomous), Bengaluru [04/12/2021]
- Expert Talk on Brain Computer Interface organized by Department of Computer Science, Mount Carmel College, Bengaluru [20/01/2022]
- Webinar on Natural Language Processing organised by Department of Computer Science, V.H.N.Senthikumara Nadar College, Virudhunagar [14/03/2022]
- Chairperson for the Paper Presentation during International Conference INCCI organised by Department of Computer Science, Kristu Jayanti College (Autonomous), Bengaluru [15/03/2022]
- Technical Session on Business Use Cases of NLP and Text Analytics, National FDP on Information Retrieval & its Research Trends organised by Department of Computer Science PG, Kristu Jayanti College (Autonomous), Bengaluru [09/06/2022]

Dr. Ranjitha M

- Keynote Session on Medical Image Analysis during International Conference INCCI organized by Department of Computer Science, Kristu Jayanti College (Autonomous), Bengaluru [16/03/2022]
- Resource Person for the Extension Service Program for the Euro School, Whitefield, Bengaluru

Dr. Vinothina V

- Subject Matter Expert in DAC meeting conducted by Marwadi University, Gujarat [07/04/2022]
- Chairperson for the Paper Presentation during International Conference INCCI organized by Department of Computer Science, Kristu Jayanti College (Autonomous), Bengaluru [15/03/2022]

Dr. Velmurugan R

- Workshop on Advanced Programming Practices organized by Department of Life Science, Kristu Jayanti College (Autonomous), Bengaluru [16/03/2022]

Dr. Muruganantham A

- Workshop on Advanced Programming Practices organized by Department of Life Science, Kristu Jayanti College (Autonomous), Bengaluru [17/03/2022]

PLACEMENT DETAILS 2020-22

C O N G R A T U L A T I O N S

Ankita Das — Anjali — Rosepriya — Akhila Joseph — Anusha — Dhanush V

Abhishek S — Jainy James — Sathish V — Shashanka Rekha R — Akhil Varghese — Anjana Mary Mathew — Anju Sunny — Anto Antony — Aslam Shanavasam

Celesti Vinalini V — Dona Joprakash — Edwin E Perera — Georgin Reji — Jagat Joy — Jeevika G — Jerin Jomy — Jibin James — Kripa Hepsy Raj — Mohammed Aamir Sharieff — Nandhish S

Robin Philip — Shafayath Ulla Khan — Shobraj Murgod — Shwetha S — Sreesha K — Varshitha C — Abhash Magar — Abhishek S — Adarsh MM — Bony Tom Philip

Romy Benny — Sen G Padiyara — Sumanth S — Akhila Thomas — Aneesh Mathew — Jinu John — Nikhil

Prathyash Ponnachan Baby — Praveena S — Punith CR — Solomon Abhishek — Theja C — Andriya Augustine — Angwyn Rodrigues — Ayush Dhanraj Bhoga — Bhavana N — Hepsibah T

Jeevan Jose — Nandini K — Neha Shinde Babu Sudershan — Pereira Blinsia — Rosaline Annarine Boother — Sukanya Chowdhury — Ajit Kumar

Ajith — Akshay — Naveen Kumar — Nikitha S — Rahul Manoj — Shiju V — Sneha Priya K — Yashwanth R — Aletha K — Jerin Joji
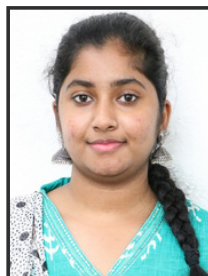
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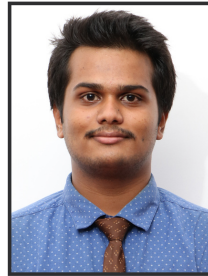

Staff Editor

Dr. Aruna Devi K
Professor

Student Editors

Ms. Neha K
II SEM, MCA, A

Mr. Arjun G K
II SEM, MCA, A

Current Event

10th International Conference on 'Current Trends in Advanced Computing' (ICCTAC) 2022 - June 16 & 17, 2022