Shell Newsletter

Department of Computer Science & Engineering

Volume 8 | Issue 2 | Dec. 2023

Vision and Mission of the Institute

Vision

- To be one of the premier institutes of Engineering and Management Education in the country

Mission

- To provide Engineering and Management Education that meets the needs of human resources in the country
- To develop leadership qualities, team spirit and concern for the environment in students

Objectives

- To achieve educational goals as stated in the vision through the mission statements which depicts the distinctive characteristics of the Institution
- To make the teaching-learning process an enjoyable pursuit for the students and teachers

Vision and Mission of the Department

Vision

- To be a premier department for education in Computer Science and Engineering in the state of Karnataka, molding students into professional engineers

Mission

- To provide teaching/ learning facilities in Computer Science and Engineering better than prescribed by University for easy adaptation to industry and higher learning
- Provide a platform for self-learning to meet the challenges of changing technology and inculcate team spirit and leadership qualities to succeed in a professional career
- Comprehend the societal needs and environmental concerns in the field of Computer Science

Dedicated to

John McCarthy was a Professor of Computer Science at Stanford University. He was interested in developing systems that exhibited human-level intelligence since 1948 and coined the term "Artificial Intelligence" in 1955, John invented the LISP programming language in 1958, developed the concept of time-sharing. John's key contributions to the field of Artificial Intelligence were in Commonsense Reasoning which he pioneered and Nonmonotonic Reasoning. John paved the way for the some of the world's transformative technologies: programming languages, the Internet, the web, and robots

Inside Shell

Vidyayāmruthamashnuthe

B. N. M. Institute of Technology

An Autonomous Institution under VTU.

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From Editor's Desk

Dear Readers,

"The purpose of education is not only to impart knowledge but to ignite ambition, empowering individuals to strive for greatness and leave a lasting impact on the world." -Nelson Mandela

Dear Readers, with immense joy and excitement, we present to you the latest edition of our newsletter from the Computer Science and Engineering Department – 'SHELL Volume 8 Issue 2'! This edition is a testament to the talent, creativity, and vibrant spirit that defines our institution.

Our newsletter reflects the collective aspirations and diverse perspectives of our student body and faculty. Through prose, poetry, photography, and art, this magazine captures the essence of our community—its achievements, dreams, and the journey we all share.

The editorial team extends its heartfelt gratitude to everyone who contributed their work, ideas, and support to bring this publication to life. A special thank you to our faculty mentors, contributors, and the design team for their unwavering dedication.

Aryan Patnaik
1BG21CS014
VI CSE A

Department Profile

The Department of Computer Science & Engineering started in 2001 with an intake of 60 students and the present intake is 180. The Department is renowned for imparting quality education with well-qualified and dedicated faculty members, who are experts in various domains of Computer Science &Engineering and strive for an exceptional career growth for the students. The Department offers undergraduate and postgraduate programs in Computer Science & Engineering. A well-equipped Research & Development (R&D) Center, affiliated to VTU, has been set up to cater to the needs of the research scholars, as they conduct cutting-edge research towards doctoral degrees. The Teaching-learning process put in place by the Department is well defined to help students explore the trending technologies via Skill Development Programs organized by the industry-institute Interaction Cell. Students are also encouraged to improve their performances in the University examinations through Performance Enhancement Classes. The Innovative Project Labs (IPL) of the R&D Center encourages and equips the faculty and students to uncover innovative ideas, which are also funded through the Innovation & Entrepreneurship Development Cell

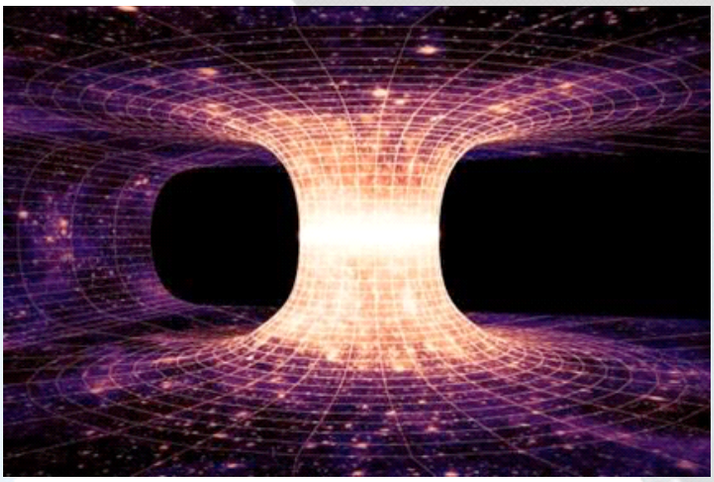
Department overview

Message From The HOD

Welcome to the Department of Computer Science and Engineering, BNMIT, Bangalore. The Department is well-supported by seasoned faculty members with an average experience of 10 years. It also boasts of a state of- the-art infrastructure facility that supports and encourages students to acquire knowledge and gain practical experience. During the course, students mould their careers, polish their technical skills and inculcate team spirit with exceptional oral and written communication skills. The Department also extends financial and technical support to the students to participate in competitions and hackathons at state, national and international levels. The faculty members are encouraged to acquire higher degrees and conduct research in the areas that benefit the society. They are also supported in conducting and participating in workshops, symposium and conferences at national and international levels. Last but not the least, they are motivated to adopt innovative teaching methodologies and best practices to make classroom a pursuit of learning.

Dr. Chayadevi M L

IT'S ALL 'BOUT SPACE!!!



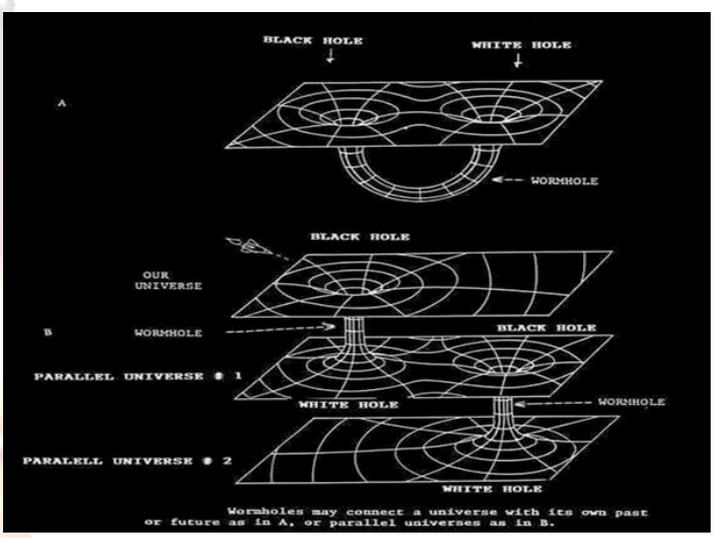
For ages, space scientists have been researching upon existence of black holes, white holes and worm holes. Space holds many secrets, and upon discovering a very few of them, leaves our mind pondering with questions. Let's take sometime to know what exactly these theories and facts lead us to!

The picture represents what a worm hole would look if it existed. That's right! The wormhole theory postulates that a theoretical passage through space-time could create shortcuts for long journeys across the universe.

Now the question arises, are wormholes theoretically possible?

A wormhole is thought to be essentially a tunnel from one place in space to another. When you have a massive object in spacetime, it basically creates a curvature of the spacetime in the nearby region.

As you get more and more mass, we expect that curvature becomes extreme. We think such objects occur in the universe, and they are what we call a black hole, where light cannot escape due to this extreme curvature of space

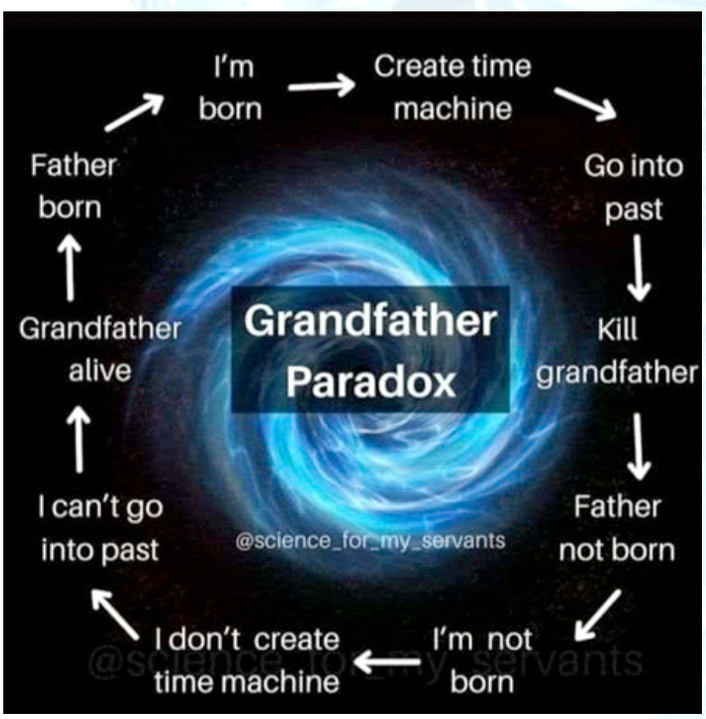


time. As described, the entrance would be a sphere, like the surface of a planet.

If you look into it, you would see light coming in from the other side. The wormhole tunnel could be of any length, and while traveling down the tunnel, you would see distorted views of the region of the universe you came from and the region you were traveling to. Sounds crazy right?! Well, it may be the very solution for the existence of time travelling and time machine. But here is another fact that says once entered through a worm hole you may visit the past or the future timeline, but you won't be able to ever come back to your original timeline. Now that's sad. Time travel, hearing this word and any kid, teen and even adults, will imagine Doraemon's Time machine! The fascinating and cool ideas we would get imagining that one-day time travel would be possible and we would get to see the Big Bang, the dinosaurs, the stone age and also travel into the future to just take a peek at our question papers!!! Well, since worm holes are just hypothetical, we might need to keep these ideas for hold for a little longer until one day it's actually been proved to exist.

Nishit R Kirani
1BG22CS099
VI CSE B

THE GRANDFATHER PARADOX



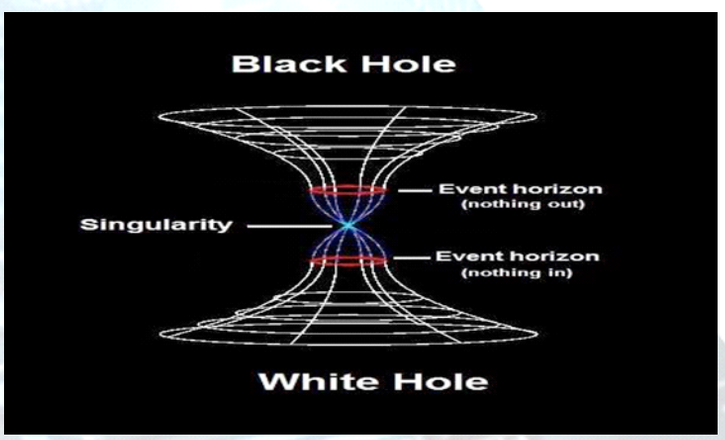
Hmm… now this is an interesting one. The Grandfather Paradox is related to time travel and what happens when changes the past. Now consider this image here. Few years from now the time machine is invented and you visit back in time when your grandfather lived. Now this is the timeline where your grandparents have just got married. Now this should result in your father not being born and as a result you aren't born either. But when you aren't born to travel back in time and kill your grandfather, your grandfather is alive? This paradox has had many follow up facts and theories. Some say at that instant we are creating another timeline where we don't

PREDESTINATION PARADOX –

A Predestination Paradox refers to a phenomenon in which a person traveling back in time becomes part of past events, and may even have caused the initial event that caused that person to travel back in time in the first place.

In this theoretical paradox of time travel, history is presented as being unalterable and predestined, with any attempts to change past events merely resulting in that event being fulfilled. Now, with respect to the above grandfather example, if you kill your grandfather, and yet you haven't been wiped off from existence, it means from the very 1st cycle you were a part of that timeline and that event was bound to happen!!

WHITE HOLES



We know the existence of black holes, and how it aborbs all the energy and matter from a celestial body. No one knows what happen when one falls into the black hole. The opposite to it is the white hole. A white hole represents a theoretical phenomenon where matter and light would emerge from, rather than be pulled into, a certain area in space.

While black holes are tough to spot due to their lack of emissions, white holes should be bright fountains of radiation and, theoretically at least, should be difficult to unidentitfy. Yet, so far, astronomers haven't been able to find any.

Now if the existence of a white hole is proved, it will also prove the existence of worm holes, as matter goes in through the black hole, but cannot travel back, similar with white holes, where matter can only leave the space but not travel back. But until its proved… see you crater, space invader!!!

Ankita V Joshi
1BG22CS021
III CSE A

Exploring the Future of Blockchain Technology

Introduction

In recent years, blockchain technology has emerged as one of the most transformative innovations across various industries. Originally conceived as the underlying technology for cryptocurrencies like Bitcoin, blockchain has evolved far beyond its initial use case. Today, it stands poised to revolutionize sectors ranging from finance and healthcare to supply chain management and beyond.

Understanding Blockchain

At its core, blockchain is a decentralized ledger technology. Unlike traditional centralized databases, where information is stored on a single server or a group of servers controlled by a single entity, blockchain distributes data across a network of computers (nodes). Each node maintains a copy of the entire blockchain, ensuring transparency, security, and immutability.

Key Features and Benefits

1. Transparency and Security: Transactions recorded on a blockchain are visible to all participants in real-time, fostering transparency. The cryptographic nature of blockchain ensures that once data is recorded, it cannot be altered retroactively without altering all subsequent blocks, providing robust security.

2. Decentralization: By eliminating the need for a central authority, blockchain reduces the risk of data manipulation and enhances trust among participants.

3. Smart Contracts: These self-executing contracts with the terms of the agreement directly written into code enable automated transactions and are poised to streamline numerous business processes.

Applications Across Industries

1. Financial Services: Blockchain has the potential to revolutionize payment processing, cross-border transactions, and trade settlements by reducing costs and increasing efficiency.

2. Supply Chain Management: By providing an immutable record of goods' journey from manufacturer to consumer, blockchain can enhance transparency, traceability, and accountability in supply chains.

3. Healthcare: Blockchain can securely manage medical records, ensuring data integrity and facilitating interoperability among healthcare providers.

4. Real Estate: Blockchain-based smart contracts can automate property transactions, reducing paperwork and minimizing fraud.

Challenges and Considerations

While blockchain holds immense promise, challenges remain. Scalability, energy consumption, regulatory uncertainties, and interoperability issues need to be addressed for widespread adoption.

Looking Ahead

As blockchain technology continues to evolve, its impact on society will likely grow. Innovators and businesses are exploring new applications and refining existing ones, aiming to unlock its full potential.

In conclusion, blockchain represents more than just a technological advancement; it embodies a paradigm shift towards decentralization, transparency, and efficiency. As we navigate this evolving landscape, staying informed and adaptable will be key to harnessing blockchain's transformative power.

Thank you for joining us on this journey into the future of blockchain technology. Stay tuned for more updates and insights as we continue to explore this fascinating field.

Aryan Patnaik
1BG21CS014
VI CSE A

Advances in Generative AI- Techniques, Architectures, and Multidisciplinary Applications

Introduction

Augmented Reality (AR) has rapidly evolved from a futuristic concept to a transformative technology impacting various sectors. Unlike Virtual Reality (VR), which immerses users in a completely digital environment, AR overlays digital information onto the real world, enhancing the user's perception and interaction with their surroundings. This report explores the development, applications, and implications of AR technology, highlighting its potential to revolutionize industries ranging from gaming and education to healthcare and retail.

1. Understanding Augmented Reality

AR blends digital elements with the physical world through the use of devices like smartphones, tablets, and AR glasses. These devices use sensors, cameras, and advanced algorithms to detect real world environments and project relevant digital content. The technology can display 3D models, animations, text, and other digital information in real-time, creating an enriched experience that enhances our interaction with the physical world.

2. Historical Development

The concept of AR has been around since the 1960s, but it gained significant attention in the early 21st century with the advent of smartphones equipped with cameras and powerful processors. Early examples of AR included simple overlays on live camera feeds, but technological advancements have enabled more sophisticated applications, such as interactive 3D objects and real-time data visualization.

3. Applications of Augmented Reality

AR's versatility has led to its adoption across various industries:

- **Gaming:** One of the most popular uses of AR is in gaming. Games like Pokémon GO brought AR to the mainstream, allowing players to interact with digital creatures in real-world settings. AR games create immersive experiences that blend physical and digital play.
- **Education:** AR offers innovative ways to engage students and enhance learning experiences. For instance, AR can bring historical events to life, visualize complex scientific concepts, or provide interactive anatomy lessons. This technology fosters interactive learning, making abstract concepts more tangible and understandable.
- **Healthcare:** In healthcare, AR is used for training, diagnostics, and treatment planning. Surgeons can use AR for detailed visualization of anatomy during procedures, while medical students benefit from simulated training environments. AR also assists in patient education,

helping individuals understand their conditions and treatments.

• **Retail and Marketing:** Retailers use AR to enhance the shopping experience, allowing customers to visualize products in their own space before purchasing. For example, furniture stores offer AR apps that let users see how a piece would look in their home. In marketing, AR creates engaging and interactive advertisements that capture consumer attention.

• **Manufacturing and Maintenance:** AR aids in complex manufacturing processes by providing workers with real-time data, instructions, and visualizations. It is also used for equipment maintenance, where technicians can access interactive manuals and overlay information directly onto machinery.

4. Technological Components

Key technologies enabling AR include:

• **Hardware:** AR hardware includes smartphones, tablets, AR glasses, and headsets. These devices come equipped with sensors like cameras, accelerometers, and gyroscopes that track the user's environment and movements.

• **Software:** AR applications rely on software for tracking, rendering, and displaying digital content. This includes computer vision algorithms for recognizing objects and environments, as well as 3D modeling and graphics rendering.

• **AR Platforms and SDKs**: Several platforms and software development kits (SDKs) facilitate AR development, such as Apple's ARKit, Google's ARCore, and Microsoft's HoloLens. These tools provide developers with resources to create AR experiences tailored to specific devices and use cases.

5. Challenges and Considerations

Despite its potential, AR faces several challenges:

• Technical Limitations: Current AR technology may struggle with precise tracking, especially in low-light conditions or complex environments. Battery life and processing power are also limiting factors, particularly for mobile devices.

• User Experience: Designing intuitive and seamless AR experiences is crucial. Poor interface design or overwhelming digital content can detract from the experience and reduce user engagement.

• **Privacy and Security:** AR applications often require access to camera and location data, raising concerns about user privacy and data security. Developers must implement robust measures to protect user information and prevent misuse.

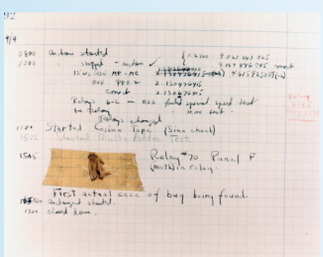
6. Future Prospects:

The future of AR looks promising, with continuous advancements in hardware, software, and artificial intelligence. The development of lightweight and comfortable AR glasses could make AR more accessible and convenient. Additionally, improvements in AI and machine learning could enhance AR's ability to understand and interact with the real world, creating more personalized and context-aware experiences.

As AR technology matures, it is expected to play a more integral role in daily life, offering new ways to interact with digital and physical worlds. Industries across the board are likely to see increased integration of AR, leading to new business models, enhanced customer experiences, and innovative solutions to complex problems.

Shrilakshmi R
1BG20CS101
VII CSE B

DID YOU KNOW THESE FACTS:



The First Computer Bug Was an Actual Bug: *In 1947, a moth was found stuck in a relay of Harvard's Mark II computer, making it the first recorded computer "bug."*

The first 1 GB hard drive was huge: *Introduced by IBM in 1980, the first 1 GB hard drive weighed over 500 pounds and cost $40,000.*

Wi-Fi was invented by accident: *The technology behind Wi-Fi was developed during experiments with black hole detection by an Australian scientist in 1992.*

Workshops conducted: AWS Workshop

Department of Computer Science and Engineering, BNMIT, Bengaluru had organized a one-day workshop on "Amazon Web Services (AWS)" on October 12th 2023 in association with Indian Society for Technical Education(ISTE) and Institution of Engineers(IEI). The resource person Mr. Mohammad Zubair, an expert in cloud computing and AWS services. The event aimed to provide participants with fundamental knowledge about AWS and hands-on experience in setting up and configuring Amazon EC2 instances for web hosting. The workshop covered essential topics such as the client-server model, creating EC2 instances, connecting to instances, and configuring servers for website hosting using both Windows and Linux instances. The students learned how to launch virtual servers in the AWS cloud, choosing different instance types and operating systems (Windows and Linux).

Two day's Hands-on workshop on "MongoDB & its Applications in NoSQL"

Department of Computer science & Engineering, BNMIT organized "Two day's Hands-on workshop on "MongoDB & its Applications in NoSQL" in association with Computer Society of India on 12th and 13th July 2023. The primary objective of the workshop was to familiarize students with MongoDB, a NoSQL database. Mr. Rakesh K Ramaswamy, a seasoned Corporate Trainer and Developers from Mysuru, along with his team of two members, were invited as the resource person for the workshop.

This hands-on experience with MongoDB and its applications proved to be enlightening for the participants, introducing them to new technological tools and techniques. The students expressed their positive feedback about the event. They found the workshop immensely useful and insightful, enhancing their understanding of MongoDB and its practical applications.

Technical talk on "Lagrange Points and Aditya L1

The IEEE Student Chapter at BNMIT, in collaboration with the Department of Computer Science and Engineering, hosted a landmark event on 11/12/2023, featuring a distinguished speaker, Dr R Ranganath, FIE Honorary Adjunct Professor, NIAS, ISc Campus, Bengaluru, Ex. Project Director, Space Docking Experiment Project (SPADEX), UR Rao Satellite Centre, ISRO, DOS. The session, titled "Lagrange Points and Aditya L1" explored the cosmic intricacies of gravitational equilibrium and the groundbreaking Aditya Ll solar mission.

Dr R Ranganath, an expert in the field, skillfully ñavigated the complexities of "Lagrange Points and Aditya L1" The audience was treated to an insightful journey, delving into the dynamics of celestial bodies and the significance of Aditya Ll in advancing solar science. The speaker's expertise added immense value to the event, leaving an indelible impact on the intellectual landscape of our academic community

Industrial Visit

One Day Industrial visit was conducted for the 5th sem and 3th sem students on 21th Dec 2023. The session was handled by Mr. Rajasehkar, KIA, Anantapur. Students were introduced with the stages of manufacturing. Mr Rajasekar also explained about the Autonomous Driving. It is the technology intensive as it converges dozens of precise, complex and cutting edge technology. The individual technologies are collectively called an advanced driver assistance system(ADAS).

Students of CSE 3rd Semester and 5th Semester along with faculty during Industrial Visit to KIA, Ananthpur

Students Achievements

- **Sameehana Manvi** (1BG20CS086, 7th sem) participated in "Meraki 2023," an International B-plan competition organized by the Center of Innovation, Entrepreneurship, and Technology (CIET) at Fortune Institute of International Business (FIIB) on 1st December 2023 in Delhi, and secured the 1st position.
- **Sangamesh R** (1BG20CS089, 7th sem) participated in "Meraki 2023," an International B-plan competition organized by the Center of Innovation, Entrepreneurship, and Technology (CIET) at Fortune Institute of International Business (FIIB) on 1st December 2023 in Delhi, and secured the 1st position.
- **Prajwal V** (1BG20CS070, 7th sem) participated in "Meraki 2023," an International B-plan competition organized by the Center of Innovation, Entrepreneurship, and Technology (CIET) at Fortune Institute of International Business (FIIB) on 1st December 2023 in Delhi, and secured the 1st position.
- **Rahul I V** (1BG20CS076, 7th sem) participated in "Meraki 2023," an International B-plan competition organized by the Center of Innovation, Entrepreneurship, and Technology (CIET) at Fortune Institute of International Business (FIIB) on 1st December 2023 in Delhi, and secured the 1st position.
- **Shruti Kedia** (1BG21CS084, 5th sem) participated in the 24 Hour National Level Hackathon "Hackzion V.1" at AMC Engineering College on 19th and 20th December 2023 and was a winner.
- **Shreya Sandesh** (1BG21CS082, 5th sem) participated in the 24 Hour National Level Hackathon "Hackzion V.1" at AMC Engineering College on 19th and 20th December 2023 and was a winner.
- **Swetha Sasidaran** (1BG21CS098, 5th sem) participated in the 24 Hour National Level Hackathon "Hackzion V.1" at AMC Engineering College on 19th and 20th December 2023 and was a winner.
- **Rohith B** (1BG21CS060, 5th sem) participated in "Hackathon'23" organized by Techbyheart on 3rd November 2023 and secured 2nd place.
- **Sathvik N Shendige** 1BG21CS076, **Sujay G Kaushik** 1BG21CS095 of 5th sem participated in "Hackathon'23" organized by Techbyheart on 3rd November 2023 and secured 2nd place.
- **Sumukha S Kashyap** 1BG21CS096, **Aneesh M** 1BG21CS010, **Nishchal U** 1BG21CS052, **Shreeram Kedlaya** 1BG21CS079, **Sakeena B I** 1BG21CS066 of 5th sem participated in "Hackathon'23" organized by Techbyheart on 3rd November 2023 and secured 3rd place.
- **Saakshi K** (1BG20CS081, 7th sem) participated in the VTU Badminton Women's tournament at BMSCE on 21st July 2023 and was a runner-up.
- **Kavya Basappa Bashetti** (1BG20CS048, 7th sem) passed the Certificate 'C' Examination in B Grade held in 2023, conducted by The Authority of Ministry of Defence, Govt of India, on 5th July 2023 in Goa.
- **Harshitha Seksaria** participated in the "Cognizant Digital Technoverse 2023" organized by Cognizant and won the 2nd prize.
- **Lasya Reddy M** participated in the "Cognizant Digital Technoverse 2023" organized by Cognizant and won the 2nd prize.
- **Sahana T P** 1BG22CS407, **Shashvathi S** 1BG22CS409 of 5th sem participated in a hackathon organized by Pantech eLearning on 3rd November 2023 and won in the category of designing a model that can withstand adversarial attacks in a simulated cybersecurity environment.
- **Rajathalaxmi** (1BG21CS056, 5th sem) participated in a hackathon organized by Pantech eLearning on 3rd November 2023 and won in the category of building an AI-powered system that automates aspects of incident responses, accelerating the identification and mitigation of security incidents.
- **Divij P** (1BG21CS030, 5th sem) participated in a hackathon organized by Pantech eLearning on 3rd November 2023 and won in the category of designing a sentiment analysis tool that can analyze social media posts and classify them as positive or neutral.

Faculty Achievements

- **Dr. Santosh Reddy P** and **Prof. Ashwini R Malipatil** developed a "Graphical User Interface to Automate Industrial Robotic Arm," funded with 1.5 Lakhs INR from Newgen IEDC and DST, spanning 6 months.
- **Dr. Anitha N** and **Dr. Geetha S** worked on an "Automated Lawn Mower," funded by Newgen IEDC and DST with an amount of 36,000 INR, running for 6 months.
- **Pallavi C.V** implemented a "Site Specific Soil Nutrient Management System," supported by Newgen IEDC and DST with 1.5 Lakhs INR, also for a 6-month duration.
- **Dr. Sheba Selvam** and **Priyanka Padki** collaborated on the project "Fake out" at Newgen IEDC, supported by DST, for a duration of 6 months in 2023.
- **Prof. Mona K,** Certificate of Excellence award for providing valuable guidance to the team working in Samsung PRISM Program on Worklet Image Processing Detection and Counting of potholes using video sequences (December 2022 to August 2023).
- **Prof. Mona K,** Excellence Award by Samsung for IoT based Samsung PRISM worklet (September 2023).
- **Prof. Mona K,** Awarded "Certificate of Appreciation" from Samsung R&D Institute India for successfully mentoring students to complete projects under Samsung PRISM program (December 2022 to August 2023).
- **Dr. Raghavendra C K** ,Awarded "Certificate of Appreciation" for mentoring students to win 2nd place in Cognizant Digital Nurture Technoverse-2023 Karnataka, leading to internship opportunities (October 23).

Book and Book Chapter Published by Faculty

- **Dr. Swetha M.D, Dr.ChaitraY. L,** et.al., "Text Detection and Recognition from the Scene Images Using RCNN and EasyOCR" in International Conference on Information and Communication Technology for Intelligent Systems (pp. 75-85). Singapore: Springer Nature Singapore, 2023, Aug.
- **Dr. Rajanishree M, Bhatta A. R, Sarveshvar M. R, Jain K** (2023). Handbook of Research on Advancements in AI and IoT Convergence Technologies (pp. 197-212). IGI Global. https://doi.org/10.4018/978-1-6684-6971-2.ch011, Sept 2023.

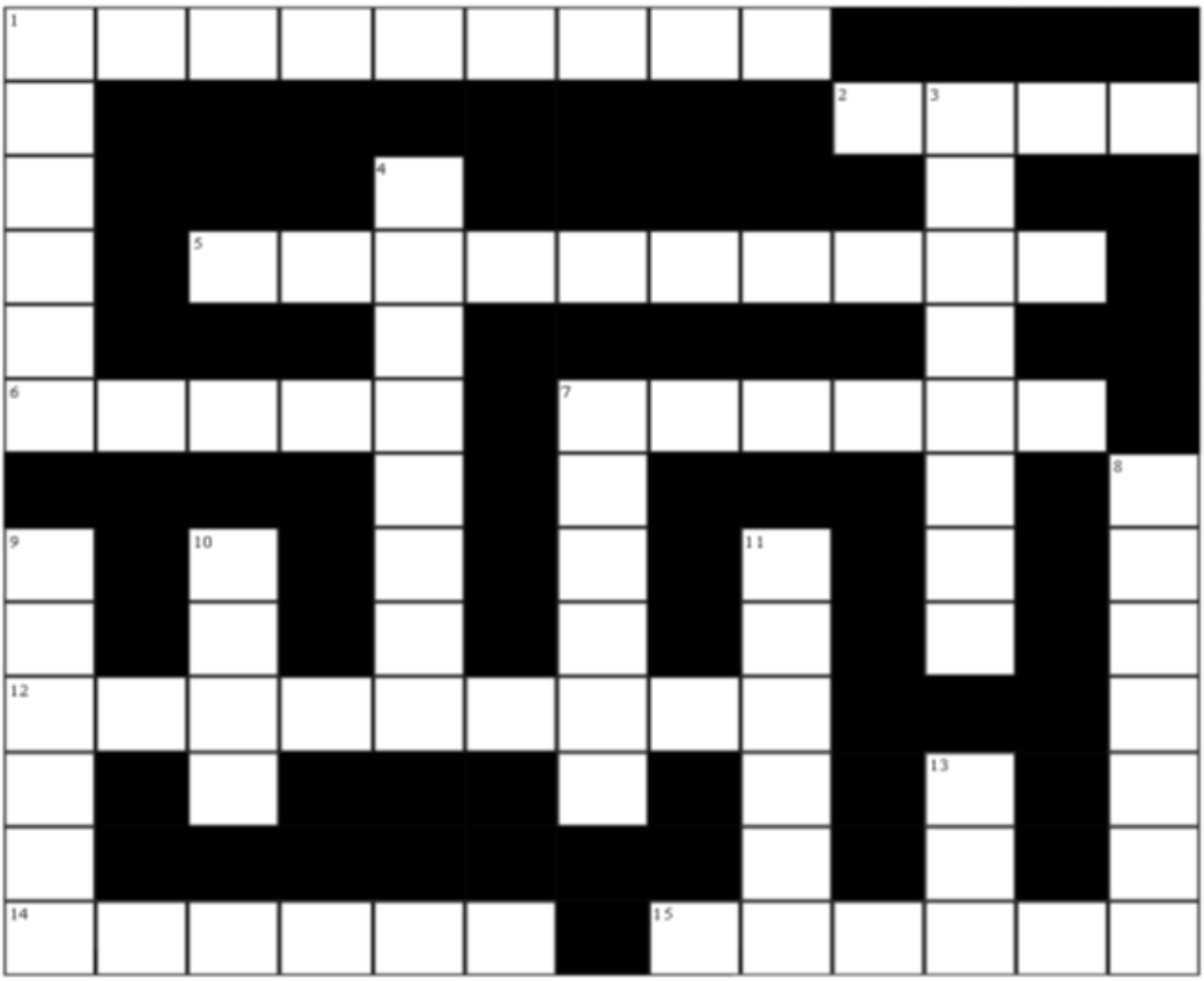
Journal Publications by faculty

- **S. Pratyaksha, Dr. M. L. Chayadevi,** Diagnosis and management of arrhythmia using machine learning, International Journal of Computer Applications in Technology (IJCAT), Vol. 72, No. 2, August 2023, ISSN: 0952-8091. (Scopus, Inderscience publications, published on 27th August 2023) (SCI – indexed)
- **Nandini Gowda Puttaswamy, Dr. Anitha N M,** An efficient reconfigurable workload balancing scheme for fog computing network using internet of things, International Journal of Electrical and Computer Engineering (IJECE), Vol.13, No.6, December 2023, pp. 6525~6537, ISSN: 2088-8708,
- **Rajesh Natarajan, Dr. Santosh Reddy P, Subash Chandra Bose, H.L. Gururaj, Francesco Flammini, Shanmugapriya Velmurugan,** Fault detection and state estimation in robotic automatic control using machine learning, Array, Volume 19, 2023 (Scopus-Q1, SCI) (September 2023)
- **Dr. Manjunatha S, Malini M. Patil, Dr. M. D. Swetha.** "Tampering Detection and Segmentation Model for Multimedia Forensic" International Journal of Advanced Computer Science and Applications 14, no. 9 (2023). DOI: 10.14569/IJACSA.2023.0140992, page no. 878-887, ISSN: 21565570 (WoS & Scopus Indexed-Q3)

Conference publications by faculty

- **Dr.Kavitha Jayaram, Dr. S. Geetha, Prakash Gopalakrishnan, V Jayaram,** "Classifying Scanning Electron Microscope Images using Deep Convolution Neural Network" IEdTC 2023 Conference, India, Oct-2023, VIT Chennai.
- **Dr. Santosh Reddy P, Mamatha A, Sreelatha P K**, presented a paper titled "Intelligent Face recognition system to enhance security in residential area", International Conference on New Frontiers in Communication, Automation, Management and Security (ICCAMS), pp. 1-6, Oct 2023, Presidency University
- **Savitri Kulakarni, Keerthi Reddy, Dr. Sunil C K, Shubhodeep Pal, Shreekanth Dash, P Deepa Shenoy, Venugopal K R** (2023), "Coffee Plant Disease Identification using Enhanced Short Learning EfficientNetV2", In 20th IEEE INDIA COUNCIL CONFERENCE (INDICON 2023), held at CMRIT,

Cross word



Across:

1. Watching films and television online without downloading. (9)
2. You put this small device into the wall to get electricity. (4)
5. An 'intelligent' mobile device. (10)
6. Your computer is 'sick' if it has one of these. (5)
7. Move up or down a computer screen. (6)
12. A form of high-speed Internet access. (9)
14. Someone who loves technology (informal). (6)
15. Like a keyboard, but on a mobile device. (6)

Down:

1. Short form of 'satellite navigation'. (6)
3. A traditional telephone connection in your house. (8)
4. A secret word to log in to a system. (8)
7. When you go into a tunnel, your phone will get no _____. (6)
8. When the telephone line is busy it is _____. (7)
9. A small portable computer. Larger than a phone, smaller than a laptop. (6)
10. A small symbol on a computer screen. (4)
11. A new version of an existing program or app. (6)
13. An application on a mobile device. (3)

Blog

TITLE- SANSKRIT: THE LANGUAGE OF THE GODS, THE LANGUAGE OF AI

The most ancient language that remains eternally young and modern is Sanskrit. Eternal Vedas are revealed in this language. Modern computers adopt this language. Artificial intelligence inherits this language. The greatness of this language can be understood when we read Panini's Grammar rules (Vyakarana Sutras) called "Ashtadhyayi". This great sage who had lived around 500BC had postulated around 5000 sutras pertaining to Phonetics, Morphology, Grammar, Lexical lists and Verbal roots etc. It is highly systematic technical and logical in approach.

Patanjali had written "Mahabhasya" (Commentary) for Panini's linguistic rules. It was with Patanjali the Indian linguistic science reached its definite form. The principles of Panini's grammar rules were lucidly enunciated by Patanjali from various perspectives like Siksha(Phonetics) , Vyakarana(Morphology) and Nirukta(Etymology).

Panini's grammar uses a variety of formal techniques including recursion, transformation, and metarules. This in turn facilitates algorithmic computations. Hence Panini can be called ***father of computing machines****.*

Panini's rules of grammar follow a notation which is equivalent in its power to that of Backus, and has many similar properties: given the use to which the notation was put, it is possible to identify structures equivalent to Backus.

Prof. Subhash Kak, Scientist, Scholar on Indian studies and Professor of Electrical Engineering and Professor of Asian Studies and Cognitive Science at Louisiana State University in Baton Rauge, reviews the Paninian approach to ***natural language processing*** *(NLP) and compares it with the current knowledge representation systems of* ***Artificial Intelligence****, and argues that Panian-style generative rules and metarules could assist in further advances in NLP. Panini's grammar rules remain as the most marvellous contributions of ancient India to computing sciences.*

Today, the modern Indian brains, which dominate the domain of software development, had invoked the legacy of Paninian-logic.

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