Shell Newsletter

Department of

Computer Science & Engineering

Volume 8 | Issue 2 | June 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

This issue of "Shell" is dedicated to **Linus Benedict Torvalds,** born on 28 December 1969 is a Finnish software engineer and the creator and lead developer of the Linux kernel, used by Linux distributions like Debian, Arch and Android. He also created the distributed version control system Git. He has been honoured along with Shinya Yamanaka, with the 2012 Millennium Technology Prize by the Technology Academy, Finland in recognition of his creation of a new open source operating system for computers leading to the widely used Linux kernel.He is also the recipient of the 2014 IEEE Computer Society Computer Pioneer Award and the 2018 IEEE Masaru Ibuka Consumer Electronics Award.

Inside Shell

Vidyayāmruthamashnuthe

B. N. M. Institute of Technology

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From Editor's Desk

Dear Readers,

"Success is not final, failure is not fatal: It is the courage to continue that counts." - Winston Churchill

Hello, wonderful readers! I am thrilled to share with you the latest edition of our beloved newsletter from the Computer Science and Engineering Department – 'SHELL Volume 8 Issue 2'!

As I sit down to compose this message, I am filled with gratitude for the incredible dedication and enthusiasm shown by my fellow contributors. In a world where collaboration transcends physical boundaries, it is truly heartwarming to witness our collective zeal for knowledge and our eagerness to unite in our pursuits. This edition stands as a testament to our shared commitment – a mosaic of articles, blogs, and insights crafted with care to inform and inspire.

Within the pages of this edition, you will find a diverse array of recent technological advancements and the hurdles we have overcome along the way. Each piece has been carefully crafted by a team of talented engineers, pouring their creativity and expertise into every word. A huge thank you to the Department of Computer Science and Engineering for their unwavering support and encouragement.

Dear readers, I invite you to dive into the rich tapestry of Science and Technology presented within these pages. Let this edition be your companion as we navigate the ever-evolving landscape of innovation together.

Aryan Patnaik
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 (IEDC) to ensure prototyping to validate the ideas.

Department overview

Message From The HOD

Welcome to the Department of Computer Science and Engineering at BNMIT. The department is well-supported by seasoned faculty members with an average experience of 10 years and more. It also boasts of a state-of-the-art infrastructure facility that encourages students to acquire knowledge and gain practical experience. Students are guided in shaping their careers, enhancing technical skills, fostering teamwork, and developing strong communication abilities grounded in ethical values. With support from the management, the department provides financial and technical assistance for students to participate in competitions and hackathons at state, national, and international levels. The department also features three Centers of Excellence—Cybersecurity, Red Hat Academy, and CISCO—that equip students with essential knowledge and industry-recognized certifications to thrive in the rapidly evolving IT field. Faculty members are encouraged to pursue higher degrees, conduct socially impactful research, and engage in workshops, symposiums, and conferences at both national and international levels. They are also motivated to adopt innovative teaching methodologies and best practices, transforming the classroom into a dynamic learning environment.

Dr. Chayadevi M L

Cosmic Chronicle: Explorning the Cutting Edge of Space and Astromy

The universe has always held a special place in the human imagination. With each new discovery, it becomes increasingly clear that reality can be more astonishing than fiction. Today, we embark on a journey to explore the latest developments in space exploration and astronomy, venturing into the unknown to uncover the mysteries of our universe.

- **Exoplanets:** Beyond Our Solar System:
  Our quest to understand the cosmos has led to the discovery of thousands of exoplanets—planets outside our solar system. What makes this discovery so groundbreaking is the revelation that some of these exoplanets possess conditions suitable for life. Such findings expand our understanding of the universe and fuel our curiosity about the possibility of extraterrestrial life.

- **Space Missions:** Boldly Going Where No One Has Gone Before:

  The field of space exploration is experiencing a resurgence, with recent missions that have taken us to new frontiers. The Mars rovers continue to send invaluable data from the Red Planet, the James Webb Space Telescope is poised to unveil the universe's secrets, and missions to study asteroids are shedding light on the history of our solar system.

- **Black Holes and Cosmic Phenomena:** The Extreme Frontiers:

  Black holes, gravitational waves, and cosmic phenomena like supernovae are the extreme environments of the universe. These phenomena not only challenge our understanding of physics but also reveal the most mysterious aspects of our cosmos. We'll delve into their significance and what they tell us about the universe's past, present, and future.

- **The Future of Space Exploration:** To Infinity and Beyond:

  As we reflect on the latest developments, we must also consider what the future holds for space exploration. Human missions to Mars and the Moon are on the horizon, along with the ongoing search for habitable exoplanets. The possibilities are limitless, and the universe continues to beckon us with its enigmatic allure.

With each new discovery and mission, the universe unfurls its grandeur, offering us a glimpse into the secrets of the cosmos. It's a journey that stretches far beyond the boundaries of our solar system, filling us with wonder, humility, and a deep sense of curiosity.

Shrilakshmi R
1BG20CS101
CSE 7th Sem

Dive into the Future Exploring the Wonders of Extended Reality

Introduction

In the ever-evolving landscape of technology, the boundaries between the physical and digital worlds continue to blur, opening up exciting new possibilities that promise to revolutionize the way we perceive and interact with reality. One of the most promising and captivating advancements in this realm is Extended Reality (XR), a cutting-edge technology that combines the best of virtual and augmented reality to create immersive and interactive experiences like never before.

What is Extended Reality (XR)?

Extended Reality is an umbrella term that encompasses a spectrum of technologies, including Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR). VR immerses users in a completely virtual environment, while AR overlays digital content onto the real world, enhancing our perception of reality. Mixed Reality blends elements of both, seamlessly merging the physical and digital realms to create compelling and interactive experiences.

Applications Across Industries

1. **Education**:

Imagine students embarking on virtual field trips to historical landmarks or dissecting a virtual frog in a biology class. XR technology enriches learning experiences by making education immersive, engaging, and interactive.

2. **Healthcare**:

In the healthcare sector, XR is transforming medical training, enabling surgeons to practice complex procedures in a risk-free virtual environment. Additionally, XR applications are being used for patient

therapy, pain management, and mental health treatments.

3. **Gaming**:

XR has revolutionized the gaming industry, transporting players into fantastical worlds where they can interact with characters and environments in ways previously unimaginable. The level of immersion provided by XR enhances the gaming experience to unprecedented heights.

4. **Retail**:

Retailers are utilizing AR to offer customers virtual try-on experiences, allowing them to visualize products like clothing, accessories, or furniture in their own homes before making a purchase. This not only enhances customer satisfaction but also reduces return rates.

5. **Workplace**:

In the workplace, XR technology facilitates remote collaboration, enabling teams from different parts of the world to collaborate in a shared virtual space. This enhances productivity and fosters a sense of connection among team members.

The Future of XR: Challenges and Opportunities

While XR technology holds immense promise, there are challenges to overcome, such as the need for more affordable and user-friendly devices, as well as addressing concerns related to privacy and data security. However, as these challenges are met, the opportunities for innovation and creativity in the XR space are limitless.

Aryan Patnaik
1BG21CS014
CSE, 5th Sem

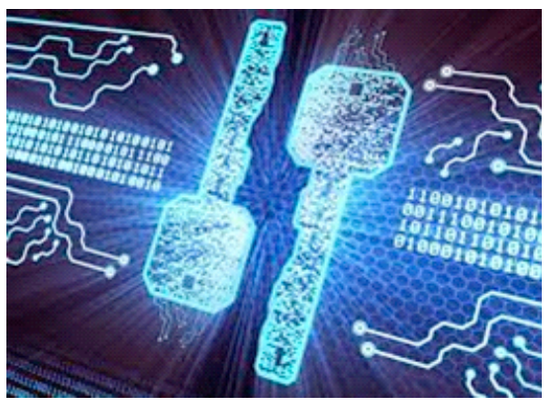
Quantum Cryptography: A Revolution in Data Security Security

Strong encryption is crucial in an increasingly connected world where cyberattacks and data breaches are becoming more frequent. Conventional cryptography, which provides protection through intricate mathematical procedures, has been the cornerstone of data security for decades. But as quantum computing advances quickly, its flaws become apparent, leading to the development of quantum cryptography as a viable substitute. Therefore it is important to examine the reasons behind the necessity of quantum cryptography, its advantages over traditional cryptography and their main distinctions.

Quantum Threat:

The advent of quantum computing presents a significant obstacle to current cryptography techniques. Quantum computers employ quantum bits, or qubits, to process data, whereas classical computers use bits (0s and 1s). The capacity of qubits to exist in a superposition of states makes them unique and enables quantum computers to execute some computations tenfold quicker than classical computers. Data security is becoming increasingly problematic in light of this computational power increase.

Conventional cryptography techniques are based on mathematical puzzles that are computationally challenging for conventional computers to solve. The RSA encryption, for example, is based on the fact that it is hard to factor huge integers into their prime components. However, Shor's algorithm and other quantum computers have the ability to factor big integers very quickly, compromising the security of existing encryption techniques.



Need for Quantum Cryptography:

The threat posed by quantum computing necessitates the development of quantum cryptography. There are numerous important ways that quantum cryptography, and particularly Quantum Key Distribution (QKD), addresses the drawbacks of traditional cryptography:

The fundamental ideas of quantum mechanics underpin quantum cryptography, which provides unbreakable security. Unlike mathematical problems with high computational complexity, QKD is secure because it relies on the basic characteristics of quantum states.

Quantum cryptography achieves information-theoretic security, in contrast to conventional encryption, which depends on the computational difficulty of mathematical problems. This implies that future developments in computation or technology won't be able to enhance the security it offers.

The purpose of quantum cryptography is to fend against quantum attacks. Attackers would not be able to crack quantum encryption without interfering with the quantum states, even with the processing capability of quantum computers.

Latest Quantum Cryptography Techniques:

- **BBM92 Protocol:** One of the first QKD protocols was the BBM92 protocol, which was created in 1992 by Charles Bennett, Gilles Brassard, and Artur Ekert. It established the framework for later protocols for the distribution of quantum keys.
- **E91 Protocol:** Ekert proposed the E91 protocol in 1991, which offers a way to distribute quantum keys based on entanglement. Because quantum entanglement is used, it provides a high level of security.
- **Quantum Digital Signatures:** Quantum digital

signatures, or QDSs, are secure digital signatures that make use of quantum phenomena. These signatures provide robust authentication security and are nearly impossible to counterfeit.

- **Measurement-Device-Independent QKD**, or MDI-QKD, is a protocol that aims to fix possible flaws in real-world QKD applications. It focuses on thwarting attacks in which the adversary takes control of or modifies the measuring apparatus.
- **Quantum-Safe Cryptographic Algorithms:** Research is being conducted to create quantum-resistant, or post-quantum, cryptographic algorithms in addition to quantum key distribution (QKD). These algorithms—which include options like lattice-based encryption and code-based cryptography—seek to protect data from both classical and quantum attacks.

The impending threat of quantum computing and the weaknesses it poses to traditional encryption techniques necessitate the development of quantum cryptography. Due to its distinct features, which include eavesdropping detection, safe key distribution, and unbreakable security, it is a strong competitor in the data security industry. In an age of rapidly advancing technology and cyberattacks, quantum cryptography has the potential to protect sensitive data, even if it is still in the experimental stage and faces practical difficulties. It is anticipated that the field will become more and more important in protecting digital communication and data as it develops.

Mohit Sanjeev Mahajan
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5th Sem, CSE

Advances in Generative AI- Techniques, Architectures and Multidisciplinary Applications

Generative AI is an evolving field within artificial intelligence that aims to create systems capable of generating content that is both coherent and, in many cases, creative. This content can include images, text, music, and more. Generative AI has gained significant attention for its applications in various domains, including art, entertainment, and practical problem-solving.

There are 2 main key techniques:

- **Generative Adversarial Networks (GANs):** GANs consist of two neural networks, a generator and a discriminator, engaged in an adversarial training process. The generator attempts to produce data that is indistinguishable from real data, while the discriminator tries to tell real from fake. GANs have been used for image generation, image-to-image translation, and more.
- **Variational Autoencoders (VAEs):** VAEs are a type of generative model that focuses on learning probabilistic representations of data. They are used for tasks like image generation, denoising, and data compression. VAEs provide a probabilistic interpretation of data, making them valuable for generating diverse outputs.

Architecture

- **Convolutional GANs (DCGANs):** Deep Convolutional GANs are used for image generation. They incorporate convolutional layers to learn hierarchical features and generate high-quality images
- **Recurrent GANs (RNN-GANs):** These models are used for sequential data generation, such as text or music. They use recurrent neural networks to capture dependencies in the data

Applications

- **Image Generation:** GANs have been used to create highly realistic images, generate art, and even hallucinate images from text descriptions.
- **Text Generation:** Recurrent GANs, along with models like LSTM, are used for text generation, including natural language generation and creative writing.
- **Style Transfer:** GANs can be employed to transfer the style of one image onto another, which is useful in art and design applications.
- **Data Augmentation:** Generative models are used to augment datasets for machine learning tasks, improving model performance.
- **Anomaly Detection:** By modelling the normal distribution of data, generative AI can detect anomalies or outliers in various fields, such as fraud detection or defect identification in manufacturing.

Generative AI faces challenges, including mode collapse, training instability, and ethical concerns related to deepfakes and misinformation. Future research is likely to focus on making generative models more controllable and interpretable while addressing these issues. Generative Artificial Intelligence has opened up exciting possibilities for creative content generation, problem-solving, and data augmentation. With advances in techniques and architectures, generative AI is poised to play a pivotal role in shaping the future of AI applications, art, and entertainment.

Samhitha Holla
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CSE, 7th Sem

The Rise of Chatbots: Transforming Customer Service

In a world where technology continually reshapes our daily lives, the rise of chatbots is a transformative force, especially in the realm of customer service. These virtual assistants, powered by artificial intelligence, have become a mainstay in businesses of all sizes, revolutionizing the way companies interact with their customers. In this blog, we'll delve into the fascinating world of chatbots, exploring their working principles, the advantages they bring to customer support, and real-world examples that highlight their impact.

Chatbots: The AI-Powered Assistants

At its core, a chatbot is an AI-driven program designed to interact with humans through textual or voice-based communication. This technology allows businesses to automate customer interactions, providing instant responses to inquiries, resolving issues, and even processing orders. The beauty of chatbots lies in their ability to work 24/7, ensuring round-the-clock support for customers.

Advantages of Chatbots in Customer Service

•**Instant Responses:** Chatbots offer immediate responses, eliminating wait times and enhancing customer satisfaction.

•**Cost-Effective:** They reduce operational costs by automating routine tasks, freeing up human agents for more complex inquiries.

•Scalability: Chatbots can handle numerous customer conversations simultaneously, making them ideal for growing businesses.

•Consistency: Chatbots provide consistent responses, minimizing errors and misunderstandings.

Real-World Examples

•Facebook Messenger Bots: Many businesses use chatbots on their Facebook pages to assist with customer inquiries and provide quick responses.

•eCommerce Chatbots: Retailers employ chatbots to help customers find products, place orders, and track shipments.

•Banking and Finance: Banks use chatbots for account inquiries, transaction history, and basic financial advice.

•Travel Industry: Travel companies utilize chatbots for booking flights, hotels, and answering travel-related queries.

The era of chatbots in customer service is upon us, and it's reshaping the way businesses engage with their clientele. As these virtual assistants continue to evolve and improve, their importance in ensuring stellar customer experiences cannot be overstated. Embracing chatbots is not merely a trend but a strategic move for businesses looking to stay competitive and meet the ever-increasing expectations of modern consumers.

Shrilakshmi R
1BG20CS101
CSE, 7th Sem

Blogs

Consumerism – Navigating the Modern Maze

In today's fast paced world, consumerism has become an intrinsic part of our daily lives. According to Wikipedia, consumerism is a social and economic order in which the aspirations of many individuals include the acquisition of goods and services beyond those necessary for survival or traditional display of status.

The Evolution

In the early 20th century, mass production and industrialization made the goods more accessible, giving birth to a consumer-oriented society. The post World War II economic boom saw the focus changing from the actual product to the advertising and marketing. The transformation in consumerism was seen again, as we moved into the late 20th and early 21st centuries, by the means of the rise of internet and e-commerce platforms, which revolutionized how we shop, offering unprecedented variety and convenience. Social media acted as an amplifier, boosting the consumer culture, with the so-called influencers and targeted advertisements.

The Impact

Today, the average person is estimated to encounter around 10,000 advertisements every single day. This number is twice of what it was in 2007, and a staggering 12 times more than what it was in the 1970s. Given the unprecedented convenience of purchasing things, it creates a perpetual cycle of desire and acquisition.

Consumerism also has an environmental impact. The demand for constant production and consumption leads to resource depletion, pollution and waste. However, on the brighter side, there is a growing movement towards conscious consumerism, which encourages individuals to make more mindful and sustainable choices. Minimalism is another trend gaining great traction as a counter-movement to consumerism.In today's day of endless choices, it is crucial to remember that by making thoughtful choices, we can pave the way for a more sustainable and equitable future.

Aneesh M
1BG21CS010
CSE,6th Sem

Two days National Level Workshop on Microsoft Azure Developer Training

Two Days National Level Workshop on Microsoft Azure Developer Training on 20th and 21st of January 2023 was organised by the department CSE. A total of 150 students took part in the activity, 25 of whom came from other engineering colleges. The workshop was attended by students from a number of engineering colleges, including RRCE, GAT, JIT, ATME Mysore, and Vidya Vardhaka College of Engineering Mysore.

The Resource Person Mr. Kishor Chowdary, Director Cloud beaver was invited as the resource person for the workshop.

This workshop was designed to provide participants with a comprehensive understanding of the Azure platform and its various services, as well as hands-on experience in developing and deploying applications on Azure. Azure is a cloud computing platform and infrastructure created by Microsoft for building, deploying, and managing applications and services through a global network of Microsoft-managed data centers. It offers a wide range of services including computing, storage, networking, and databases, as well as artificial intelligence, analytics, and Internet of Things capabilities. Azure also allows for a variety of deployment models including public cloud, private cloud, and hybrid cloud, providing flexibility for businesses of all sizes. Azure's pay-as-you-go pricing model, coupled with its scalability and security features, make it an attractive option for businesses looking to move to the cloud.

Workshop On Database Application Development Using Java

One Day Workshop on Database application development using java was organised by the department of CSE on 17th January 2023. The Resource Person Mr. Lohith, Director and Project manager ProLo Tech Solutions has been invited as the resource person for the workshop. Totally 100 students from 5th Sem CSE attended the workshop.

Lohith is an industry expert who works on application development using JAVA. He started the session by explaining how java can be used to develop different kinds of applications such as Standalone application, Web based applications. Further he demonstrated the development of a simple application using JAVA.

The application that was demonstrated was Simple Calculator. The application was developed using one of the java toolkits called Java Swing (or Jswing). Lothith explained both the front-end and back-end part and he started with listing all the requirements of the application, application consisted usage of text fields and buttons. Further, he explained and demonstrated how the buttons are programmed so that the text fields or value in combobox are utilized and appropriate output is displayed.

After the first application developed, Lohith explained how java can be further used to connect the application to a database and make use of it. The next application that he demonstrated was of a movie ticket booking system, using the java swings and mysql.

Connecting the front end (java swings) and back end (sql) was done using the JDBC. JDBC has different drivers and these drivers are used to join the database and make use of it through application. Different JDBC drivers are JDBC-ODBC driver, native-api driver (partially java driver), Network Protocol Driver (fully java driver) and thin driver (fully java driver).
SQLyog was used for database creation. SQLyog was used to check if the database was affected by the application that it was connected to.

One Day Workshop on "Iot and its Applications using Arduino Uno"

Workshop on "IoT and its Applications using Arduino Uno" was organized in the department of CSE on 28th April 2023 for 8th semester students. The resource person was **Dr Srinivas** Setty, SST, Bangalore. He has practical experience in IoT design and development. 142 (70-Asec & 72-Bsec) students attended the workshop.
Session 1: Arduino Uno and Node MCU

The session started with installing Arduino IDE along with an explanation of the usage and coding using Python. The Arduino board was used by the students to explore simple programs like Blink LED, to gcnerate Beep Sound, to generate relay, hall effect.
Session 2: Demo of UART

The session started with demonstration of UART programming, displaying and taking inputs from the user on serial monitor, thermistor working and demo of Light Dependent Resistor (LDR).

One Day Technical Talk on Cybersecurity

On 27th April 2023, an insightful technical talk on cybersecurity was conducted at M309. The event aimed to educate and raise awareness among students about the significance of cybersecurity in today's digital world. The talk was delivered by a distinguished industry expert, Mr. Chandan Veerabhadra Shetty, who shared valuable insights and expertise with the students.
As an accomplished professional in the field of cybersecurity, Chandan discussed the evolving landscape of cyber threats and emphasized the need for robust security measures. The talk provided a comprehensive overview of cybersecurity challenges, emerging trends, and the importance of proactive defense strategies.
Following the brief introduction to the field of cybersecurity, Chandan explained various topics related to cybersecurity. Chandan explained different types of cyber threats and methods for collecting, analyzing, and interpreting threat intelligence data. Students learned about proactive threat detection and mitigation techniques. Secure methods to login and keep data safe from attackers using two-factor authentication tools to keep an account safe and the importance of strong passwords. Chandan also mentioned how a strong password will make attackers difficult to hack into an account.
Incident Response and Recovery: The session also provided insights into incident response protocols and effective strategies for managing and recovering from cybersecurity incidents. Students gained knowledge about incident detection, containment, and the importance of a well-defined incident response plan.

Workshop on Ethnus Codemitra

This was the very first session of the workshop. We were briefed about the scheduling of the further classes down the line and the instructors Mr. Goutham and Mr. Sunil introduced themselves. They also gave us some interesting information about their company Ethnus Codemitra and how they are very apt in teaching cloud computing concepts to students, which set the tone for sessions to come.

The instructors also spoke about the laboratory sessions, wherein each student would receive $100 worth of AWS Credits to experiment with.

They also mentioned the number of modules within this workshop, what topics this workshop will cover, what examinations we can take with the information we just learned like the Cloud Practitioner Examination, and soon.

The very first module was titled Cloud Concepts Overview. This module provided a nice segue and recapitulation of cloud computing concepts and allowed us to have a seamless foundation to understand AWS in an efficient manner. Some interesting topics of this module included the disadvantages of traditional IT Data models and how AWS combats them with Cloud Service Models, Cloud Computing Deployment Models, information about Web Services, how to migrate to AWS Cloud, and so on.

A small portion of Module 2: Cloud Economies and Billing was covered as well. The third session of the day was allocated for practical purposes wherein we logged into Canvas and utilized our credentials to log in to our accounts. In the Learner's Lab Course, we were introduced to the Sandbox where we were given $100 worth of AWS Credits. Using this lab, we carried out some simple procedures like creating EC2 Instances, running the instances, and so on. Sunil and Goutham Sir also tasked us with an assignment wherein each student was asked to experiment with the AWS Pricing Calculator and submit their findings. We were also advised to keep the sandbox and the Learner's Lab as clean as possible and be frugal with the AWS Resources.

Session on Intellectual property rights(IPRs) and IP Management for Start -Up

Session on "Intellectual Property Rights and IP Management for Start Up" was organized in the department of CSE on 22nd May 2023 for 6th semester students. The resource person was Dr. Chayadevi M L, HOD, Dept of CSE, BNMIT, Bangalore. The session started with demonstration of key concepts like Types of Intellectual Property and IP Management Stages. Different challenges and examples of Ip management were discussed. Resource person also discussed best practices of IP management followed by approaches that illustrate how firms' multifaceted strategies to effectively manage their intellectual property assets and leverage them for innovation, growth, and competitive advantage. The session also provided insights on importance of intellectual property management, its process and Intellectual property valuation. Different software was introduced to students which are Intellectual property management systems that assist businesses in tracking patents, copyrights, trademarks, and other intellectual property. At the end Students actively participated in Q&A session.

Students Achievements

Academic Year : 2022-23

- **Suhas TS** participated in "Hack-a-bot" organized by Ui-path community on 6th May 2023 and won the 2nd prize.
- **Amogh Krishna** was recognized as a true Engineer at Heart, demonstrating 3DPS, by L&T Technology Services on 4th May 2023 and was a finalist.
- **Adithya Manjunath,** 6th semester, secured second place in a 24-hour state-level hackathon organized by the Department of Computer Science at KSIT on May 4th and 5th, 2023.
- **Adithya Manjunath,** 6th semester, secured first position in the Web Development domain at HackOverflow, a 24-hour hackathon organized by the Department of Information Science at RNSIT on May 27th, 2023.
- **Praneeth Kumar T,** 8th semester, received the Special Jury Award at the National Level Science Fest, Amateur Scientist for Blogger.
- **Praneeth Kumar T,** 8th semester, received the Special Jury Award at the National Level Game Jam Titans by NASSCOM.
- **Praneeth Kumar T,** 8th semester, represented Bangalore City Finals in the Aqua Regia Science Fest and was certified by Guinness World Records.
- **Praneeth Kumar T,** 8th semester, secured the third rank at the state level in the 15th International Level Talent Examination.
- **Praneeth Kumar T,** 8th semester, was awarded excellence in academics for securing 2nd place in the Department of CSE for the 1st, 5th, and 6th semester annual VTU examinations.
- **Praneeth Kumar T,** 8th semester, received the Best in "Co-Curricular" award from Bangalore International Public School.
- **Praneeth Kumar T,** 8th semester, secured first position in the IT Fest competition conducted by NIIT.
- **Alfia Zoya,** 2nd semester, received a scholarship of Rs.20,000 from BNMIT in May 2023.
- **Varshitha Guddappa,** 2nd semester, received a scholarship of Rs.15,000 from BNMIT in May 2023.
- **Aryan Patnaik,** 2nd semester, received a scholarship of Rs.10,000 from BNMIT in May 2023.
- **Harshith Agarwal,** 2nd semester, received a scholarship of Rs.10,000 from BNMIT in May 2023.
- **Harshitha Seksaria,** 2nd semester, received a scholarship of Rs.10,000 from BNMIT in May 2023.
- **Anagha K M,** 4th semester, received a scholarship of Rs.20,000 from BNMIT in May 2023.
- **Shrilakshmi R,** 4th semester, received a scholarship of Rs.15,000 from BNMIT in May 2023.
- **J N Sathyaeri,** 4th semester, received a scholarship of Rs.15,000 from BNMIT in May 2023.
- **Mahima A H,** 4th semester, received a scholarship of Rs.10,000 from BNMIT in May 2023.
- **Ashna P. S,** 8th semester, won the Green Pill Hackathon Festival Web3 Hackathon conducted by Atlantis Dao and Refi India from March 23rd to 26th, 2023.
- **Amogh Krishna,** 6th semester, won second place in the Bazinga Quiz organized by Tatva 2023 and Magoosh on May 5th, 2023.
- **Anand V A,** 6th semester, won second place in the Bazinga Quiz organized by Tatva 2023 and Magoosh on May 5th, 2023. Journal of Ambient Systems and Applications ISSN:2320-9259[online]:2321-6344- July 2022
- **Sangamesh R,** 6th semester, won second place in the SDP Sprint Hackathon (TATVA) on May 3rd and 4th, 2023.
- **Rahul,** 6th semester, won second place in the SDP Sprint Hackathon (TATVA) on May 3rd and 4th, 2023.
- **Prajwal V,** 6th semester, won second place in the SDP Sprint Hackathon (TATVA) held on May 3rd and 4th, 2023.
- **Sameehana Manvi,** 6th semester, won second place in the SDP Sprint Hackathon (TATVA) held on May 3rd and 4th, 2023.

- **Aditya Manjunath,** 4th semester, secured second position in a 24-hour state-level hackathon organized by the Department of Computer Science at KSIT on May 4th and 5th, 2023.
- **Shrilakshmi R** 7th sem participated in a program on software automation and Ui-path automation tools organized by Ui-path community from November 2022 to July 2023 and was recognized as a Ui-path Student Developer Champion.
- **Anusha B K** 7th sem CSE, BMSCE, KREEDOTSAVA VOLLEYBALL RUNNERS, Held at BMS College of Engineering, Bangalore in February 2023.

Students Publications

1. **Simran** has Published Journal titled "Automation of Epileptic Sezure Detection Techniques Analysis and review" in International Journal All Research Education and Scientific ISSN:2455-6211 Jan 2023
2. **Manikantha K, Kushagra Mittal, Abhinav TL, Bikash Mishra,** Smart Worker Monitoring System Using Facial Recognition and Deep Learning Techniques, International Journal of Computer Applications Technology and Research, ISSN:2319-8656
3. **Dr.Geetha, Yusuf Mohammed Khan, Rohan Sujay, Sai Pavan Yoganand, Rohan B,** Fraudulent URL and Credit card Transaction detection system using machine learning, IEEE International Conference on Advances in Electronics, Communication, Computing and Intelligent Information Systems (ICAECIS-2023) ISBN:979-8-3503-4805-7, April 2023
4. **Vishal Koul, Tushar Ranjan, Ronik Bakshi,** Mental Health Tracker, International Journal of Novel Research and Development, ISSN:2456-4184 May-23
5. **Bharath M R, Victor Joshva J, Nikhil M, Parthasarathy,** Predicting the price of Bitcoin using Hybrid Metodologies, International Journal of Scientific Research and Engineering Development, ISSN:2581-7175 Apr-23
6. **Nidhi, Vidhi Sinha, Sanjana V, Simran, Jayashree,** Automation of Epileptic Seizure Detection Techniques Analysis and Review, International Journal of Scientific Research in Engineering & Management(IJSREM), ISSN:2455-6211, Jan-23
7. **Roshini R** Crop Yield Estimation Based on Soil Fertility Using Machine Learning Algorithms, International Journal of Scientific Research and Engineering Development ISSN:2581-7175 Apr-23
8. **Dr. Anitha N, Akshat Saxena, Kanaad Sawarkar, Yash Nathani, Raj Maurya,** Survey on Plagiarism Detection Techniques, International Conference on Global Convergence in Technology, Entrepreneurship, Computing and Value Engineering: Principles and Practices: ICGCP-2023, ISBN:9798392733033, May-23
9. **Shrvya S, Shwetha M, Srija Mantena, Vyjayanthi S, Santhosh Reddy P,** An Efficient Method to Detect Sleep Apnea, International Journal of Advances in Engineering and Management (IJAEM) ISSN:2395-5252 Feb-23
10. **Manikantha K, Abhay Nataraj, Mohammed Affan, Calden Michael D'Souza, Charan Kannati A** Survey on Blockchain-Based Supply Chain Management in Agriculture International Journal of Computer Applications Technology and Research ISSN:2319-8656 Feb-23
11. **Dr. Chayadevi M L, Shreyas K, Sruthi S, Sujay L Gowda,** Literature Review on Certificate Forgery Detection International Journal of Advances in Engineering and Management (IJAEM) ISSN:2395-5252 Mar-23
12. **Sreeja A K, H Prakhya, Bhavana V, Bhoomika Manjunath Vaidya, Nettem Lasya** Answer Checking System Using Artificial Intelligence and Machine Learning, International Conference on Internet of Things, Communications, Intelligence and Computing, May-23
13. **Brunda M S, Deepthi Rajkumar, Gautham M, Bhuvan B M, Dr. Kavitha Jayaram,** Industrial Human Activity and Ergonomic Risk Analysis, AICTE sponserd Fourth AICDMB-2023 Organized by Dept of CSE VVCE, Mysuru, 16-17 March-23
14. **Gamya T R, Sahithya G K Anil Kumar P N** Crop Yield Estimation Based on Soil Fertility Using Machine Learning Algorithms, International Journal of Scientific Research and Engineering Development ISSN:2581-7175 March-April-2
15. **Prof. Jalaja G, Karthik Kombrenje Kumaraswamy, Aryaan Khettry, Neha Kumari, Maanasi Chowdary** Literature Review for Optimal Location Prediction for Charging Station, Journal of Emerging Technologies and

Innovative Research, ISSN:2349-5162, Apr-23

16. **Ranjitha N, Rakshitha V, Prakshi Singh, Aditi B Prahalad, Smt. Akshitha Katkeri,** A Survey on Virtual Air Sketching Using open CV , International Journal of Advances in Engineering and Management (IJAEM) ISSN:2395-5252

17. **Chaitra S, Gunajna G, V S Supritha, Vidya Shree M L, Priyanka Padki,** Systematic literature review of Deep Learning methods used in the analysis of datasets for Osteoporosis risk assessment on the vertebral spine without fracture. International Research Journal of Modernization in Engineering Technology and Science 5-May-23

18. **P Chirag, Chilakala Sai Tarun, Hemanth B M, Adithya S Acharya, Dr. rajashree** Early Detection and Prediction of Chronic Kidney Disease Using Deep Neural Network, International Journal of Innovative Research in Technology, 159809 12-May-23

Faculty Achievements

1. **Dr. Chayadevi M L and Dr. Jalaja G,** along with students Mr. Sujay L Gowda, Mr. Shreyas K, and Ms. Sruthi S, collaborated on the project "Certificate Forgery Detection in Cyber Security" funded by KSCST in 2023, spanning 1 year with a grant of Rs. 4,000.
2. **Dr. Chayadevi M L** served as the session chair for the National Conference on Computing Technology (NCCT-2023) at RNSIT, Bangalore on 8th May 2023.
3. **Dr. Chayadevi ML** was nominated by VTU to the Board of Studies (BOS) in the Department of CSE (Data Science) at Dayananda Sagar College of Engineering, effective from 21st June 2023.
4. **Dr. Jalaja G** served as the session chair for the Third National Conference on Computing Technology (NCCT-2023) held on 8th May 2023.
5. **Dr. Jalaja G** reviewed papers for the IEEE International conference on Advances in Electronic, Communication, Computing, and Intelligent Information System (ICAECIS-23) organized by BIT, Bangalore from 19th to 21st April 2023.
6. **Dr. Jalaja G** also reviewed a paper for the IEEE International Conference on “Intelligent and Innovative Technologies in Computing, Electrical and Electronics” organized by BNMIT's Department of Electronics and Communication Engineering on 27th and 28th January 2023.
7. **Dr. Jalaja G** fulfilled examination squad duty for the January/February 2023 examinations from 16th January to 31st January 2023.
8. **Dr. Anitha N** served as both reviewer and session chair for the IEEE International conference "ICAECIS-23" organized by BIT, Bangalore in April 2023.
9. **Dr. Anitha N** reviewed a paper for the IEEE International Conference on “Intelligent and Innovative Technologies in Computing, Electrical and Electronics” organized by BNMIT on 27th and 28th January 2023.
10. **Dr. S Geetha** reviewed a paper titled "A Secured IoT based Intelligent Transport System (IoT-ITS) framework based on cognitive science Soft Computing" in February 2023.
11. **Dr. Kavitha Jayaram** also reviewed a paper for the IEEE International Conference on “Intelligent and Innovative Technologies in Computing, Electrical and Electronics” organized by BNMIT on 27th and 28th January 2023.
12. **Prof. Manjushree K** conducted a hands-on session on "Real Time IoT Application" at Saptha Giri College Of Engineering on 24th February 2023.
13. **Dr. Rajani Shree M** served as a reviewer and Program Committee Member for the International Conference on Computer Vision and Robotics (CVR 2023) held on 24th and 25th February 2023 at Babu Banarsi Das University, Lucknow, India.
14. **Dr. Rajani Shree M** reviewed papers for the IEEE International conference on Applied Intelligence and Sustainable Computing (ICAISC 2023) organized by Shri Dharmasthala Manjunatheshwara College of Engineering and Technology, Dharwad on 16th and 17th June.
15. **Prof. Ashwini R M** successfully organized a 2-day National Level workshop on "Microsoft Azure Developer Training" in association with the Indian Society for Technical Education (ISTE) at BNMIT, Bangalore on 20th and 21st January 2023.

16. **Dr. Raghavendra C K** authored a book chapter titled "ICT Tools for Efficient Implementation of Blended and Flipped Learning Models," published in February 2023 by Wiley-Scrivener Publishing LLC. Print ISBN: 9781119867586, Online ISBN: 9781119867647, DOI: 10.1002/9781119867647.
17. **Dr. Swetha M D** authored a book chapter titled "Detecting and Recognizing Text from Scene Images using RCNN and EasyOCR," published on 21st March at ICTIS 2023 and included in Springer LNNS series Springer proceedings.
18. **Dr. Sreenivasa Setty** was a speaker at the workshop on "Recent Trends in Intelligent Internet of Things (IoT)" held at Bangalore Institute of Technology from 11th to 13th January 2023.
19. **Dr. Sreenivasa Setty** presented at the workshop on "IoT and its Applications" at K.S. School of Engineering and Management (KSSEM) on 20th and 21st January 2023.
20. **Dr. Sreenivasa Setty** delivered a talk at the workshop on "IoT & Data Analytics" hosted by R.R Institute of Technology (RRIT) on 3rd April 2023.
21. **Dr. Sreenivasa Setty** was a speaker at the workshop on "IoT in Agriculture" conducted at Sir MVIT from 11th to 12th April 2023.
22. **Dr. Sreenivasa Setty** was a speaker at the workshop on "IoT and its Applications" held at ATRIA Institute of Technology on 19th and 20th April 2023.
23. **Dr. Karthik S** served as a Resource Person for the MSDP (Mainstreaming of Skill Development Programme) on Robotic Process Automation (RPA) at BNMIT from 13th February to 4th March 2023.
24. **Prof Priya S** authored a paper titled "Predicting the Price of Bitcoin using Hybrid Methodologies" published in the International Journal of Scientific Research and Engineering Development (IJSRED) in April 2023. ISSN: 2581-7175, Volume 6, Issue 2.
25. **Dr. S Rajashree** contributed to authored a paper titled "Fuzzy Inference with Enhanced Convolutional Neural Network based Classification Framework for Predicting Heart Attack using Sensor Data," published in Revue d'Intelligence Artificielle in 2023. ISSN: 0992-499X, vol. 37 no. 1.
26. **Dr. Raghavendra C K** received grant SW-15947/2023 for "E-Support for Divyang" using Python, granted on 2nd February 2023
27. The patent titled "BLOCKCHAIN-BASED REMOTE HEALTH CARE SOLUTIONS WITH EXTENDED REALITY ASSISTANCE," authored by **Dr. Anitha N, along with Dr. Chayadevi M L, Dr. Geetha S, Dr. Kavitha Jayaram, Manikhantha, and Priya S**, was published in the journal or platform named Utility on April 7, 2023.Anitha N, Bindiya A J, and Indumathi S presented "Robotic Process Automation: A Software Bot for Healthcare Sector" at the IEEE International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) on January 28, 2023, in Bengaluru, India.
28. **Dr. S. Geetha,** Teena**, Chayadevi M L, and Kavitha Jayaram** presented "Blockchain Based File Tracking and Management System for Pension Applications" on January 27, 2023, at the IITCEE IEEE International Conference.
29. **Prof A.K. Sreeja** presented "Answer Checking System Using AI and ML" at the International Conference on Internet of Things, Communication, Intelligence, and Computing on May 5-6, 2023.
30. **Dr. S. Geetha and Priya S**, along with Diana Pretty, presented "Performance Estimation of Real Estate Business Price Using the Regression Analysis of Machine Learning" at the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) on June 28, 2023, in Bengaluru, India. IEEE Xplore
31. **Dr. Anitha N** presented "Survey on Plagiarism Detection Techniques" on May 5, 2023, at the International Conference on Global Convergence in Technology.
32. **Dr. Kavitha Jayaram,** Brunda M S, Deepthi Rajakumar, Gautham M, and Bhuvan B M presented "Industrial Human Activity and Ergonomic Risk Analysis" at the 4th Annual International Conference on Data Science, Machine Learning & Blockchain Technology on June 16-17, 2023.
33. **Dr. Kavitha Jayaram**, Manish K Reddy, Aneesh Acharya, Ameer Suhail M, and Mohammed Raheel presented "Literature Survey on Tracking Template Face Mesh Using Stereo Video" at the 4th Annual International Conference on Data Science, Machine Learning & Blockchain Technology on June 16-17, 2023.
34. **Prof Akshitha Katkeri, Prof. Manjushree K, and Prof. Manikantha K** presented "Automated Waste Management System" at the International Conference on Internet of Things, Communication, Intelligence, and Computing on May 5-6, 2023.
35. **Dr. Swetha M D** presented "Text Detection and Recognition from the Scene Images Using RCNN and

EasyOCR" at the International Conference ICTIS-2023 on April 27-28, 2023, in Ahmedabad, India.

36. **Prof. Manjushree K, Prof. Akshitha, Prof. Manikantha, and Prof. Manjushree K** presented "AI and VR in Psychiatry: Treatment of Mental Illness with Artificial Intelligence and Virtual Reality" at the International Conference ICGCP-2023 on May 5-7, 2023.
37. **Prof Priyanka Padki and Sheba Selvam** presented "Prediction of Rheumatoid Arthritis Susceptibility Using Gene Mutation Rate" at the IEEE International Conference on Advances in Electronics, Communication, Computing and Intelligent Information Systems (ICAECIS-2023) on May 20, 2023, at BIT, Bengaluru.
38. Prof S. Aravind, M. Ashik, **M. L. Chayadevi**, A. J. Kennedy, C. R. Bhatkal, and A. P. Patil presented "Cloud-Based Application for Managing Placement Related Information" at the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) in Bengaluru, India, 2023.
39. **Prof Priya S and Dr. S. Geetha**, along with Diana Pretty, presented "Performance Estimation of Real Estate Business Price Using the Regression Analysis of Machine Learning" at the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) on June 28, 2023, in Bengaluru, India.
40. **Dr. S. Geetha** was part of the Faculty Enrichment Program (LTIMindtree) on 20th April 2023.
41. **Dr. Swetha M D** participated in the Faculty Enrichment Program (LTIMindtree) on 20th April 2023

Book Published by Faculty 2022-23

- **Dr.S.Geetha** has written a book chapter on "Prediction of Liver Diseases at Earliest Using Machine Learning Algorithms" in Engineering, Science, and Sustainability, Edition First Published 2023, Imprint CRC Press Pages5,eBook ISBN9781003388982,Taylor Francis.

Journal Publications by faculty members 2022-23

- **Madhura Prakash M., Krishnamurthy G.N,** Machine Vision based Unsupervised Summarization of Wireless Capsule Endoscopy Video, May 2023, Global Journal of Medical Research, DOI: 10.34257/LJMHRVOL23IS4PG1
- **Madhura Prakash M, Dr. Krishnamurthy G. N,** A comparative analysis of mobilenet and xception architecture for classification of endoscopy images. Int J Comput Artif Intell 2022;3(2):60-65. DOI:10.33545/27076571.2022.v3.i2a.56
- **Dr. Chayadevi M L,** "Segmentation and Classification of Tuberculosis Bacteria from Digital Microscopic images: A Novel Approach using ARTNN", has been communicated to International Journal of Innovative Computing, Information and Control (IJICIC), ISSN: 1349-4198, Indexed by Ei Compendex (Elsevier), SCOPUS (Elsevier), INSPEC (IET), web of science.
- Sheshadri, R.M. , Chopra, Y.A. , Anand, Y. , Sumukh, G. , **Geetha S**, "Analysis of Efficient Net CNN model on luna16 extracted lung nodule patches", International Journal for Research Trends and Innovation 7, July 2023. (non-scopus)
- Apeshka Gowda , **S Geetha**, "A Review on Predicts Emission of Greenhouse Gases Using ML", International Journal for Research Trends and Innovation, International Journal for Research Trends and Innovation 7, July 2023. (non-scopus)
- Anbarasu Sivalingam, **Karthik Sundararajan**, Anandhakumar Palanisamy, "CRF-MEM: Conditional Random Field Model Based Modified Expectation Maximization Algorithm for Sarcasm Detection in Social Media", Jan 2023, Journal of Internet Technology, vol. 24, no. 1, pp. 45-54. (Scopus Indexed-Q3)
- Dr. Rohini T V, D K Chandrashekar, Pavitra Bai S, **Rajashree S**, Sunitha R, A Systematic approaches of Data placement, Data Replication and Data migration in heterogeneous Edge-cloud Computing Systems: A Literature review, Ingénierie des Systèmes d'Information, International Information & Engineering Technology Association, (ISSN 1633-1311).
- Rajesh Natarajan, **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, 100298, ISSN 2590-0056 (Scopus-Q1)
- **Manikantha K**, Abhay Nataraj, Mohammed Affan, Calden Michael D'Souza, Charan Kannati , "A survey on Blockchain-based Supply Chain Management in Agriculture", International Journal of Computer Applications Technology and Research, Volume 12 – Issue 01, ISSN:-2319–8656, DOI:10.7753/IJCATR1201.1009 (non-scopus), April 2023.

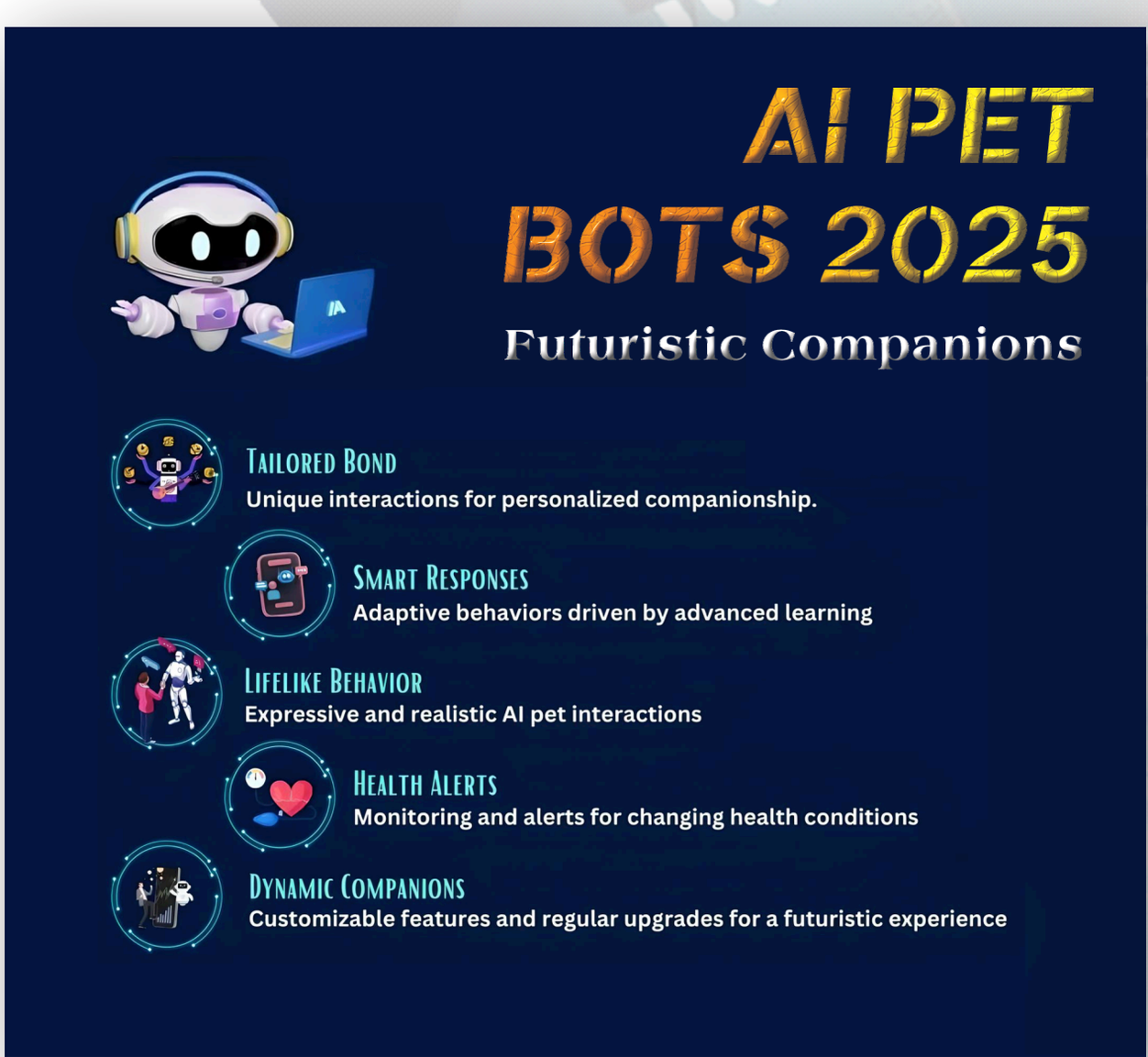
- **Manikantha K**, Kushagra Mittal, Bikash Mishra, Abhinav T L, "Smart Worker Monitoring System Using Facial Recognition and Deep Learning Techniques", International Journal of Computer Applications Technology and Research, Volume 12–Issue 01, 60-62, 2023, ISSN:-2319–8656, DOI:10.7753/IJCATR1201.1009. (non-scopus)
- **Priyanka Padki**, Gunagna, Chaitra S, Supreetha V S and Vidyashree, "Systematic Literature review of Deep Learning methods used in the analysis of dataset for Osteoporosis risk assessment on the vertebral spine without fracture", International Research Journal of Modernization in Engineering Technology and Science (IRJMETS), Vol 5, Issue , May 2023. (non-scopus)
- Ranjith, V., Barick, R., **Pallavi C V**., Sandesh, S., Raksha, R. (2023). Sentiment Enhanced Smart Movie Recommendation System. In: Shakya, S., Balas, V.E., Haoxiang, W. (eds) Proceedings of Third International Conference on Sustainable Expert Systems . Lecture Notes in Networks and Systems, vol 587. Springer, Singapore. https://doi.org/10.1007/978-981-19-7874-6_4 (scopus-indexed)
- **Geetha L S**, Indhu Chowdary, Akshay M S, "Parking Space Recommendation System", Journal of Advanced Research in Technology and Management Sciences, Volume: 05, Issue: 05, ISSN: 2582-3078 May 2023, Available online at: http://www.jartms.org. (non-scopus)
- **Mrs. Priya S**, Mr. Victor Joshva J, Mr. Nikhil M, Mr. Bharath M R, Mr. Parthasarathy, "Predicting the price of Bitcoin using hybrid methodologies", International Journal of Scientific Research and Engineering Development , Volume 6, Issue 2, April 2023. (non-scopus)
- **Shree, M. Rajani** & B. R., Shambhavi (2023). Generation of Syntax Parser on South Indian Language using Bottom-Up Parsing Technique and PCFG. Journal of Information Technology Management, 15 (Special Issue), 19-33. https://doi.org/ 10.22059/jitm.2022.89408. (Scopus Indexed-Q3).

Conference publications by faculty members 2022-23

- S. Aravind, M. Ashik, **M. L. Chayadevi**, A. J. Kennedy, C. R. Bhatkal and A. P. Patil, "Cloud-based Application for managing placement related information," 2023 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), Bengaluru, India, 2023, pp. 871-877, doi: 10.1109/IITCEE57236.2023.10091095.
- **S. Geetha**, Teena, **Chayadevi M L** and Kavitha. Jayaram, "Block Chain Based File Tracking and Management System for Pension Applications," *2023 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE)*, Bengaluru, India, 2023, pp. 1078-1083, doi: 10.1109/IITCEE57236.2023.10091068.
- **Anitha N**, Bindiya A J, Indumathi S*, "Robotic Process Automation (RPA): A software bot for healthcare sector",* International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), Bengaluru, India : IEEE 2023.
- **Dr. Anitha N**, "*Survey on Plagiarism Detection Tecniques",* s.l. : International conference on Global convergence in Technology, 2023.
- **Geetha, S.,** Diana, Pretty and S, Priya*, "Performance Estimation of Real Estate Business Price Using the Regression Analysis of Machine Learning,* Bengaluru, 2023 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), India : IEEE, 2023.
- **Dr. Kavitha Jayaram**, Manish K Reddy, Aneesh Acharya, ameer Suhail M, Mohammed Raheel, "Literature survey on tracking template face mesh using stereo video*",* 4th Annual International Conference on Data Science, Machine Learning & Blockchain Technology, 2023.
- ***Dr. Kavitha Jayaram****, Brunda M S, Deepthi Rajakumar, Gautham M, Bhuvan B M Industrial Human Activity and Ergonomic Risk Analysis,* 4th Annual International Conference on Data Science, Machine Learning & Blockchain Technology, 2023.
- **Prof. Manjushree K, Prof. Akshitha, Prof. Manikantha**, "AI and VR in Psychiatry: Treatment of mental illness with Artificial Intelligence"*,* 2023 INTERNATIONAL CONFERENCE, ICGCP.
- **Prof. Manjushree K, Prof. Akshitha, Prof. Manikantha***,* "Automated Waste Management System"*,* 2023 International conference on Internet of Things, communication, Intelligence and Computing, May 2023.
- **Prof. A.K.Sreeja**, Prakhya H, Bhavana V, Bhoomika M, Lasya, "*Answer checking system using AI and ML*"**,**

s.l. : International conference on Internet of Things, communication, Intelligence and Computing, May 2023.

- **Prof. Priyanka Padki, Sheba Selvam**, Prediction of Rheumatoid Arthritis Susceptibility Using Gene Mutation Rate, IEEE International Conference on Advances in Electronics, Communication, Computing and Intelligent Information Systems 2023, BIT, Bengaluru.



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