TECHNICAL MAGAZINE

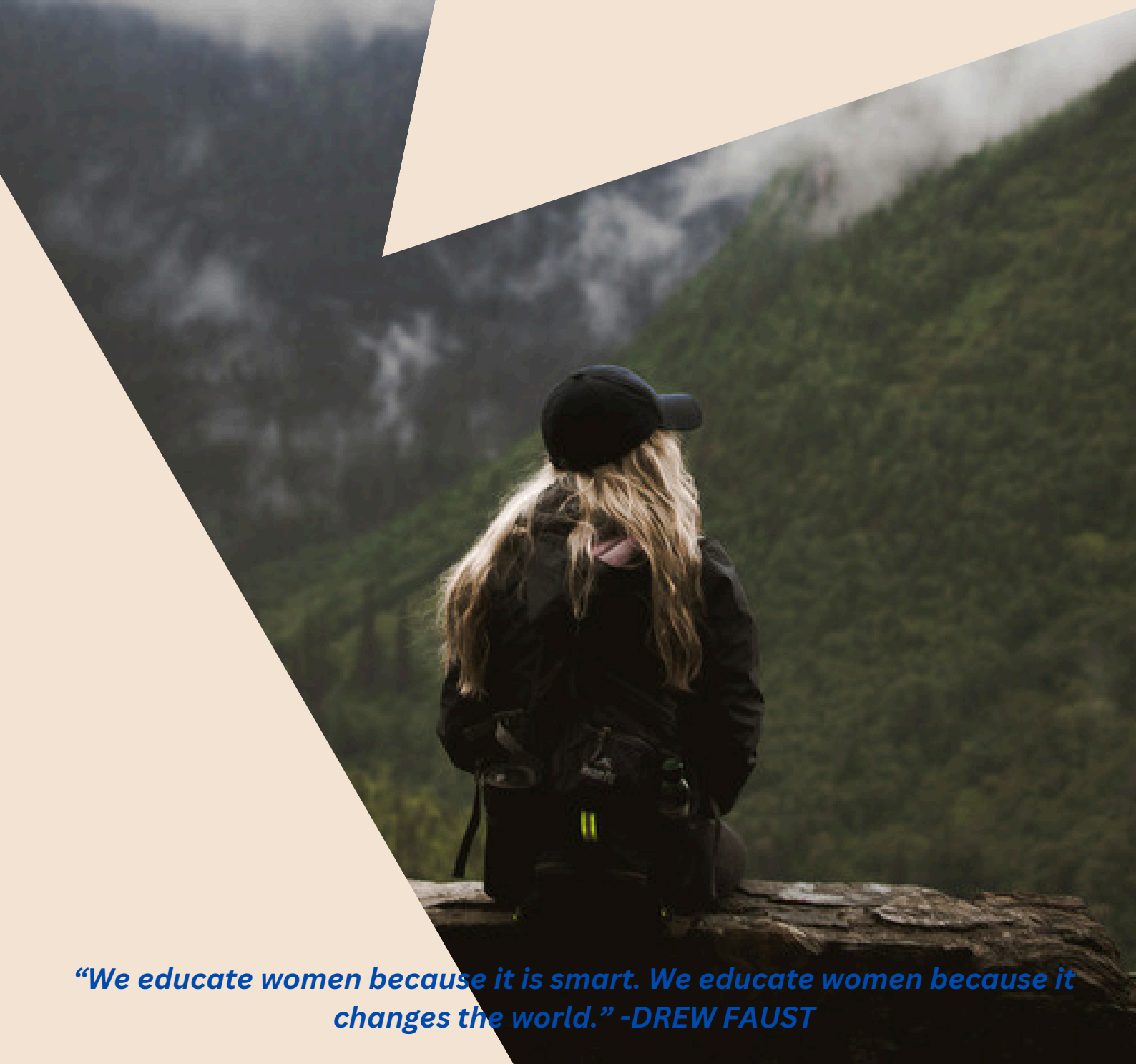
JANUARY-DECEMBER 2024

VOLUME 6

# Bhoj Reddy Engineering College for Women

# TECH RADAR

## Department of Information Technology



*"We educate women because it is smart. We educate women because it changes the world." -DREW FAUST*

# VISION AND MISSION OF THE DEPARTMENT

## Department Mission

- The department is committed to providing an enriching and conducive environment to build tools through the values of compassion and respect.
- To provide a holistic learning environment that will help students improve their personal and professional skills.
- To create an ambiance that will contribute to the creation of self-reliant, innovative, and entrepreneurial professionals who shall contribute to the growth of technology.
- To develop a passion for learning through practical approach.

## Department Vision

- To emerge as a department of excellence in utilizing cutting-edge technology by empowering women with sound technical knowledge to meet the future needs and challenges of society.

## CONTENTS

# PRINCIPAL MESSAGE

Dr J Madhavan
M.E, Ph.D,MIE,MISTE,MIETE
Professor & Principal

Dear Students,

Empowerment of girl students for their versatile progress through education is our cherished motto. BRECW is established to create, nurture, and shape technical professionals and leaders to create an inclusive and sustainable society in a national and international perspective. To achieve this vision, we launched undergraduate engineering degree programs that nurture many vibrant and promising professionals equipped with skills to face the ever changing social, economicaland technical landscape of our country.

At BRECW, we provide high-end undergraduate education and research opportunities in new frontiers of Engineering and Technology with special focus towards Leadership & Innovation. Students are provided with opportunities for interaction with the experts from the Industry through Guest Lectures, Industrial Visits, Vocational Training (internships), Seminars and Workshops etc.

To align with the curricula, we have excellent faculty, state-of-the-art infrastructure and laboratories. Spacious green campus, good library and peaceful atmosphere ensures that learning becomes a wonderful experience

I firmly believe that our institute is more than just a place to learn. It gives you a chance to grow by equipping with everything you need to achieve excellence. At BRECW we ensure students to get the best start to their future career so that they could become smart and responsible citizens of our glorious country.

**"ALL OUR DREAMS CAN COME TRUE, IF WE HAVE THE COURAGE TO PURSUE THEM."**
**— WALT DISNEY**

# HOD MESSAGE

**DR C MURUGAMANI**
**ASSOCIATE PROFESSOR**
**HEAD OF IT DEPARTMENT , BRECW**

Dear Students,

It gives me immense pleasure to release the annual departmental magazine of IT. Our college is one of the premier institutions, unique like a prism reflecting the manifold shades of learning and co-curricular activities.

The very motto of our department is to provide quality education. The process of learning is extremely important in life. What you learn, how you learn, and where you learn play a crucial role in developing one's intellectual capability, besides shaping one's career.

Along with academic knowledge, the IT department also trains its engineers to face the challenges in life by providing many value-added courses to enhance their career prospects. The excellent infrastructure and teaching faculty of the highest caliber ensure quality education through active interaction among students, parents, and staff. Additionally, a Training and Placement Cell guarantees a bright future for our students

Our magazine is a testament to the hard work and dedication of both students and faculty, showcasing their achievements and innovative projects. We hope it serves as an inspiration and a source of pride for everyone associated with the department. We extend our heartfelt gratitude to everyone who contributed to this edition. May this magazine motivate and encourage many more to strive for excellence.
This edition features a variety of articles, research papers, and project reports that highlight the innovative spirit of our students. From cutting-edge technology trends to in-depth analyses of current IT issues, the content reflects the vibrant academic environment of our department. There are also interviews with alumni and industry experts, providing valuable insights and advice for current students.

# NAAC ' A' GRADE


Congrajulations!!! We are delighted to inform that BRECW has been NAAC accrediated with a CGPA of 3.09 out of 4 scale at 'A' grade valid for a period of 5 years from 9 August 2024

# FACULTY PUBLICATIONS

Dr C Murugamani, “A Proposed Model for Lifestyle Disease Prediction Using Support Vector Machine” , ISSN No: 0886-9367, Volume XVI, Issue V, May 2024, Pages: 854-861, 1st Author, AY 2023-24, https://ijaema.com/index.php/volume-xvi-issue-vmay-2024/,

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D Navaneetha, Katapally Suchithra, Ramola Sanjana Reddy".Conventional Data Integrity Verification schemes For Centralized Database Using Block Chain Technology" May 2024 Volume XII Issue IV,https://www.ijmece.com/ijmeceadmin/upload/ ijlbps_663494c3d6d52.pdf

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T Sudha Rani, Network Anomaly classification using Long Short Term Memory Networks in Cyber Physical Systems has been Accepted for the International Conference on Wireless Communication and Internet of Everything (ICWCIE-2024) on 21-22 June 2024 at Sri Siddhartha Institute of Technology,

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A. Vasavi Sujatha, B. Kethana, and P. Sreya, "Challenge Yourself Android Application," International Journal of Modern Electronics and Communication Engineering (IJMECE), vol. 12, no. 2, pp. 113, Apr. 2024, ISSN: 2321-2152.

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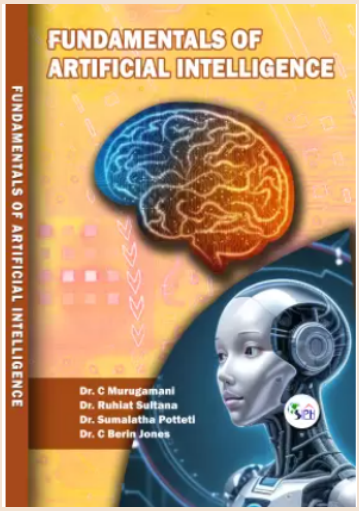
R. Simhadri, M. Sravanthi, B. R. Nadh Singh, S. Hajera Begum, N. Saritha and V. Sandhya, "Yolo Algorithm to Detect & Clarify All Objectives by Deep Reinforcement Learning Approach," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-5, doi: 10.1109/IC3TES62412.2024.10877450.




# BOOK PUBLISHED

FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE
(Dr. C Murugamani, Dr. Ruhiat Sultana, Dr. Sumalatha Potteti, Dr. C Berin Jones)

# CONFERENCE PAPERS

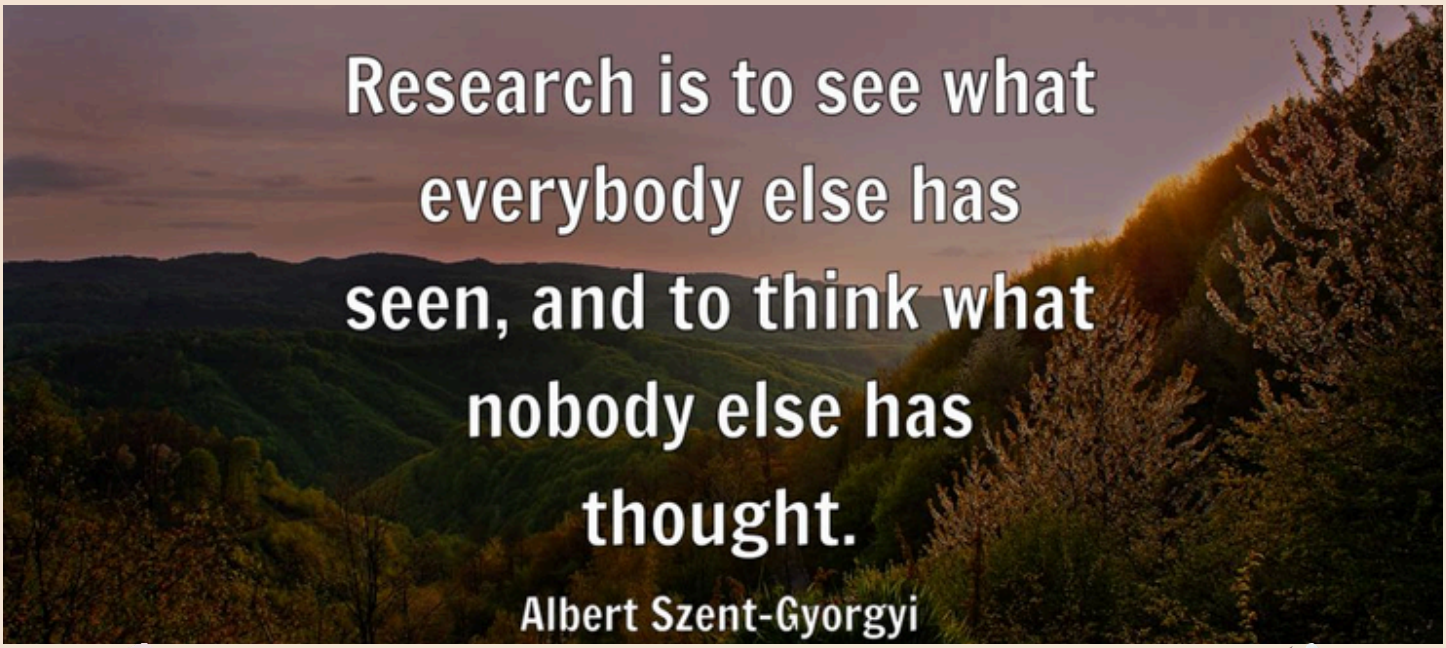
1. B Anitha, “Patient Data Analytics Using XAI Explainable AI in Health Informatics”, Springer ISBN:978-981-97-3705-5, 2024, https://doi.org/ 10.1007/978-981-97-3705-5

2. D.Navaneetha , Harnessing Machine Learning for Prediction Diagnosis of parkinson's desease, ICAAIML-2024 at Vignan Institute of Technology and Science, 30th Aug 2024, SPRINGER

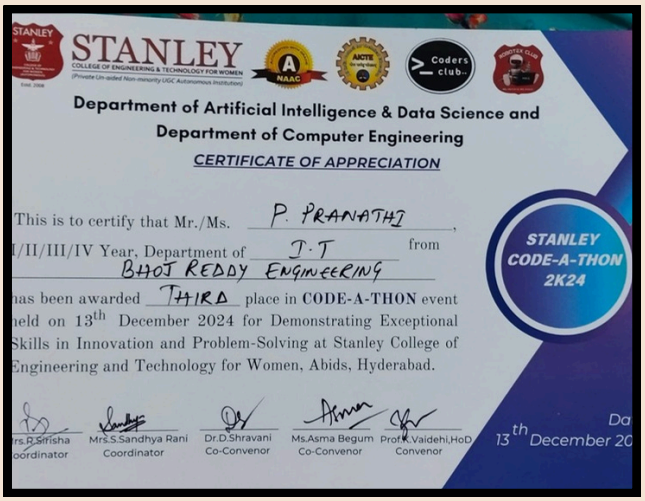
3. K.Madhuravani, “Unleashing the power of CNN for cardiac arrest Prediction : A comparative Analysis with ANN”, Proceedings of the Third International conference on cognitive and intelligent comuting, Volume I, SPRINGER

4. K.Madhuravani, Harnessing Machine Learning for Prediction Diagnosis of parkinson's desease, ICAAIML-2024 at Vignan Institute of Technology and Science, 30th Aug 2024, SPRINGER in process

5. K.Madhuravani , “Medical Imaging using Deep Learning” in Audio, Image and Video Signal Processing and its Applications in Modern Technology, SPRINGER



# STUDENT ACHEIVEMENTS




22321A1264 - Paloju Pranathi, 22321A1222 - L Bhavya Sri, 22321A1203 - Gunta Aishwarya from III IT-A attended code-a-thon event at Stanley Engineering college on 13th December 2024 and bagged 3rd prize in the event.

# PLACEMENTS

## Accenture

1. **20321A1264 Sai Pragna Reddy Tippana**
2. **20321A1268 Sakshi Rajanlawar**
3. **20321A12B3 Varsha Challa**
4. **20321A1232 Kavya Reddeddy**
5. **20321A1245 Manisha Koilkar Chowdari**
6. **20321A1248 Najmunnisa Begum**

## Amazon

1. **20321A1208 Arathi Boddam**
2. **20321A1267 Sai Sushma Ganji**
3. **20321A1291 Sree Teja Lenkala**

## ANZ

1. **20321A1263 Sai Naga Ketan Bathi**
2. **20321A1286 Sidhvika Erra**
3. **20321A12A1 Surya Sri Sandhya Vaishnavi Kaligotla Joga**
1. **20321A12A8 Vaishnavi B**
2. **21325A1207 Praharshitha Ch**
3. **20321A1213 Bhavana Vantakala**
4. **20321A1227 Hrithika Athineni**
5. **20321A1259 Rupa Baddam**

# PLACEMENTS

## Concentrix

1. **20321A1269 Sandhya Modina**
2. **20321A1271 Sandhyarani Erigela**
3. **20321A1276 Satya Priya Reddy Bommareddy**
4. **20321A1283 Shreya Vuppala**
5. **20321A1288 Siri Boda**
6. **20321A1294 Srikitha Neeli**
7. **20321A1296 Srilekha Kambala**
8. **20321A12A0 Suprathika Patha**
9. **20321A12B1 Vaishnavi Palle**
10. **21325A1209 Sarika Thogithi**
11. **20321A1216 Chandu Priya Rajulapati**
12. **20321A1239 Laxmi Jahnavi Dammannapeta**
13. **20321A1246 Mohammad Nasera Thabassum**
14. **20321A1247 Momina Fathima**
15. **21325A1204 Harika Palle**
16. **21325A1206 Pavani Alampally**

## EXCELR

1. **20321A1203 Adithi Chittupolu**
2. **20321A1220 Divya Kanaka Laxmi Bandi**
3. **20321A1229 Jeevana Katta**
4. **20321A1230 Joshitha Kancharla**
5. **20321A1243 Manasa Mudavath**

# PLACEMENTS

## Salesforce

1. **20321A1204 - Anooja Vuppala**
2. **20321A1212 - Bhavana Reddy Mannem**
3. **20321A1214 - Bhavani Maha Laxmi Putsala**
4. **20321A1221 - Harika Cheedalla**
5. **20321A1236 - Krithika Reddy K**
6. **20321A1249 - Namitha Ch**
7. **20321A1281 - Shreya Amagowni**
8. **20321A12A5 - Thanmai Maringanti**
9. **20321A12A7 - Udayasri Shivakoti**
10. **21325A1212 - Shriya Kandukuri**

## Honeywell

1. **20321A1215 - Bindu Priya Pinikeshi**
2. **20321A1217 - Deekshitha Onteddu**
3. **20321A1224 - Harshitha Prathikantam**
4. **20321A1237 - Lahari Tipirishetty**
5. **20321A1238 - Laheeri Sabnekar**
6. **20321A1241 - Madhuri Sri P**
7. **20321A1244 - Manasvini Anumala**
8. **20321A1280 - Shreeya Bandaru**
9. **20321A1285 - Shriya Lenkalapally**
10. **20321A1293 - Sri Charitha Kalakonda**
11. **20321A1295 - Srilaxmi Burugu**
12. **20321A1297 - Srividhya Karnati**

# PLACEMENTS

## Alstom

**20321A1225 - Harshitha Yeluvaka**

## Unisys

**20321A1207 - Aparna Manda**

## Total Selections by Company

1. **Accenture - 9**
2. **Alstom - 1**
3. **Amazon - 3**
4. **ANZ - 9**
5. **Concentrix - 17**
6. **ExcelR - 5**
7. **Flipkart - 1**
8. **Honeywell - 9**
9. **Salesforce - 7**
10. **Unisys - 1**

# Gold and Silver Medals
# Attendance awards

**Merit Awards to students of II,III and IV B Tech**
**I sem for the Academic year 2023-24**
**Information Technology -A**

**Attendance Awards to students of II,III and IV B Tech**
**I sem for the Academic year 2023-24**
**Information Technology -A**

# Gold and Silver Medals
# Attendance awards

**Merit Awards to students of II,III and IV B Tech**
**II sem for the Academic year 2023-24**
**Information Technology -B**

**Attendance Awards to students of II,III and IV B Tech**
**II sem for the Academic year 2023-24**
**Information Technology -B**

# Gold and Silver Medals
# Attendance awards

**Gold and Silver Awards to students**
**Information Technology -A**

# Cyber Security Trends in 2025

In 2025, artificial intelligence (AI) and machine learning (ML) are playing a pivotal role in cyber security, especially in threat detection and automated response. AI-driven systems can now analyze vast amounts of data in real time to identify unusual patterns, helping security teams detect zero-day exploits and insider threats faster than ever. However, this advancement is a double-edged sword—cybercriminals are also using generative AI to create hyper-realistic phishing emails, deep fakes for impersonation, and even auto-generated malware code, making social engineering attacks more convincing and scalable.

As quantum computing edges closer to practical use, organizations are preparing by shifting toward quantum-resistant cryptography. This transition is crucial to ensure data remains secure against future quantum-based attacks that could potentially break current encryption standards. At the same time, the rise of cloud computing continues to reshape IT environments, and with it comes the need for more advanced cloud-native security solutions. Misconfigurations, unauthorized access, and lack of visibility in multi-cloud setups remain major concerns, pushing the adoption of tools like Cloud Security Posture Management (CSPM) and Cloud Workload Protection Platforms (CWPP).


The Zero Trust Architecture (ZTA) model is gaining widespread adoption, particularly in large organizations and government systems. Instead of assuming anything inside the network is safe, ZTA requires constant verification of users, devices, and access permissions. Alongside this, identity and access management (IAM) is becoming more sophisticated, integrating with biometrics and behavioral analysis to better secure digital identities. Meanwhile, the increasing number of connected devices in the Internet of Things (IoT) and operational technology (OT) sectors has introduced new vulnerabilities.

A notable shift is also happening in how organizations approach the human element of cyber security. Recognizing that people remain the weakest link, there's a growing emphasis on human-centric security. This includes personalized, engaging awareness training, simpler user interfaces, and tools designed to reduce "security fatigue."

A VASAVI SUJATHA
ASSISTANT PROFESSOR, IT

## AI + IoT with Image Processing: Transforming the Future

The fusion of Artificial Intelligence (AI), the Internet of Things (IoT), and Image Processing is revolutionizing modern technology. Each of these domains has advanced rapidly in recent years, and their integration is enabling machines and systems to become smarter, more responsive, and more capable than ever before. Together, they allow machines not only to sense the environment but also to interpret and act on that data in real time, transforming industries such as healthcare, agriculture, transportation, and security.

Artificial Intelligence is the ability of machines to mimic human intelligence and perform tasks such as learning, problem-solving, and decision-making. It includes branches like machine learning and deep learning, which are especially powerful in understanding patterns within visual data. The Internet of Things, on the other hand, refers to a network of physical devices that collect and share data over the internet. These devices can include sensors, cameras, and other embedded systems that provide real-time input from the physical world. Image Processing is a technique used to analyze and interpret images. When powered by AI, image processing becomes even more effective, as it allows machines to "see" and understand visual content much like a human would.

The combination of AI, IoT, and Image Processing leads to smart systems that can make intelligent decisions based on visual inputs. For example, a smart surveillance system can detect intruders by analyzing footage captured by IoT-enabled cameras and processed by AI algorithms. This eliminates the need for constant human monitoring and ensures a quicker response to threats. In the healthcare sector, the synergy of these technologies is making remote monitoring and diagnostics more accurate and accessible. Wearable IoT devices with built-in cameras can capture images of skin conditions or facial expressions, which AI then analyzes to detect early signs of disease or stress.

In conclusion, the integration of AI, IoT, and Image Processing is not just a trend—it's a powerful force shaping the future of technology. It enables machines to see, think, and act, transforming everything from personal gadgets to entire cities. As we continue to explore and develop these technologies, we move closer to a world where smart systems are seamlessly woven into the fabric of everyday life.

**M SRAVANTHI**
**ASST PROFESSOR, IT**

# Large Language Models (LLMs) in Education

Large Language Models (LLMs) like GPT-4 are playing an increasingly important role in transforming education, particularly in computer science and related disciplines. By offering personalized tutoring and feedback, LLMs cater to individual learning needs, allowing students to receive real-time, tailored explanations and guidance. These models are especially beneficial in programming education, where they assist students in generating code, debugging errors, and understanding complex algorithms. They can also explain code in natural language, helping learners break down difficult concepts. Moreover, LLMs are revolutionizing curriculum development by enabling educators to create customized lesson plans, quizzes, and teaching materials. These tools can also assist in academic writing, generating summaries of research papers, suggesting citations, and offering feedback on essays and reports. While the integration of LLMs brings immense advantages, such as increased efficiency and access to information, there are concerns about over-reliance on AI, the potential for model biases, and the ethical implications of data privacy. Despite these challenges, LLMs have the potential to significantly enhance the educational experience by providing students and educators with powerful tools for learning, teaching, and academic research. With further advancements, they are poised to reshape the way education is delivered, making it more interactive, personalized, and accessible.

In 2024, a systematic literature review highlighted the increasing role of LLMs in education. It explored how these models can assist in:

- Code generation and debugging.
- Automated grading and feedback.
- Personalized tutoring and mentoring.

This study underscores the transformative potential of LLMs in reshaping educational methods and student-teacher interactions in the coming years.

Conclusion:

The integration of LLMs in education, especially in fields like computer science, offers significant advantages in terms of personalized learning, enhanced teaching resources, and real-time support.

S REVATHI
ASSOC PROFESSOR, IT

# Seamless Digital Engineering

Seamless Digital Engineering refers to the integration of various digital tools, technologies, and processes into a unified system to streamline product development and improve efficiency. In industries like manufacturing, automotive, aerospace, and construction, this concept focuses on creating a smooth flow of information and collaboration across different stages of the product lifecycle, from design to production and maintenance.
The core idea behind seamless digital engineering is to eliminate silos between different engineering functions by integrating design, simulation, testing, and production processes into a single, cohesive workflow. This is achieved through the use of digital twins, advanced simulation models, and cloud-based platforms that allow engineers to collaborate in real-time, regardless of geographical location.

One of the key elements of seamless digital engineering is Model-Based Systems Engineering (MBSE), which uses models instead of traditional documents to represent system components and their interactions. This shift enables more efficient communication among stakeholders, reduces errors, and allows for faster decision-making. Additionally, MBSE promotes the use of digital prototypes, enabling teams to test and validate designs before physical production begins, thus reducing costs and time-to-market.

In practice, seamless digital engineering helps companies to:
**Reduce complexity**: By integrating different processes and tools, it simplifies the design and development process, making it easier to manage complex projects.
**Enhance collaboration**: Engineers, designers, and manufacturers can work together more effectively, leading to better solutions and quicker responses to challenges.
Improve quality and reduce errors: Real-time simulation and testing allow for the identification and resolution of issues early in the design phase, leading to higher-quality products.
**Accelerate innovation**: With integrated systems and faster feedback loops, companies can experiment with new ideas and bring innovations to market more quickly.

However, the transition to seamless digital engineering comes with challenges. Organizations must invest in advanced technologies, ensure the integration of diverse software systems, and train teams to effectively use these tools.

DR M SANDHYA RANI
ASSOC. PROFESSOR, IT

# AI-powered Classrooms

AI-powered classrooms represent the next step in the evolution of education, where artificial intelligence is deeply integrated into the learning environment to enhance both teaching and learning experiences. These classrooms leverage AI tools and technologies to create personalized learning paths, automate administrative tasks, and improve the overall efficiency and effectiveness of education.

One of the key aspects of AI-powered classrooms is personalized learning. AI systems analyze student data, including learning styles, progress, and performance, to tailor educational content to each individual's needs. This ensures that every student receives the right level of support and challenge, helping them learn at their own pace.

Another significant benefit of AI-powered classrooms is automation of administrative tasks. AI tools can handle repetitive tasks like grading assignments, tracking attendance, and managing schedules. This frees up teachers' time, allowing them to focus more on delivering high-quality instruction and engaging with students. Automated grading systems, for example, can evaluate assignments, quizzes, and even open-ended responses, providing instant feedback to students and reducing teachers' workload.

Intelligent tutoring systems are also a crucial component of AI-powered classrooms. These systems function as digital tutors, assisting students with difficult topics or providing extra practice in areas where they are struggling. AI can also enable collaborative learning by creating group activities or projects based on students' skills and preferences. It can recommend peers with complementary abilities for group work, fostering teamwork and knowledge sharing.

In terms of content delivery, AI can help design more interactive and engaging lessons. It can incorporate gamification, simulations, and virtual or augmented reality (VR/AR) into learning, making lessons more immersive and enjoyable. For example, AI can power virtual labs where students can experiment in a controlled, digital environment, enhancing hands-on learning in subjects like chemistry, physics, or engineering.

Furthermore, AI-powered classrooms facilitate data-driven decision-making. Teachers and school administrators can use data analytics to monitor trends in student performance, track engagement.

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# TECH RADAR - 2024

A technical magazine is a periodical publication that focuses on providing in-depth information, analysis, and updates on specific areas of technology, engineering, and science. These magazines cover a wide range of topics, including the latest advancements in software, hardware, artificial intelligence, cybersecurity, robotics, and telecommunications. They often feature articles written by industry experts, product reviews, case studies, and interviews with thought leaders, offering valuable insights for professionals, researchers, and enthusiasts in the field. Technical magazines serve as a resource for keeping up-to-date with emerging trends, best practices, and breakthroughs in technology, while also offering practical advice and solutions for real-world challenges.

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***"Girls who are educated become women who are influential." - Darlene Turner***