



NANDHA COLLEGE OF TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY



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ACADEMIC 2024 – 2025 ODD
TECHNICAL MAGAZINE

ABOUT THE DEPARTMENT

The Department of Information Technology, established in 2008, offers a dynamic B.E. degree program designed to meet the evolving demands of the tech industry. With a strong foundation of well-equipped laboratories and a team of highly qualified and experienced faculty members, the department ensures a holistic academic experience for its students.

To bridge the gap between academia and industry, the department has signed Memorandums of Understanding (MoUs) with reputed companies, enabling students to gain practical exposure and industry insights.

VISION

- To emerge as a center of excellence in Information Technology, upholding global standards in academics and research, and serving the ever-evolving needs of society and industry.

Mission

- To impart value-based education in Information Technology and produce competent, innovative, and high-quality professionals to meet the growing demands of the industry and society.
- To equip students with the latest technical skills through continuous learning and training, empowering them to conduct meaningful research that addresses real-world challenges.



STUDENT'S ARTICLES

"EDGE AI: TRANSFORMING REAL-TIME INTELLIGENCE"

- Edge AI, the fusion of Edge Computing and Artificial Intelligence, is reshaping how data is processed by bringing intelligence closer to the source. Unlike traditional cloud-based systems, Edge AI enables devices like cameras, drones, and sensors to analyze data on-site, reducing latency and improving responsiveness. This is vital in sectors like autonomous vehicles, where milliseconds matter, and in smart factories that require real-time decision-making. With AI models running on devices like NVIDIA Jetson and Google's Coral, Edge AI is enabling privacy-conscious applications from facial recognition to predictive maintenance. In healthcare, wearable devices powered by Edge AI can monitor patient vitals in real time, while in agriculture, drones with AI capabilities detect crop health instantly. Despite hurdles like energy efficiency and model optimization, innovations in TinyML and edge-optimized chips are pushing this field forward.



BY SANJAITHUN S

II - IT

INAGURATION FUNCTION



"THE FUTURE OF XR TECHNOLOGY UNFOLDS"

- Extended Reality (XR), which includes Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR), is revolutionizing industries by blending the digital and physical worlds. AR enhances real environments with interactive digital overlays, while VR immerses users in fully virtual spaces, and MR seamlessly integrates digital elements into real-world interactions. From surgical AR overlays and VR therapy in healthcare to AI-powered AR gaming and immersive VR eSports, XR is transforming how we work, play, and interact. Apple's Vision Pro and Meta's Quest 3 are pushing spatial computing to new heights, while the Metaverse is evolving into a hub for digital economies, events, and even virtual real estate. Despite challenges like hardware costs and security risks, advancements in lighter AR glasses, 5G-powered XR streaming, and AI-driven interactions are making XR more accessible. As this technology evolves, education, business, and entertainment will enter a new era where physical and digital experiences merge seamlessly.



BY GIRIDHARAN S.V

III IT

REVOLUTIONIZING THE WORLD WITH AI & AUTOMATION

Artificial Intelligence (AI) and Automation are transforming industries, enhancing efficiency, and reshaping the way we live and work. From AI-powered chatbots and self-driving cars to smart assistants and robotic process automation (RPA), these technologies are streamlining operations and reducing human effort. In healthcare, AI-driven diagnostics and robotic surgeries are improving patient care, while in finance, automated trading and fraud detection systems are enhancing security. AI is also revolutionizing manufacturing with intelligent robots and predictive maintenance, reducing downtime and increasing productivity. However, challenges such as data privacy concerns, ethical AI development, and job displacement must be addressed to ensure responsible innovation.



BY HARIHARAN S
III IT

VALEDICTORY FUNCTION



BLOCKCHAIN: BEYOND CRYPTOCURRENCY

- Blockchain technology is evolving far beyond its initial use in cryptocurrencies like Bitcoin and Ethereum. Today, it is revolutionizing industries by offering secure, transparent, and decentralized solutions for various applications. In supply chain management, blockchain ensures tamper-proof tracking of goods, enhancing trust and reducing fraud. The financial sector benefits from faster, more secure transactions without intermediaries, reducing costs and improving efficiency. In healthcare, blockchain secures patient records and medical data, allowing seamless and safe information sharing. Even voting systems are exploring blockchain to enhance election security and prevent fraud. Despite challenges like scalability and regulatory concerns, continuous advancements in blockchain are paving the way for a future where data security, trust, and decentralization redefine multiple industries.



BY ILANGO T
III IT

SEMINAR - ON



NEXT-GEN CYBERSECURITY: AI-POWERED DEFENSES

As cyber threats grow more sophisticated, Artificial Intelligence (AI) is revolutionizing cybersecurity by providing real-time threat detection, automated response systems, and predictive analytics. AI-driven security solutions analyze massive datasets to identify anomalies, detect malware, and prevent cyberattacks before they occur. Machine learning algorithms enhance intrusion detection systems (IDS) and endpoint security, adapting to new threats dynamically. AI-powered chatbots assist in automating security responses, while deep learning models improve fraud detection and identity verification. However, cybercriminals are also leveraging AI for automated attacks and deepfake fraud, making AI vs. AI cybersecurity battles a growing concern. The future of cybersecurity lies in AI-enhanced defenses, ethical hacking, and robust regulatory frameworks to protect digital ecosystems from evolving cyber threats.



BY IRFANA FARHATH

III IT

NATIONAL LEVEL TECHNICAL SYMPOSIUM



6G TECHNOLOGY DEVELOPMENT: THE NEXT WAVE OF CONNECTIVITY

As 5G networks continue to expand globally, 6G technology is already in development, promising ultra-fast speeds, near-zero latency, and revolutionary applications. With expected speeds 100 times faster than 5G, 6G will enhance smart cities, autonomous vehicles, augmented reality (AR), and AI-driven communications. Researchers aim to integrate terahertz (THz) frequencies and AI-powered network optimization for seamless connectivity. Countries like China, the U.S., and South Korea are heavily investing in 6G research, with projections for rollout around 2030.



BY MOHANRAJ K
III IT

SEMINAR ON



Brain-Computer Interfaces (BCI)

- Brain-Computer Interfaces (BCI) are transforming the way humans interact with technology by enabling direct communication between the brain and digital devices. Using neural signals, BCIs allow individuals to control computers, prosthetics, and even smart environments with just their thoughts. This breakthrough technology holds immense potential in healthcare, assisting patients with paralysis to regain mobility through mind-controlled prosthetics. Companies like Neuralink, Blackrock Neurotech, and Kernel are pioneering research in non-invasive and implantable BCIs, paving the way for enhanced cognition, memory augmentation, and seamless AI integration.



BY VIKRAM K
III IT

Craft



By KARTHEEPAN S
III IT

"Elegy of Solitude"

தனிமை

தனிமை என்றால் துன்பமா?
தோழமையில் மலர்ந்த மௌனமா?
நேரம் சிந்திக்கத் தோன்றும் போது,
நெஞ்சில் எழும் ஓரெண்ணமா?

நட்பில் பிரிந்து நிழலாகி,
நினைவில் மட்டும் வாழ்வதா?
சோகமெனும் கரையில் நின்று,
சந்தோஷத்தால் மூழ்குவதா?

தனிமையின் சுவை அறிய,
கடலில் மூழ்க வேண்டும்!
ஆழம் எவ்வளவு என எண்ணி,
மீண்டும் வர வேண்டும்!

மூழ்கிவிட்டோம் என்று எண்ணாதே,
மூழ்கும் நேரம் தான் பாடம்!
தனிமையிலே வளர்ந்தபோது,
உன்னை நீ கண்டுகொள்ளலாம்!

BY Asaraf Ali A

ART



By MOHANAPRIYA M
III IT

Henna



BY JANANI E
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VOLUME 6^{EVEN}

TECHNICAL MAGAZINE
ACADEMIC YEAR 2024-2025



ABOUT THE DEPARTMENT

Volume:6



The department of IT was started in the year 2008 and offers B.E degree programme. The department has various laboratories and well-qualified and experienced faculty. The department has signed the MoU with leading companies. Information Technology is a worldwide accepted educational instrument designed to increase the effectiveness and efficiency of the educational system. Computers are mainly used to improve the learning system. Online learning and remote training are among new education forms. With a right combination of theory, practical, projects (hands-on) and industrial training in the areas such as Data science, Artificial Intelligence and Machine Learning, Cloud essentials, Full stack development this programme has well placed itself as a well-known preference for the students.

VISION

To be a center of excellence in the field of Information Technology with Global standards of Academic and Research for the need of Society and Industry.

MISSION

To provide value based Information Technology education and produce innovative, competent and high quality IT professionals for the growing demand of Society and Industry.

To facilitate the students for the constant upgradation of Technical expertise and perform research activities to solve the real world problems.

STUDENTS 'S ARTICLES

" Sustainable IT & Green Computing "



Sustainable IT and Green Computing refer to the practice of designing, using, and managing information technology in a way that minimizes environmental impact and promotes energy efficiency. As the demand for digital services grows, so does the energy consumption of data centers, networks, and devices. To address this, organizations are implementing strategies such as server consolidation, virtualization, efficient cooling systems, and the use of renewable energy sources like solar and wind. Software development is also evolving, with an emphasis on writing efficient code that reduces processing requirements and extends device life. Furthermore, lifecycle management of IT equipment—through recycling, refurbishing, and responsible disposal—helps reduce electronic waste (e-waste). Cloud computing is contributing as well by enabling shared resources and reducing the need for on-premise hardware. Sustainable IT is not only a technological shift but also a cultural and organizational change, requiring awareness, policies, and commitment to eco-friendly practices. Embracing green computing helps businesses lower costs, comply with environmental regulations, and meet corporate sustainability goals while building a greener digital future.

BY RUBAN RAJ

II IT B



INAGURATION FUNCTION

“Privacy-Enhancing Technologies (PETs)”



Privacy-Enhancing Technologies (PETs) are tools and methods designed to protect user data and ensure privacy while still enabling valuable data processing and analysis. As concerns around data breaches, surveillance, and misuse of personal information grow, PETs have become essential in fields like finance, healthcare, and artificial intelligence. These technologies include techniques such as homomorphic encryption, which allows data to be processed without ever being decrypted; differential privacy, which adds mathematical noise to datasets to prevent individual identification; and federated learning, where machine learning models are trained across decentralized devices without centralizing the data itself. Zero-knowledge proofs are another powerful PET, allowing one party to prove they know a value (like a password or identity) without revealing the actual value. PETs are crucial for complying with global data protection laws like GDPR and HIPAA, and they help build user trust by prioritizing data security and confidentiality. As digital ecosystems grow more complex, PETs will play a critical role in enabling safe and ethical data usage.

BY UMA SHANKAR

II IT B



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POOJA CELEBRATION

Edge AI & On-Device Intelligence



Edge AI and On-Device Intelligence refer to the deployment of artificial intelligence models directly on local devices—such as smartphones, IoT sensors, cameras, drones, and industrial machines—rather than relying on centralized cloud servers. This approach enables faster data processing, reduced latency, improved privacy, and less dependency on internet connectivity. By performing AI tasks like image recognition, speech processing, anomaly detection, or decision-making directly at the edge, systems can respond in real time and operate even in remote or bandwidth-limited environments. Examples include smart assistants that process voice commands locally, autonomous vehicles interpreting sensor data instantly, or health monitoring devices analyzing vital signs without sending data to the cloud. Edge AI also enhances data security, since sensitive information doesn't need to be transmitted over networks. This technology is becoming increasingly important in applications where speed, reliability, and privacy are critical, and is being powered by more efficient chips (like Apple's Neural Engine or NVIDIA Jetson) and lightweight AI models tailored for edge devices.

BY VISHWA

II IT B



PONGAL CELEBRATION

“Digital Twins in IT Operations”



Digital Twins in IT Operations are virtual replicas of physical systems, networks, or infrastructure that are used to monitor, analyze, and optimize performance in real time. In the context of IT, digital twins simulate everything from data centers and cloud environments to entire enterprise IT ecosystems. These models are continuously updated with real-world data from sensors, logs, and monitoring tools, allowing IT teams to visualize system behavior, detect anomalies, predict failures, and test changes without impacting the live environment. For example, a digital twin of a server cluster can help forecast hardware failures or simulate the effects of a software update before it's deployed. By providing deeper insight into system performance, digital twins enable more proactive, predictive maintenance and better decision-making. They are increasingly being integrated with AI and machine learning to enhance automation and accuracy. As IT infrastructures grow more complex, digital twins are becoming essential tools for reducing downtime, improving service delivery, and managing risk effectively.

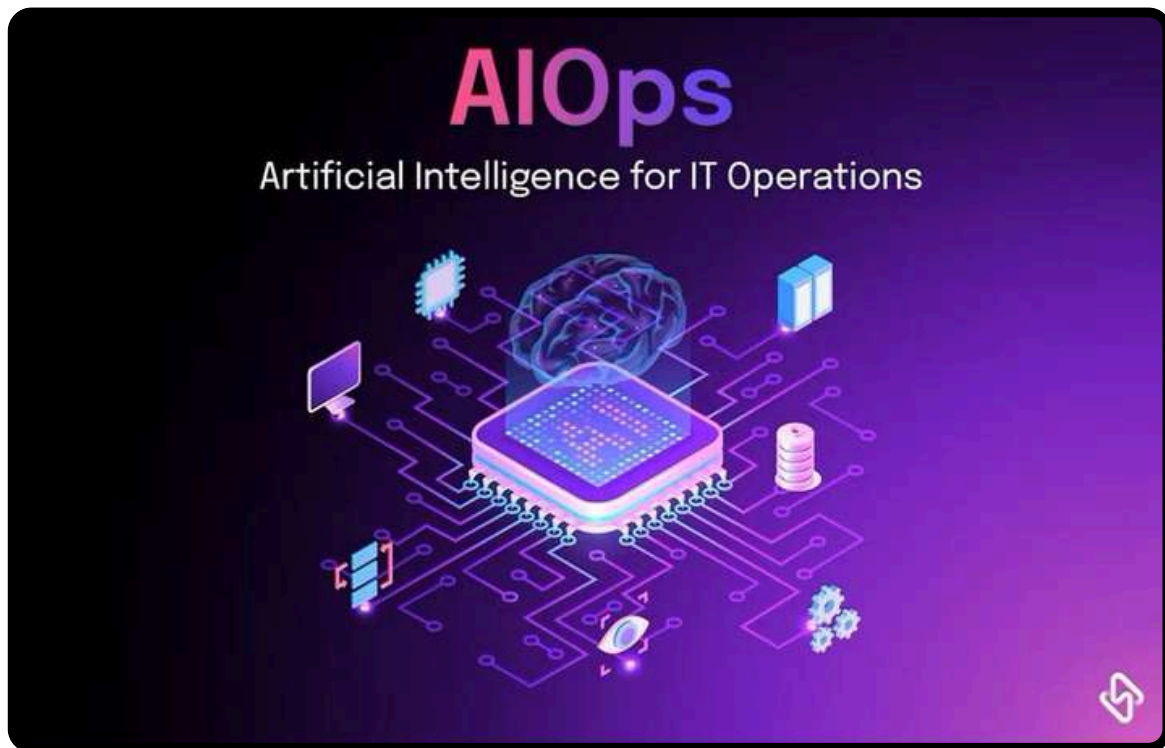
BY GOVARDAN

II IT A



NATIONAL LEVEL TECHNICAL SYMPOSIUM

“AI in DevOps (AIOps)”



AI in DevOps, commonly referred to as AIOps (Artificial Intelligence for IT Operations), is the integration of artificial intelligence and machine learning into DevOps processes to automate and enhance IT operations. AIOps platforms collect and analyze vast amounts of data from various IT environments—including logs, metrics, and event data—to detect patterns, predict incidents, and recommend or execute automated responses. This reduces the need for manual monitoring and troubleshooting, significantly improving system reliability and reducing downtime. For example, AIOps can automatically identify the root cause of performance issues, correlate alerts across multiple systems, or even initiate self-healing workflows without human intervention. It enables faster release cycles, smarter resource allocation, and better collaboration between development and operations teams. As systems become more complex and data volume increases, AIOps is becoming essential for maintaining high availability, scalability, and performance in modern DevOps environments.

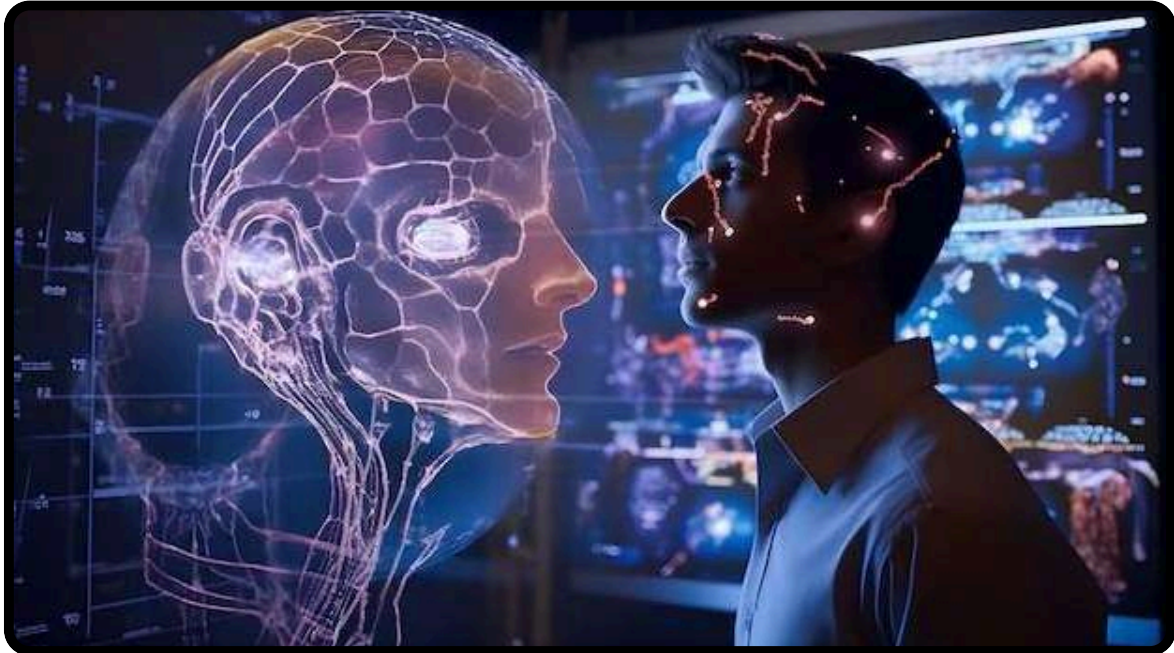
BY MOHANRAJ K

III IT



HACKATHON (HACK THE VAULT)

“Web3 and Decentralized Identity (DID)”



Web3 and Decentralized Identity (DID) represent a shift toward a more secure, user-controlled internet where individuals own and manage their digital identities without relying on centralized authorities like Google, Facebook, or government databases. In a Web3 environment—built on blockchain and decentralized networks—DIDs enable users to prove who they are using cryptographic keys instead of usernames and passwords. These identities are portable, verifiable, and privacy-preserving, allowing people to authenticate themselves across platforms without exposing unnecessary personal information. For example, instead of sharing your birthdate to prove you're over 18, a DID could simply confirm that fact without revealing the actual date. This approach reduces data breaches, enhances privacy, and returns control of identity to individuals. DIDs are especially useful in areas like online voting, financial services, healthcare, and decentralized apps (dApps). As the internet evolves, DID is expected to be a key part of the infrastructure supporting trust, security, and digital freedom.

BY VIKRAM K

III IT



By KARTHEEPAN S
III IT

வெற்றியின் ரகசியம்..!

புத்தகங்களை துணைகொள்..

உடலுழைப்பை அதிகரி

குளிர் நீரில் குளி

கொஞ்சமாய் சாப்பிடு.

இரவு உறங்கும் முன்

நெடுந்தொலைவு நட.

உணவில் கீரையை சேர்த்துக்கொள்
எத்தனை வலித்தாலும் அழாதே.. சிரி.

ஆத்திரம் அகற்று..

கேலிக்கு புன்னகை தா.

கோபத்திற்கு மௌனத்தைக் கொடு.

அலட்சியப்படுத்தினால் விலகி நில்.

அன்பு செய்தால் நன்றி சொல்.

இதமாகப் பேசு..



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