## Vision, Mission and Objectives 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 environment in students

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

## Vision, Mission and Objectives of the Department

### VISION
- To be renowned for education in Artificial Intelligence & Machine Learning in Karnataka state moulding students into professional engineers

### MISSION
- Impart rigorous training to generate knowledge through state-of-the-art concepts and technologies in Artificial Intelligence and Machine Learning
- Mould students to be technically competent through innovation and leadership
- Inculcate values of professional ethics, social concerns, environment protection and life-long learning
- Establish centres of excellence in leading areas of computing and artificial intelligence

### OBJECTIVES
### After 2-3 years of graduation, students will have the ability to:

- Apply appropriate theory, practices and tools to provide solutions for multi disciplinary challenges
- Function effectively in the workplace for professional growth
- Adapt, contribute and innovate new technologies in the key domains of Artificial Intelligence and Machine Learning during higher studies/ product development

### Dedicated to......

Ratan Tata, an Indian industrialist, philanthropist, and former chairman of Tata Sons, known for his visionary leadership that transformed the Tata Group into a global powerhouse. He played a key role in launching Tata Indica (1998) and Tata Nano (2008), the world's most affordable car, showcasing his commitment to innovation. Under his leadership, The Tata Group expanded globally, acquiring Tetley (2000), Corus (2007), and Jaguar Land Rover (2008), marking India's presence in international markets. Through Tata Consultancy Services (TCS), he played a vital role in making India a global IT hub. He has also invested in startups like Paytm and Ola, fostering India's entrepreneurial ecosystem. A firm believer in ethical leadership, he has contributed significantly to philanthropy, AI research, and renewable energy. His efforts through Tata Trusts have supported advancements in education, healthcare, and rural development. Ratan Tata has received numerous accolades, including the Padma Bhushan (2000) and Padma Vibhushan (2008), some of India's highest civilian honors.

### Inside
### AIML QUEST

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## Editor's Desk…..

**Dear readers, we welcome you to the QUEST of AIML**

We are pleased to welcome you to the latest edition of our AIML Department Newsletter. Artificial Intelligence & Machine Learning continue to redefine the boundaries of innovation, reshaping industries and inspiring a new wave of creativity and technological advancement. In this issue, we bring you a rich blend of insights, achievements, and updates from our department. From cutting-edge research breakthroughs to engaging events, we aim to celebrate the talent, passion, and hard work of our faculty and students.

We also explore thought-provoking topics such as Consciousness, Emotions & AI, Touchless Technology and Holograms with AI, and how Neuroscience is Inspiring the Future of AI. Plus, discover how AI is Turning DNA into the Next Cloud.Don't miss our engaging 'AI Quiz' and 'Riddle' columns—designed to spark curiosity and challenge your mind!

### Happy Reading…!!

## Department Overview

The Department of Artificial Intelligence & Machine Learning (AIML) is approved by AICTE, and affiliated toVTU from the academic year 2020-21. We started our exciting journey in the year 2020 with the department offering an undergraduate B.E. program with an intake of 120 students.

The Department boasts of a well qualified teaching faculty with rich research, teaching and industrial experience and is committed to impart rigorous training to students to generate knowledge through state-of-the-art concepts and technologies in AIML, and transform the Department as a leader in imparting AIML education and research.

The Department practices Outcome-Based Education (OBE) right from the inception and has an adequate infrastructure with state-of-the-art laboratories and other supporting facilities to provide enhanced learning environment. The Department attracts the best of engineering aspirants from all over the country.

Industry 4.0 demands smart systems integrated with intelligence to have a better human-machine interface. To cope with the emerging industrial demands, it is expected to bring translational skills among the students of the Artificial Intelligence and Machine Learning undergraduate programme to meet the industry's expectations.

## Technical Articles

## Consciousness, Emotions & AI: Can Machines Feel?

Imagine this: it's late, you're exhausted from classes and deadlines. You mutter to your voice assistant, "I'm so tired of everything today." Instead of its usual flat "I'm sorry to hear that," it pauses and softly replies:

"It sounds like today has been overwhelming. Want me to play your favourite playlist?"For a moment, it feels......almost human.

This glimpse belongs to affective computing, a field pioneered by Prof. Rosalind Picard at MIT Media Lab. It's not about giving machines real feelings, but teaching AI to recognize, interpret, and respond to human emotions, making interactions feel more natural and empathetic.

**Reading between the lines: How AI senses feelings**

Human communication is layered: words, tone, facial expressions, gestures. While these were once invisible to machines, advances in machine learning have changed that. Today's AI can analyse voice pitch, speech rhythm, micro-expressions, or even physiological signs like heart rate to estimate how we feel.At MIT Media Lab, wearables can detect rising stress, sometimes before we're aware of it ourselves. Digital assistants and robots can adjust their responses accordingly offering comfort or distraction when we're upset.But remember: machines don't feel emotions. They detect data patterns and respond in ways designed to seem empathetic. The difference is subtle but profound.

**The heart of the question: What does it mean to "feel"?**

This leads us to the age-old question: Can a machine truly feel emotions like a human? Philosophers talk about qualia, the raw, subjective experience of emotions: the warmth of sunlight, the sting of embarrassment, the thrill of success. AI, no matter how advanced, lacks this inner life. It won't feel nervous before exams or relief afterward. Yet, if an app senses your stress and offers a breathing exercise, or a study chatbot cheers you late at night, it can feel helpful, even comforting.

**Where it matters: Real-world applications**

Emotionally aware AI isn't just clever, it can make a difference:
Education: Adaptive tutoring systems can sense confusion or boredom and adjust teaching methods.
Mental health: Chatbots spotting signs of anxiety or depression can prompt users to seek help.
Elder care: Companion robots can reduce loneliness and alert caregivers to signs of distress.
Everyday life: Your calendar app might notice rising stress and suggest postponing non-urgent tasks.

**Consciousness: Beyond simulation**

Some argue future AI could become so complex it develops awareness. Others believe machines will always remain sophisticated tools: good at imitating empathy, but never experiencing it. Either way, exploring these questions helps us reflect on what makes humans unique: our capacity to feel, care, and connect.

**Looking forward: A kinder future**

Can machines truly feel? For now: no. But can they help us feel understood? Absolutely. Affective computing can make technology more inclusive, supportive, and human-centred, not to replace real connection, but to amplify it. In teaching machines to recognize our emotions, perhaps we'll learn to better understand ourselves.

**- Shruddha S N (1BG22AI099), 6ᵗʰ Sem**

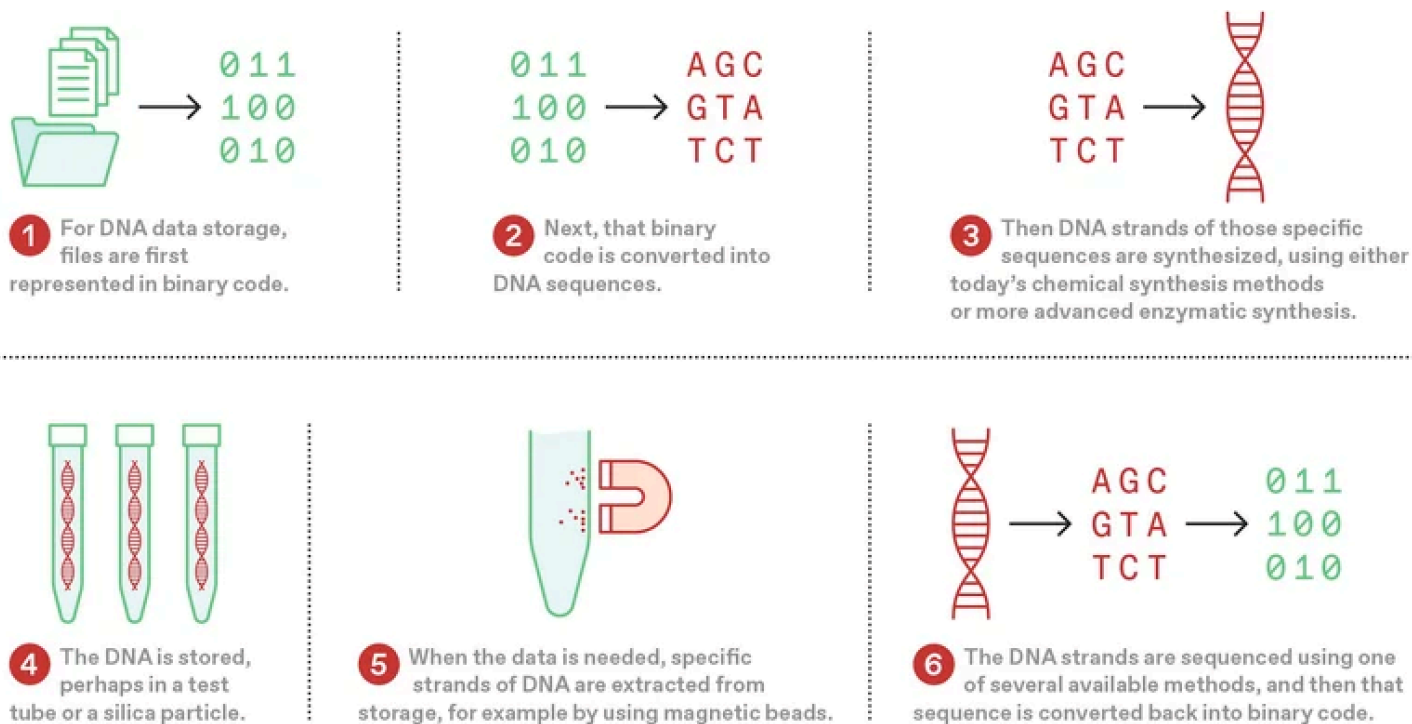## Code of Life, Code for Life: How AI is Turning DNA Into the Next Cloud

Picture a future where the contents of an entire university library, a telescope's daily observations, and every cat video ever uploaded fit into a couple of tiny transparent vials stored in a fridge. There would be no humming data centres, no sprawling rows of hard drives, just strands of synthetic DNA designed to hold information in the order of the nucleotides. What feels like science fiction is already happening. Researchers are using DNA as a long-lasting data seat, and artificial intelligence is doing the heavy lifting, translating zeros and ones into chemical sequences and fine-tuning the process so errors stay near zero.

**DNA as a Material for Storage**

Binary code, or the 0s and 1s of computers, is converted into the four-letter genetic alphabet—A, T, C, and G—in order to store DNA data. In a lab, these sequences are subsequently synthesized into actual DNA strands. A fraction of the space needed by modern storage systems can be occupied by drying and storing this synthesized DNA in tiny vials. In theory, more than 200 petabytes of data can be stored in one gram of DNA. More significantly, DNA is incredibly stable in contrast to hard disks, which deteriorate after a few years. Although the idea is beautiful, the way it is carried out is quite intricate. This is where machine learning and artificial intelligence come into play—not as theoretical instruments, but as fundamental, useful technologies.

## How AI Makes DNA Storage Possible

Noise, mutations, and sequencing errors are some of the problems that arise while storing data in DNA. By creating optimized encoding schemes that increase stability and lower mistakes, AI helps address these issues. Like molecular spell-checkers, deep learning models like CNNs and RNNs fix insertion, deletion, and substitution mistakes. Reinforcement learning balances accuracy, redundancy, and cost in encoding schemes to identify the best trade-offs. To improve retrieval, NLP models like as BERT are modified to forecast nucleotide patterns. Additionally, synthetic sequences that preserve data density and biological viability are produced using GANs.

011
100
010

1  For DNA data storage, files are first represented in binary code.

011    AGC
100 →  GTA
010    TCT

2  Next, that binary code is converted into DNA sequences.

AGC
GTA →
TCT

3  Then DNA strands of those specific sequences are synthesized, using either today's chemical synthesis methods or more advanced enzymatic synthesis.

4  The DNA is stored, perhaps in a test tube or a silica particle.

5  When the data is needed, specific strands of DNA are extracted from storage, for example by using magnetic beads.

AGC    011
GTA →  100
TCT    010

6  The DNA strands are sequenced using one of several available methods, and then that sequence is converted back into binary code.

## Present Evidence and Practical Application

These are innovations in the real world. The first completely automated DNA data storage system was constructed in 2019 by Microsoft and the University of Washington, utilizing AI for encoding, indexing, and retrieval. A full book, pictures, and code were accurately saved in DNA by Harvard researchers. Data-encoded DNA was included into 3D-printed items by ETH Zurich's "DNA of Things" project for future retrieval. Startups like Catalog DNA provide quicker, more scalable, and  affordable storage options by compressing and mapping data into biochemical instructions for enzymatic DNA synthesis using machine learning.

## Emerging Uses in Practice Today

Applications are appearing in a variety of fields. DNA is being investigated by governments and academic organizations as a long-term archive for records that need to be kept safe from natural disasters and hardware deterioration. Because of its stability, DNA can be used in space missions where traditional storage methods might not hold up against radiation and high temperatures. It provides a tamper-proof and incorruptible way to store critical evidence in forensic science.

## A New Era in Memory

DNA provides a timeless and scalable answer in a world where data is abundant (zettabytes are created annually) and current storage technologies are unable to keep up. It challenges us to reconsider memory's future as something natural, graceful, and timeless rather than as something enclosed in metal boxes and plastic shells. We are not just copying biology, but merging with it as artificial intelligence drives the field, developing systems that store information in the same way that life is stored in nature.

-**Disha V Kumar(1BG22AI028),6**[th]**Sem**

# Touchless Tech and Holograms: Redefining Edutainment with AI

Holography brings 3D images into the real world with stunning precision, letting users view and touch digital models in any position without headsets. Think of a group of engineers standing around a hovering holographic robot arm, adjusting its joints and examining its components in the air. Not only do these images explain, they surround. By turning obscure engineering or mechanical concepts into vibrant models, holography deepens comprehension, facilitates collaboration, and stokes imagination. It turns offices into intelligent laboratories where one learns, designs, and makes decisions in real-time.

### Holograms in Learning: Bringing Knowledge to Life — In 3D



Holography brings the 3D images into the physical world in stunning detail, and users can manipulate the digital models in three dimensions from any angle—no headsets needed. By creating advanced engineering or mechanical concepts into living, interactive models, holograms make learning simpler, ignite collaboration, and drive innovation. They transform workplaces into dynamic labs where learning, designing, and decision-making happen in real-time.

### Touchless Technology: Interacting Without Limits

Touchless technology, such as gesture recognition, motion sensing, and voice control, allows people to interact with digital information in a natural, contactless manner. Virtual classroom students can rotate 3D objects, turn virtual pages, or invoke actions with a sweep of the hand or a verbal command. This contact-free interaction enhances hygiene, accessibility, and user experience, particularly in communal spaces such as schools or museums.



Beyond education, touchless technology is revolutionizing retail via virtual fitting rooms, improving healthcare, and simplifying shopping flows. It's safe, intuitive, and natural. As these systems improve, they learn from user activity, adapting in real time to make interactions more compelling and personalized, providing a smoother, more human-like digital experience.

### AI and Machine Learning: The Invisible Engine

Immersive experiences are enabled by artificial intelligence and machine learning, which render systems increasingly responsive and intelligent. AI enables real-time motion tracking and gestures, real-time holographic image adjustment based on users' points of attention, and dynamic content. AI monitors students' activity, detects patterns, and modulates learning speed in educational environments—offering more detailed explanations or slowing down based on needs. It does not simply respond; it learns from each session, thus improving the effectiveness, fun, and personalization of future sessions for the user.

### Beyond Classrooms: Real-World Impact

This mix of technologies is revolutionizing other sectors too:

- Retail adopts virtual fitting rooms for contactless, safe fashion experience.
- Museums animate ancient civilizations through holograms and gestures.
- Medical training is augmented by realistic, reproducible holographic simulation.
- Corporate trainings have become more interactive and engaging using 3D simulations.
- Heritage tourist destinations and sites use holographic guides to deliver enhanced, multilingual tourist experiences.
- Events and exhibitions use touchless, AI-powered screens to entice and interact with audiences.
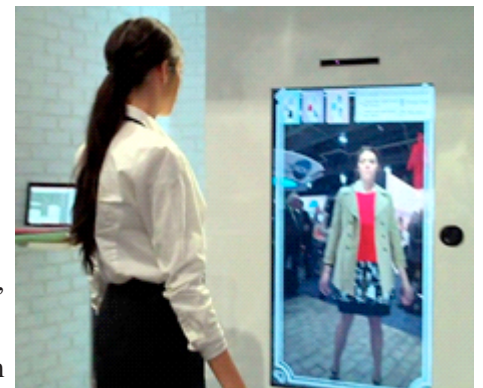
**A Glimpse Into the Future**

With technology becoming affordable and AI becoming intelligent, touchless, immersive learning will be the future. Students will visit far-off galaxies, study virtual organs, or perform experiments with a wave of the hand but never on a device. This future brings together ease, accessibility, and interactivity, powered by AI.

**A More Human Way to Learn**

By combining holography, gesture controls, and AI, we're not just updating classrooms—we're transforming the way people engage with knowledge. These technologies make learning more human, more dynamic, and more natural. In this new world, learning isn't something you hear or see, it's something you feel.

**-Lahari V Ravindranath (1BG22AI047),6th Sem**

# Brain to Machine: How Neuroscience is Inspiring the Future of AI

Have you ever thought about how you instantly recognize a face or remember Virat Kohli's historic knock against Pakistan?

These simple things are driven by the most complex and smart system we possess — The Human Brain. With more than 86 billion neurons continuously sending signals and changing in response to experience, the brain not only takes information in but also enables us to feel, think, and learn from the world around us. This biological superstar has been the inspiration for one of the most promising new technology frontiers of today: artificial intelligence (AI). As AI continues to evolve, researchers are increasingly turning to neuroscience for inspiration on how to design machines that think, learn, and adapt more like we do.
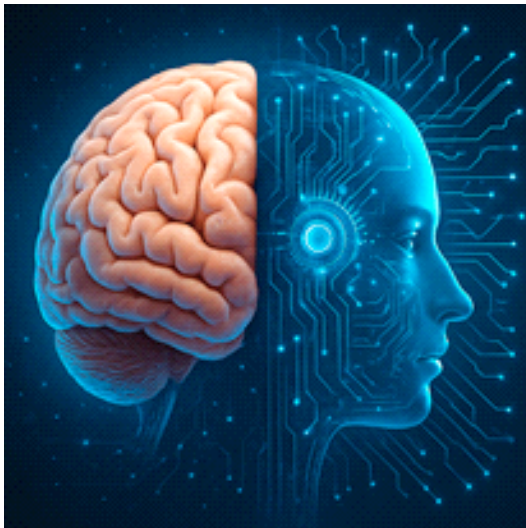


The brain's ability to rewire itself, a phenomenon known as neuroplasticity — inspired the creation of Artificial Neural Networks (ANNs), models that simulate how neurons interact and learn through repetition. Similarly, while a child may learn to recognize a cat with time, ANNs have the capability to be trained on big data to recognize patterns and make choices. Brain-inspired mechanisms such as self-attention are utilized by sophisticated AI systems like ChatGPT to pay attention to the inputs, whereas reinforcement learning, which is human-like trial-and-error learning, was employed for training AlphaGo, the AI that beat a world champion at Go famously. In the meantime, state-of-the-art research delving into Spiking Neural Networks (SNNs) modelled on the actual neuron firing behaviours and Brain-Computer Interfaces (BCIs) that are meant to enable thought-controlled manipulation of machines — hold-out hopes for revolutionizing accessibility and neurotechnology.

Beneath these developments, however, the question remains: can AI really think like us? For all its advances, though, AI still falls short of human intelligence. Machines can create art, compose essays, and interpret data, but they don't understand, feel, or imagine like we do. AI makes conclusions based on data, not on experience or emotion. Human intelligence is based in empathy, ethics, intuition, and creativity — attributes which stay outside the ambit of algorithms. Rather than perceiving AI as a substitute, we must perceive it as a companion. From helping doctors make earlier diagnoses to assisting authors with the power to ignite new ideas, AI is complementing, not replacing, human capabilities. The dynamic between neuroscience and AI continues to unfold, yet its message is unequivocal: the future will be found, not in competition, but in partnership. When brainpower and machine power are harnessed together, the potential is limitless.

**-Nihar N(1BG23AI061), 4th Sem**

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**Riddle**

I learn from data but I'm not alive,

With layers deep, I help models thrive.

I mimic neurons, though I have none,

Guess who I am — I help models run!

(Neural Network)

## Department Activities

### SIX DAY SKILL DEVELOPMENT PROGRAM ON "AZURE: UNLEASHING THE POWER OF CLOUD COMPUTING"

Organized a six day Skill Development Program on "Azure: Unleashing the power of Cloud Computing" from 24th to 29th March 2025 under BNMIT-IEI. Mr. Vinay Raj M U, Technical Lead, Accenture Bengaluru and Mr. Vinay Kumar B C, from NTT DATA, Bengaluru were the resource persons for the event. A comprehensive Skill Development Program was conducted for IV semester students to enhance their understanding of Azure cloud services.



*Students actively engaged in hands-on during the Azure: Unleashing the power of Cloud Computing Skill Development Program*



*Group photo with Resource person, Mr. Vinay Raj M U*

### THE VIRTUOVATION - AR/VR HACKATHON

The Virtuovation - AR/VR Hackathon was organized by the Department of Artificial Intelligence and Machine Learning at BNM Institute of Technology, under BNMIT-IEEE on 28th and 29th of April 2025. Event witnessed a highly encouraging response from student innovators across Karnataka. A total of 31 teams from various engineering institutions registered to participate in this 20-hour hackathon,



*The inauguration of the Virtuovation – AR/VR Hackathon was held by Chandan Raj, Prof. Eishwar Maanay :Dean,*
*Dr. Sheba Selvam:HOD, AIML,*
*Rakshith G Galore System, Prabhanjana Rao,*
*Dr. S.Y Kulkarni: Additional Director and Principal*



*The first round of jury scrutiny for the Virtuovation – AR/VR Hackathon was conducted on Day 1,28th April 2025, from 3:30 PM onwards*

# Exposure Visit to "Nettur Technical Training Foundation"

Exposure Visit to "Nettur Technical Training Foundation" was organized under the banner of IIC for 6th semester students on 4th and 5th of April 2025   Total 98 students participated in the event accompanied by 4 Faculty members. The visit also helped to study Industry-Academia Collaboration: To explore how NTTF collaborates with industries and organizations to facilitate internships, placements, and continuous upskilling.



*6th semester Students and Faculties at NTTF campus*

# "Alumni Series talk on Placement Ready: Essential skills for placement success and future Growth"

Alumni Series talk on Placement Ready:Essential skills for placement success and future Growth was organized in the department under the banner of ISTE for 6th semester students. on 26th March 2025.The resource person was Ms. Kota Snigdhashree,  Associate Consultant, Oracle Financial Services Software Limited, our own alumni of batch 2020-24. She inspired the students to enhance their skills for the placements.She also helped in providing essential skills and links to practice for the placement tests and improve the scores.



# "Capstone Project Expo 2024-25"

Conducted "Capstone Project Expo 2024-25"  Under the banner of Institution's Innovation Council – BNMIT on  12th April 2025. A total  of 134 students participated in the event to exhibit their innovative projects.



*Dr. S.Y Kulkarni, Additional Director and Principal ,*
*Dr. Sheba Selvam, HOD with Students during demonstration*



*Dr. Krishnamurthy G N, Deputy Director and Prabhanjana Rao,*
*Jury member evaluating student projects*

# Inauguration of "BNMIT IEEE Computational Intelligence Society Student Chapter"

"BNMIT IEEE Computational Intelligence Society Student Chapter" was inaugurated on Saturday, 12th April 2025.from the Department of AIML.The event marked a significant step forward in fostering student engagement in computational intelligence, artificial intelligence, and machine learning initiatives under the prestigious IEEE banner.



*Lighting lamp by Dr. S.Y Kulkarni: Additional Director and Principal ,Prof. T J Ramamurthy:Director, Dr. Sumana M-IEEE CIS Bangalore section, Prof. Eishwar Maanay :Dean, Dr. Krishnamurthy G N: Deputy Director, Dr. Sheba Selvam:HOD, AIML , Faculty and student Co-ordinators.*



*Faculties and Students during inauguration of BNMIT IEEE-CIS*

# A technical talk on "Masterclass on Higher Education"

A technical talk on "Masterclass on Higher Education" was conducted for the 5th semester students under the BNMIT – ISTE Student Chapter on 11th Feb 2025. Mr. Lokesh Narang, Destination Manager, IDP Education India Pvt Ltd, Bangalore., was the resource person for the talk. The speaker provided insights into career advancement through a master's degree, top courses in master's programs, eligibility criteria for master's degrees, and the cost and duration of pursuing a master's degree.



*Speaker Mr. Lokesh Narang and Mr. Tiru Mothukuri sharing valuable insights on advancing careers through higher education.*



*Students interacting with Resource person during the talk*

## Guess the AI!!

*Which term best describes the goal-driven nature of Agentic AI?*
*A. Reactive B. Deterministic C. Autonomous D. Passive*

*Ans: C. Autonomous*

## One day workshop on "Data Science Session on Snowflake "in association with IEEE CIS BNMIT

One day hands on workshop on "Data Science Session on Snowflake" in association with IEEE CIS BNMIT, was organized on 28th April 2025. The session focused on the powerful cloud-based data platform, Snowflake, and its applications in the evolving data science ecosystem. students enrolled in the Data Science elective and other interested participants across various branches.



*Expert speaker guiding students through cloud-based data platform and Snowflake*

## One day workshop on "Data Analytics Using Computational Intelligence"

One day workshop on "Data Analytics Using Computational Intelligence" under the banner BNMIT IEEE Computational Intelligence Society (CIS) student chapter on April 25th , 2025, with the theme of "Introduction to Pandas,Numpy and MatplotLib." The workshop was conducted for 2nd Semester students of AI and ML, with a goal  to provide undergraduate students a basic understanding of  Data Analytics.



## Exposure Visit to "SmartBHARAT and India Electronics Week"

Exposure Visit to SmartBHARAT and India Electronics Week" Under the banner of Institution's Innovation Council - BNMIT was organized on 28th Feb 2025 at KTPO, WHITEFIELD, Bengaluru, India .Students of 4th A and B section  participated in the event with enthusiasm.Visit was knowldge encriching on IoT, Cloud Technology and 3D Printing , Data Science other more technology.



*Faculties with 4th B  section AIML students*



*Faculties with 4th A  sectionAIML students*

# ONE DAY TECHNICAL TALK ON "AI AT THE EDGE"

Organized one day Technical Talk on "AI at the Edge" in association with ISTE on 4th April 2025. The resource person for the event was Dr. Shirin Dora, Lecturer, Loughborough University. The speaker provided insights into the core aspects of cloud technologies, helping the students to understand Edge AI vs Cloud AI, Applications of Edge AI, Model compression techniques Lightweight AI model design, and AI frameworks for edge computing.



*Dr. Sheba Selvam, HOD, Dept. of AIML welcoming Speaker Dr. Shirin Dora*



*Students and faculty members during the talk*

# SIX DAY FACULTY DEVELOPMENT PROGRAMME ON "A DEEP DIVE INTO GENERATIVE AI: FROM TRANSFORMERS, TO APPLICATIONS & SECURITY"

A six day Faculty Development Programme on "A Deep Dive into Generative AI: From Transformers, to Applications & Security" was organized from 3rd to 28th2June 2025 by Department of AIML, BNMIT. This FDP aimed to equip faculty members and researchers with an in-depth understanding of emerging AI paradigms, focusing on large language models (LLMs), their underlying transformer architectures, and their practical applications.



*Hands-on session by Mr. Joel, Data Scientist at the Center of Data for Public Good, IISc during FDP*



*Group photo showing the FDP resource person*
*Mr. Ranganath Ramakrishna:Managing Principal - Data Engineering, AI Services, LTIMindtree,*
*Prof. T J Ramamurthy :Director,*
*Dr. Krishnamurthy G N:Deputy Director,*
*Dr. Sheba Selvam:HOD, AIML and FDP Participants.*

## Faculty Achievements

- Dr. Sheba Selvam, Dept. of AIML, BNMIT published a paper titled "Multiclass deep learning approach using crelu-to enhance the brain tumour identification" in the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) 16-17 January 2025 and Scopus indexed in IEEE.

- Dr. Sheba Selvam, Dept. of AIML, BNMIT published a paper titled "Enhancing Crop Yield: A Deep Learning Approach to Detect Tomato Leaf" Diseases in the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) 16-17 January 2025 and Scopus indexed in IEEE.

- Dr. Sheba Selvam, Department of AIML, BNMIT, published a paper titled "Cradle- A Simplified Decentralized Finance Platform" in the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), 16-17 January 2025, and is indexed in Scopus by IEEE.

- Dr. Mahanthesha U, Dept. of AIML, BNMIT published a paper titled "Automated Parsing and Comparative Analysis of ASN.1 Structures in 3GPP Standards" in the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) 16-17 January 2025 and Scopus indexed in IEEE.

- Mohanesh B M, Dept. of AIML, BNMIT published a paper titled "Time Stamp to Provide Security to Autonomous Vehicle Using KNN Cluster Algorithm" in the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), 16-17 January 2025 and Scopus indexed in IEEE.

- Dr. Mahanthesha U and Dr. Tejaswini R M, Dept. of AIML, BNMIT, published a paper titled "Face Recognition using MTCNN, Inception-Resnet with Ensemble Approach" in the International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) 16-17 January 2025, and Scopus indexed in IEEE.

- Mrs. Pankaja R, presented a paper titled "AirQ with TGNN: Air quality prediction and carbon credit management using AI" in the International Conference on Computing Technologies organized by Jyothy Institute of Technology on 13th and 14th June 2025.

- Mrs. Divya M S and Mrs. Kruthi P has published a paper titled "Kidney Stone Detection Using CNN Classification and SVM Classifier: A Hybrid Approach" in Journal of Research in Artificial Neural Networks System Volume 1 Issue 1, 2025.

- Dr. Halaharvi Keerthi published a paper titled "GuardianLane – An Intelligent road safety system using lane detection, road sign recognition, and SOS response" in IJIRCCE, Volume 13, Issue 3, March 2025.

- Dr. Halaharvi Keerthi published a paper titled "Jalswarm : Autonomous Water Waste Collection and Disposal Using AI-Powered Swarm Robots" in the International Journal of Research in Computer Applications and Robotics(IJRCAR), Volume 13, Issue 4, April 2025.

- Mrs.Kruthi P, Dept. Of Artificial Intelligence and Machine Learning, BNMIT, published a paper titled "A Review of ML-Driven Esophageal Disease Diagnosis and Predictive Treatment Forecasting: Transforming Healthcare with Machine Learning" in IJARCCE Volume 14, Issue 3, March 2025.

- Mrs.Kruthi P, Dept. Of Artificial Intelligence and Machine Learning, BNMIT, published a paper titled "Plant Leaf Disease Detection using CNN" in IJARCCE Volume 14, Issue 4, April 2025.

- Dr. Sheba Selvam received appreciation from BOSCH for commitment to excellence in contribution and mentorship support in delivering outcome for the project "Powertool Finder" in association with BOSCH Global Software Technologies.

- Dr. Mahanthesha U, Dept. of AIML, BNMIT has chaired a session at the 3rd IEEE International Conference on "Intelligent and Innovative Technologies in Computing, Electrical and Electronics organised by Department of EEE and ECE, BNMIT on 16th and 17th Jan 2025.

- Dr. Kakoli Bora has reviewed papers for the 3rd IEEE International Conference on "Intelligent and Innovative Technologies in Computing, Electrical and Electronics organised by the Department of EEE and ECE, BNMIT on 16th and 17th Jan 2025.

- Dr Mahanthesha U, Dept. of AIML, BNMIT, has reviewed papers for Springer Journals during Jan 2025.

- Mrs. M.S. Kavya, Assistant Professor, Dept. of AIML, BNMIT, has contributed as a resource person in the 5-Day FDP on Teacher-student mentoring: A key to unlocking Academic Excellence held from 21st to 22th April 2025.

- Dr. Sunitha R, Associate Professor, Dept. of AIML, BNMIT, has contributed as a resource person in FDP, Dept of CS & Business Systems, Malnad College of Engineering on 19th March 2025.

- Dr. Mahanthesha U, Dept. of AIML, BNMIT, has chaired a session at the 3rd IEEE International Conference on "Intelligent and Innovative Technologies in Computing, Electrical and Electronics organised by the Department of EEE and ECE, BNMIT, on 16th and 17th Jan 2025.

- Dr. Kakoli Bora has reviewed papers for International Conference on Data Science and Exploration in Artificial Intelligence, CODE AI 2025 held during 7th and 8th April 2025, organised by Department of Information Technology, Manipal Institute of Technology, Manipal Academy of Higher Education (MAHE), Bengaluru in collaboration with School of Engineering & IT (SoE-IT) Manipal Academy of Higher Education (MAHE), Dubai, UAE, in association with MITB ACM Student Chapter.

- Mrs. Pankaja R, Assistant Professor, Dept. of AIML BNMIT, has contributed as a member of the reviewer committee in the 1st International Conference on networked computing and data analytics (ICNCDA-2025) held on 23rd and 24th May 2025 at Poornima Institute of Engineering and Technology, Jaipur, Rajasthan.

- Mrs. Divya M S and Mrs. Kruthi P, Assistant Professor, Dept. of AIML, BNMIT have authored a Textbook in SK Research Group of companies – SKRGC publication in the title of "AI-Powered Innovation: Shaping the Digital World ", ISBN- 978-93-6492-335-4, publication date 10/04/2025.

## Student Achievements

- Nischala G S, Poorvi BH, Simran Singh of 4th Sem AIML were selected among the Top 15 at the National Level Hackathon conducted at Manipal Academy of Higher Education on 30/03/2025.

- Preksha G [1BG22AI081], Rachana M [1BG22AI083] of 6th Sem were winners at the National Level event BITS PILANI, Hyderabad on 22nd March 2025.

- Amogha B V [1BG21AI012], Anusha K [1BG21AI018], Hemashree Yogesha [1BG21AI039] of 8th Sem AIML were granted funding for JalSwam by ART Park, IISc under KSCST Student Project Programme, Govt. of Karnataka on 14/03/2025.

- Adithya Karthik M [1BG22AI003] of 6th Sem AIML was selected among Top 10 at JMC HackQuest 2025 conducted on 13/02/2025.

- Deekshitha B of 4th semester AIML participated in QuantumX-25, held at New Horizon college of Engineering on 10th- 12th April 2025.

- Mimansha Singh of 4th semester AIML has participated in SYNTHACK, a 24-hour national-level hackathon organized by the IEEE Computer Society student branch chapter of DSATM in association with the Department of CSEH.

- Adithya Karthik M 6th semester AIML participated and secured the second place in the cyber security-based event "CYBORG-Cybernetic Defence Unleashed" organized by the department of CSE, SJBIT, Bangalore.

- Sushmitha K Shetty, P Suraj Shenoy of 4th semester AIML has participated in the hackathon jointly organized by Cybercrime Investigation Training and Research (CCITR) and PES University on 8th and 9th March 2025.

- Nischala G S of 4th semester AIML participated in Ctl + Alt + Compete hackathon conducted at RV College of Engineering 8th June 2025.

- Sathvik Madhyastha, Sujay Sudharshan and P Suraj Shenoy has participated in Hackindia 2025 India's biggest Web3 and AI Hackathon.

- Ratnapriya of 4th semester AIML participated in the Hackathon on "AI to Glow" organized by ICER, VIT- Bangalore, held from March 26th to April 6th, 2025.

- Tanisha S Y and Sneha Nair of 4th semester AIML participated in hackathon Hacknite'25 at Manipal Institute of Technology by MITB ACM student chapter in collaboration with Codebasics.

- Tanisha S Y and Sneha Nair of 4th semester AIML participated in a two-day national-level online workshop on "Cyber security and ethical hacking and Sneha Nair" by SENSE on 15th and 16th March 2025 at VIT, Chennai.

- Nischala G S successfully completed the NPTEL course Applied Linear Algebra in AI and ML 12-week course from Jan-Apr 2025.

- Nischala G S of 4th semester AIML participated in the ideation of the OpenHack 2025 organized by IISc, Bangalore.

- Hemanth. P of 4th semester AIML have won a silver medal in one-act play and bronze medal in skit at VTU Fest-2025 on 25/03/2025.

- Harshitha R of 6th semester AIML won a gold medal and silver medal in VTU Fest-2025 conducted from 24/03/2025 to 27/03/2025.

- Shruddha S N of 6th semester AIML, secured second place in Group Song(western) in VTU 24th state level Youth Festival INTERACT-2025, Held at GAT Bengaluru from 24/03/2025 to 27/03/2025.

- Nischala G.S of 4th semester AIML presented a paper at IITCEE-25 at BNMIT on 16/01/2025.

- Rishab A Merlecha and Reena R of 8th semester AIML presented a paper entitled "A Revie of AI-Powered Symptom Analysis and Predictive Telemedicine Platforms: Transforming Healthcare Delivery with Machine Learning and Generative AI" at Internation conference on Information and Communication Technology for Intelligent Systems - springer on 01/04/2025

- Krishi Y Antad and Ms. Chinmaye N G of 8th semester AIML has presented a paper entitled AirQ with TGNN: Air quality prediction and carbon credit management using AI in 2025 International Conference on Computing Technologies organized by Jyothy Institute of Technologies on 13th and 14th June.

- Krishi Y Antad and Ms. Chinmaye N G of 8th semester AIML participated in 9th National Techno-Exhibition 2025, organized by Dr.AIT, Bengaluru, on 13th April 2025 with a project entitled "AirQ with TGNN: Air quality prediction and carbon credit management using AI"

- Rachana Mysore of 6th semester AIML, Preksha Girish 6th semester AIML has secured the 1st Position at TechXcelerate – BITS Pilani Hyderabad Edition, one of India's largest national-level hackathons with participation from over 4000 students across the country.
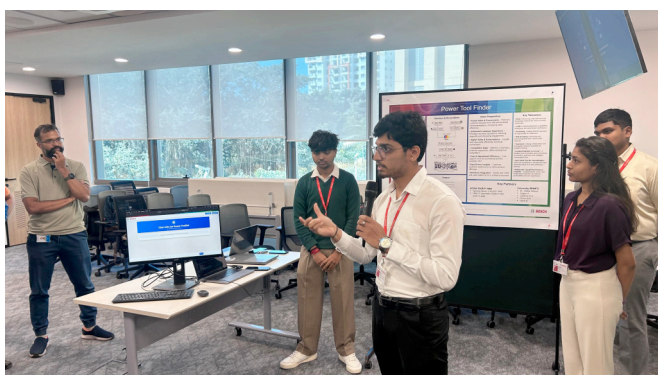




- Gagan A, Chiran B K, Nikhil successfully completed project on"Powertool Finder" Under mentorship with Dr. Sheba Selvam in association with BOSCH Global Software Technologies.

- Skanda Ganesha L, Vikranth S H, Viraj S Achari, Suraj R,JnaneshR Team Unity Force of 6th semester AIML have secured first place in National Level Hackathon conducted by Tinkerers Lab, IIT Hyderabad with Bosch Global Software Solutions (BGSW) on 01/04/2025.

- Nischala G S, Poorvi and Simran Singh of 4th sem AIML student, participated in a 36 hour hackathon held at Global institute of Technology. They won FIRST PRIZE for the problem statement category given by Kellogs Brown and Root company. They got an internship opportunity in the same company.

- Vivan Shreyas Yallal, Sumukha, Danush Tej Yadav, Yamsani Shreejan 6th semAIML B studentshave won 1st place in 36-hour of hackathon at the IIT Dharwad campus on January 31st Jan to 2nd February 2025, Out of the registered 626 teams in all categories, they are placed first in the AI category

- Received student Project Fund for final year student Project batches from KSCST, Indian Institute of Science Campus, Bengaluru, 48th series of Student Project Programme (SPP): 2024-25

## KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
*Indian Institute of Science Campus, Bengaluru – 560 012*
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### 48th series of Student Project Programme (SPP): 2024-25
**List of Student Project Proposals Approved for Sponsorship**

**23. B.N.M. INSTITUTE OF TECHNOLOGY, BENGALURU**

| Sl. No. | PROPOSAL REFERENCE NO. | PROJECT TITLE | COURSE | BRANCH | NAME OF THE GUIDE(S) | NAME OF THE STUDENT(S) | AMOUNT SANCTIONED (Rs.) |
|---|---|---|---|---|---|---|---|
| 238. | 48S_BE_3711 | JALSWARM: AUTONOMOUS WATER WASTE COLLECTION AND DISPOSAL USING AI-POWERED SWARM ROBOTS | B.E. | ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING | Dr. HALAHARVI KEERTHI Mrs. PAVITHRA H C | Ms. AMOGHA B V Ms. ANUSHA K Ms. HEMASHREE YOGESHA | 5,500.00 |
| 239. | 48S_BE_3859 | FRESH AI - OPTIMISED FRUIT QUALITY PREDICTION WITH GANS AND COMPUTER VISION | B.E. | ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING | Prof. TEJASWINI R MURGOD | Mr. ASHISH B RAO Ms. ANANYA NITTUR Ms. LOUKYA HARISHA | 6,000.00 |
| 240. | 48S_BE_3940 | CLEAN STREAM: AI-DRIVEN WASTE WATER DETECTION AND CLASSIFICATION FOR AUTOMATED WATER BODY CLEANING | B.E. | ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING | Dr. DIVYASHREE B A | Mr. KUSHAL GOWDA K Mr. ANKITH H BHARADWAJ Mr. JATHIN N | 5,500.00 |
| 241. | 48S_BE_5778 | TRACK WATCH: DRONE SURVEILLANCE FOR SAFER RAILWAYS | B.E. | ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING | Dr. NAGARATHNA C R | Mr. KARTHIK DINESH VERNEKAR Mr. CHIRAN B K Mr. AMAN KUMAR VERMA | 8,000.00 |

- The AIML Department team delivered an outstanding performance in the Inter-Department Football Tournament held on 20th March 2025, securing second place. The team showcased great skill, teamwork, and determination throughout the competition, putting up a strong fight in the final match.

## Editorial Team

### Faculty

- **Prof. Pavithra H C**, Assistant Professor, Dept. of AIML
- **Prof. Pankaja R,** Assistant Professor, Dept. of AIML
- **Ms.Vaishnavi Dogne**,Assistant Professor, Dept. of Humanities

### Students

- **Sampoornaa S Kashyap** VI Semester, AIML
- **Dhrithi Mohan,** VI Semester, AIML
- **J Kowshik,** VI Semester, AIML
- **Nischala G S,** IV Semester, AIML
- **Nihar N,** IV Semester, AIML
- **M Saavarni,** IV Semester, AIML
- **Pranav Kiran Adhikari**, VI Semester, AIML

### Layout & Design

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