ACS College of Engineering
Approved by AICTE New Delhi, Affiliated to VTU, Belagavi
(A Unit of RajaRajeswari Group of Institutions)
CET Code : E186 COMED-K : E003 PGCET : T918

# Department of Biomedical Engineering

## Student Development Programme

**on**

## "Generative AI on Health Care Applications"

**Topic:**Generative AI on Health Care Applications

**Date:**01.04.2025 (Tuesday) – 04.04.2025 (Friday)

**Time:**9.00 A.M. to 5.00P.M.

**ResourcePerson :Ms.LakshmiVejandla**
**Trainer ,Pantech Solutions India Pvt Ltd**

**Ms.Akshitha R**
**Trainer , Pantech Solutions India Pvt Ltd**

## Programme Objective

Generative AI refers to a class of artificial intelligencealgorithms designed to produce content that mimics orresembles human-generated content. At its core, generative AIoperates by learning patterns and structures from vastdatasets, then generating new content based on these learnedpatterns. This technology has applications across variousdomains, including text generation, image synthesis, and evenmusic composition. One prevalent approach to generative AI is the use of generative adversarial networks (GANs), wheretwo neural networks, thegenerator and the discriminator, arepitted against each other in a game-like scenario to improvethe quality of generated outputs. Despite its promisingcapabilities, ethical considerations surrounding generative AI,such as misuse for misinformation or deepfake creation,warrant careful scrutiny and regulation.

## Program Outcome

- **UnderstandingCore Concepts**
  Participants will gain a solid understanding of the fundamentals of Generative AI, including techniques like GANs, VAEs, and transformer-based models relevant to healthcare.

- **Application Awareness**

  Learners will explore real-world applications of Generative AI in healthcare, such as medical imaging, drug discovery, personalized medicine, and electronic health records analysis.
- **Hands-On Experience**

  Attendees will develop practical skills through hands-on sessions, learning to implement basic Generative AI models using tools like Python, TensorFlow, or PyTorch.
- **Ethical and Regulatory Insight**

  Participants will recognize the ethical, legal, and privacy issues related to using AI in healthcare, including patient data protection and model interpretability.

**Participants: 4th& 6thstudents of BME Department**

**Event Co-ordinator:**

**Mrs.Manju Davy,Assistant Professor – BME**

**Event Poster**

## Day 1

Day 1 workshop provided an introduction to the basics of PyTorch and its application in healthcare. How to create and manipulate tensors using functions like torch.tensor() and torch.rand(), and explored concepts such as dimensions, shapes, and various mathematical operations. Practical exercises included element-wise multiplication, reshaping tensors, and using squeeze() and unsqueeze() to adjust tensor dimensions. Also learned how to import external data, such as Excel files, into Google Colab for analysis. The session concluded with a hands-on project where we built a simple neural network using PyTorch to predict breast cancer, giving us insight into the application of deep learning in healthcare diagnostics.



Student participation in Day 1 workshop

## Day 2

Day 2 session explored computer vision tools using PyTorch and OpenCV. Working with OpenCV to perform various image processing tasks such as reading and displaying images, resizing, and applying Sobel edge detection for edge highlighting. These hands-on exercises helped us understand how image data is handled and manipulated in real-world scenarios. Building a Convolutional Neural Network (CNN) model using PyTorch. This included understanding the architecture of CNNs and how they are used to extract features from images. Application of the CNN model to a sample, gaining practical experience in training and evaluating image-based deep learning models.


**Students interaction** in Day 2 workshop

## Day 3

Day 3 began by understanding how language translation works, learning how text is translated between different languages using AI models and algorithms. Also experimented with text-to-image conversion, where we used Python tools to generate images based on text descriptions, demonstrating the creative potential of AI. Additionally, delved into the mechanism of machine translation, gaining insights into how computers process and translate languages using neural networks and transformer-based models. Finallylearned about real vs. fake image detection, where we trained AI models in

Python to identify and differentiate between authentic and manipulated images, an important application in digital forensics and media verification.


## Hands on Experience

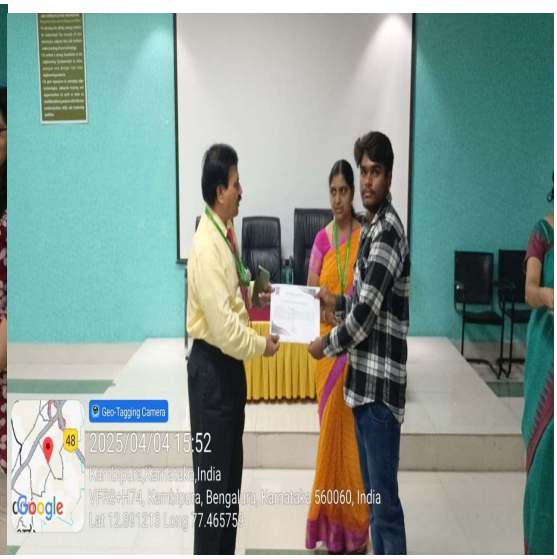
### Day 4

Last day of session, explored several advanced AI and machine learning concepts with a focus on real-world applications. We began by learning about Large Language Models (LLMs) and their role in understanding and generating human-like text. Also worked with the ChatterBot module to build simple chatbot applications, gaining hands-on experience in conversational AI. The life cycle of machine learning was discussed in detail, covering stages like data collection, preprocessing, model training, evaluation, and deployment.It was introduced to LSTM (Long Short-Term Memory) models, which are used for sequence prediction tasks such as text and time-series data analysis. Additionally, implemented a program for analyzing drug reviews, demonstrating how AI can be applied in healthcare to extract insights from user feedback. After the lunch break, the session continued with a focus on medical-based AI, where we were informed that upcoming activities would delve deeper into healthcare-specific applications of AI technologies.





## Felicitation of guests



**Distribution of Certificates to students**


**Group photo with trainers**

## Student Attendance:

ACS College of Engineering

CET Code : E156 COMED-K : E053 PGCET : 1315

### DEPARTMENT OF BIOMEDICAL ENGINEERING

VI SEMESTER STUDENT LIST 2024-2025

Event : SDP on Generative AI on Health Care Applications 01.04.2025 -04.04.2025

| Sl No. | USN | NAME | 01.04.2025 | | 02.04.2025 | | 03.04.2025 | | 04.04.2025 | |
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| | | | FN | AN | FN | AN | FN | AN | FN | AN |
| 1 | 1AH22BM001 | ALEN SIBI JACOB | | | | | | | | |
| 2 | 1AH22BM003 | ANUSHA | | | | | | | | |
| 3 | 1AH22BM004 | ARYAN AGRAWAL | | | | | | | | |
| 4 | 1AH22BM005 | AYHAM AHMAD AHMAD | | | | | | | | |
| 5 | 1AH22BM006 | DEEPA P ESWAR | | | | | | | | |
| 6 | 1AH22BM007 | GOPIKA PANCHAL | | | | | | | | |
| 7 | 1AH22BM008 | LEKHANA K | | | | | | | | |
| 8 | 1AH22BM009 | NANDINI R | | | | | | | | |
| 9 | 1AH22BM010 | NEHA VINOD P | | | | | | | | |
| 10 | 1AH22BM011 | NITHISH | | | | | | | | |
| 11 | 1AH22BM012 | PAVAN M R | Pavan | Pavan | Pavan | Pavan | Pavan | Pavan | Pavan | Pavan |

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| 12 | 1AH22BM013 | PRANAV HOYSALA | | | | | | | | |
| 13 | 1AH22BM014 | PRAVEEN KUMAR REDDY | | | | | | | | |
| 14 | 1AH22BM015 | PROXIMA SAPKOTA | | | | | | | | |
| 15 | 1AH22BM016 | RITESH SAH | | | | | | | | |
| 16 | 1AH22BM017 | SAPNA G R | | | | | | | | |
| 17 | 1AH22BM018 | SHREEYA DESAI | | | | | | | | |
| 18 | 1AH22BM019 | TEJASWINI D M | | | | | | | | |
| 19 | 1AH22BM020 | UMRANA LAEEQH | | | | | | | | |
| 20 | 1AH22BM021 | VARSHITHA S Y | | | | | | | | |
| 21 | 1AH22BM022 | YASHICA MOHAN | | | | | | | | |

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CET Code : E186 COMED-K : E005 PGCET : TS15

## DEPARTMENT OF BIOMEDICAL ENGINEERING

### IV SEMESTER STUDENT LIST 2024-2025

**Event : SDP on Generative AI on Health Care Applications 01.04.2025 -04.04.2025**

| Sl No. | USN | NAME | 01.04.2025 | | 02.04.2025 | | 03.04.2025 | | 04.04.2025 | |
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| | | | FN | AN | FN | AN | FN | AN | FN | AN |
| 1 | 1AH23BM001 | ALWIN RAJU | | | | | | | | |
| 2 | 1AH23BM002 | ANILET ENITA M | | | | | | | | |
| 3 | 1AH23BM003 | ANUSHA N | | | | | | | | |
| 4 | 1AH23BM004 | BHOOMIKA | | | | | | | | |
| 5 | 1AH23BM005 | CHAITRA GUBBI | | | | | | | | |
| 6 | 1AH23BM006 | CHANDANA P | | | | | | | | |
| 7 | 1AH23BM007 | CHANDANA R | | | | | | | | |
| 8 | 1AH23BM009 | JEEVAN R | | | | | | | | |
| 9 | 1AH23BM010 | KEVIN RUFUS KUMAR | | | | | | | | |
| 10 | 1AH23BM011 | KUSUMA C V | | | | | | | | |
| 11 | 1AH23BM012 | LISHA S | | | | | | | | |

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| 12 | 1AH23BM013 | M L TARUN RAJ | | | | | | | | |
| 13 | 1AH23BM014 | MEGHNA | | | | | | | | |
| 14 | 1AH23BM015 | MIDHUN KRISHNAN U | | | | | | | | |
| 15 | 1AH23BM016 | MOHAMMED ABDUL HASEEB | — | — | — | — | — | — | — | — |
| 16 | 1AH23BM017 | NAIOMI BENJAMIN | | | | | — | — | — | — |
| 17 | 1AH23BM018 | NANDIKA B U | | | | | | | | |
| 18 | 1AH23BM019 | PRANATHI K M | | | | | | | | |
| 19 | 1AH23BM020 | SANJANA H S | | | | | | | | |
| 20 | 1AH23BM023 | TANUSHA S | | | | | | | | |
| 21 | 1AH23BM024 | VADDI MEGHANA | | | | | | | | — |
| 22 | 1AH23BM025 | VAISNAVI B | | | | | | | | |
| 23 | 1AH23BM027 | VIDYA HEGDE | | | | | | | | |

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# TRAINER PROFILE

Pantech e Learning
DIGITAL LEARNING SIMPLIFIED

**Company Name:** Pantech Solutions India Pvt Ltd

**Trainer Name**: Lakshmi Vejandla

**Specialization:** Image Processing, Machine Learning, Data Science, Gen AI, MATLAB

**Experience:** 4 years of experience in the image processing domain, matlab, machine learning, and software development.

**Education:** B. Tech in Electronics and Communication, JNTU Kakinada.

**Bio:** Lakshmi Vejandla is a passionate educator with extensive experience in image processing, machine learning, and deep learning. With a strong technical background and a proven track record of conducting workshops and seminars, Lakshmi is dedicated to empowering students with the skills they need to succeed in the ever-evolving tech landscape.

**Teaching Philosophy**: Lakshmi believes in an interactive and hands-on learning approach. She utilizes real-world examples and projects to help students apply their knowledge and gain practical experience.

**Technical Skills:**

- Core Subject Knowledge: Deep understanding of Machine Learning, MATLAB, OpenCV, Deep Learning.
- Programming Languages: Proficiency in Python, MATLAB, C++
- Data Analysis: Experience in working with datasets, cleaning, and preprocessing data for analysis and model building.
- Frameworks & Libraries: Knowledge of TensorFlow, Keras, PyTorch for ML, OpenCV for computer vision.
- Software & Tools: Mastery in using the tools required for the training program, such as MATLAB, Jupyter Notebooks, and IDEs.

**Testimonials:**

- "Lakshmi's workshop on Deep Learning was incredibly informative and engaging. Her clear explanations and practical exercises helped me understand the concepts better." - HOD, Dept of CSE – Mallareddy Institute of Technology- Hyderabad.
- "Lakshmi's knowledge and passion for data science are truly inspiring. She creates a supportive learning environment encouraging students to ask questions and explore new ideas." – Principal, IARE institute of Technology.

**Workshops Conducted**

- Over 100 workshops and seminars delivered at various colleges across India, focusing on Python with Flask, AI, ML, Django, OpenCV, Image Processing using Matlab, Deep Learning, R Programming, Statistical Analysis, NLP, and Data Analytics.

# TRAINER PROFILE

Pantech e Learning
DIGITAL LEARNING SIMPLIFIED

**Company Name:** Pantech Solutions India Pvt Ltd

**Trainer Name:** Akshitha R

**Specialization:** Java Development, Full Stack Development, Machine Learning, Artificial Intelligence (AI)

**Experience:** Over 2.5 years of hands-on experience in Java programming, Website Development, and building AI-driven solutions using machine learning algorithms.

**Education:** B. Tech in Computer Science, VTU

**Bio:** Akshitha is a proficient software engineer with expertise in web technologies, Java full-stack development, and machine learning. With a deep understanding of both front-end and back-end technologies, she specializes in building full-scale web applications integrated with machine learning algorithms. Akshitha is passionate about developing innovative, data-driven solutions that not only solve complex problems but also provide a seamless user experience. Her diverse skill set, coupled with her experience in web development and machine learning, allows her to deliver highly optimized and scalable applications.

**Teaching Philosophy:** Akshitha believes in bridging the gap between theoretical knowledge and real-world application. Her approach to software development focuses on creating robust, scalable solutions that are user-centric and efficient. She emphasizes clean, maintainable code and modern web practices to ensure that her applications are both functional and forward-looking.

**Technical Skills:**

- Core Expertise: Web Development, Java Full-Stack Development, Machine Learning
- Programming Languages: Proficient in Java, Python, JavaScript, and SQL
- Web Development: Expertise in HTML5, CSS3, JavaScript, and Spring Boot for building dynamic, responsive web applications
- Machine Learning Tools: Skilled in Scikit-learn, TensorFlow, Keras, and Python for developing predictive models and AI-driven applications
- Backend Development: Proficient in building RESTful APIs, using Java Spring, Hibernate, and MySQL for robust server-side development
- Cloud & DevOps: Experience with AWS, Docker, Jenkins, and Git for deploying scalable applications and ensuring continuous integration and delivery.

**Testimonials:**

- Akshitha's ability to combine her full-stack expertise with machine learning is remarkable. She helped us build an intelligent web platform that not only meets our needs but exceeds our expectations." – HOD, ECE, Govt First Grade College, Kanakapura Road.

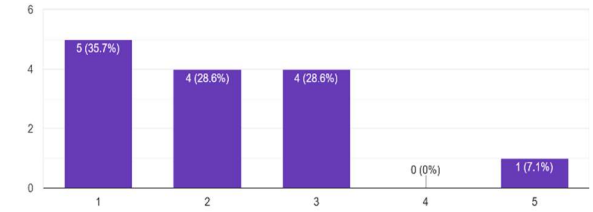
**Workshops Conducted:**

Akshitha has conducted over 40 workshops and seminars, focusing on Web Development, Java Full-Stack Projects, and Machine Learning for real-world applications. Her sessions are known for their hands-on labs, where participants build practical applications, gaining both theoretical insights and practical skills.

# Feedback Details

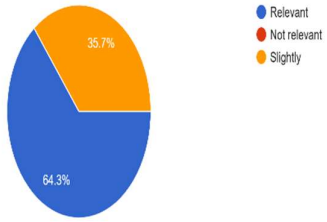
How would you rate the overall content of the workshop?

14 responses



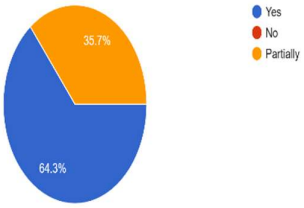

How relevant did you find the topics covered in the workshop to your current work or research?

14 responses



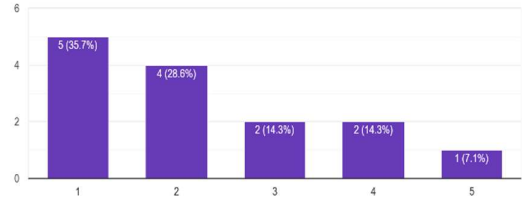

Did the workshop provide a good balance between theoretical concepts and practical applications?

14 responses



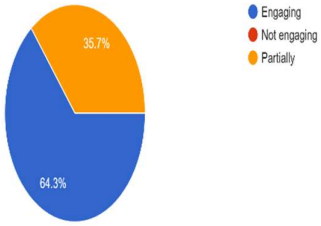

How would you rate the knowledge and expertise of the presenters?

14 responses



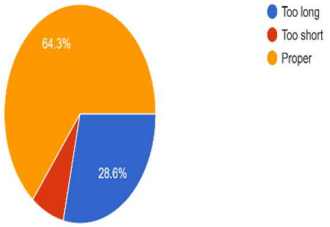

How engaging were the presenters during the workshop?

14 responses



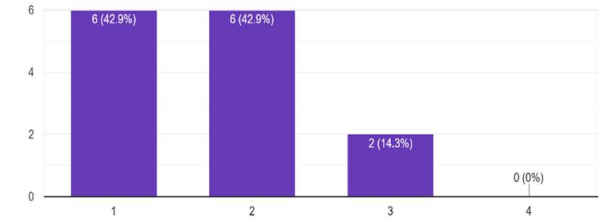

Was the length of the workshop appropriate for the content presented?

14 responses



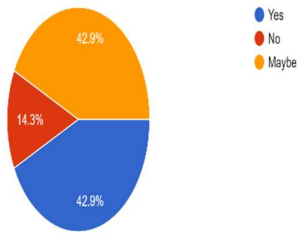

How effective were the hands-on activities or demonstrations in helping you understand the content?

14 responses




Will you recommend this workshop to colleagues or peers?

14 responses




Event Co-ordinator

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