SVKM's NMIMS
Mukesh Patel School of Technology Management & Engineering
Program: BTech AI

Course: Generative AI

Experiment No.01

PART A

(PART A : TO BE REFFERED BY STUDENTS)

A.1 Aim: Explore Generative Models: Concepts, Applications

Learning outcomes:

By the end of this lab, you will be able to:

1. Explain the concept and significance of Generative AI.
2. Explore real-world applications of GenAI.
3. Understand the evolution and role of foundation models.
4. Try out basic GenAI models via interactive platforms.

Task 1: Application Mapping

1. Identify and map at least five real-world applications of Generative AI (e.g., content creation, drug discovery, code generation).

2. Use online sources like OpenAI blog, Hugging Face blog, Stanford's Center for Research on Foundation Models.

3. Prepare a 1-slide summary with use case, model involved, and its societal impact.

4. Create a mind map for the different applications.

Task 2: Foundation Model Timeline

1. Create a timeline tracing major foundation models (e.g., GPT-1 to GPT-5, BERT, PaLM, LLaMA).

2.Output should be an annotated timeline showing evolution, year, key features, and breakthroughs.

Task 3:

Students will explore pre-trained foundation models via no-code or low-code interfaces.

Choose any two of the following platforms:

1. **Hugging Face Spaces** (https://huggingface.co/spaces)
    - Try: Text generation with GPT-2/GPT-J, Image generation with Stable Diffusion
2. **OpenAI Playground**
    - Try prompt engineering with GPT-3.5/GPT-4
3. **Google MakerSuite (PaLM 2)**
    - Text-to-text generation, summarization
4. **Replicate.com**
    - Explore models like SDXL, Whisper, etc.

Things to do:

1. Generate a story from a prompt.
2. Summarize an article or academic abstract.
3. Convert a bulleted list into a paragraph.
4. Generate an image from text.

Task 4: Reading and comprehending the literature

Read and summarize the following articles using any GenAI tools:

1. "What Are Foundation Models?" (Stanford CRFM)
2. “The Age of Generative AI” (OpenAI Blog)
3. “How Does ChatGPT Work?” by Stephen Wolfram (optional, advanced)
4. Based on the readings above, answer the following questions:
    a. What makes a foundation model different from a traditional NLP model?
    b. Where do you see GenAI impacting your discipline?
    c. What ethical or societal concerns arise?

(PART B : TO BE COMPLETED BY STUDENTS)

(Students must submit the soft copy as per following segments within two hours of the practical.)

Roll No.	Name:
Class :	Batch :
Date of Experiment:	Date of Submission
Grade :	

B.1 Task1

B.2 Task 2

B.4 Conclusion:

(Students must write the conclusion in their own words.)