Workshop on Generative AI

Workshop Objectives and Description

This workshop offers a comprehensive journey into the world of **Generative AI**, blending foundational knowledge with cutting-edge advancements. Participants will begin by exploring core concepts and the historical evolution of generative models, including key architectures like **Generative Adversarial Networks** (**GANs**), **Variational Autoencoders (VAEs)**, and transformer-based systems such as **GPT** and **DALL-E**. The session will demystify technical aspects like training processes, loss functions, and attention mechanisms, while also addressing practical techniques for fine-tuning pre-trained models to suit industry-specific needs. Ethical considerations take center stage, with discussions on mitigating bias in training data, combating misuse (e.g., deepfakes and misinformation), and adhering to responsible AI frameworks to ensure ethical deployment. Designed for both technical and non-technical audiences, the workshop emphasizes hands-on learning through **live demos** of tools like ChatGPT and Stable Diffusion, collaborative exercises in prompt engineering, and interactive Q&A sessions with experts. Attendees will uncover real-world applications across sectors, from healthcare and entertainment to marketing and education, while gaining insights into emerging trends like multimodal AI and autonomous agents. Career-focused segments highlight growing roles such as AI ethicists and prompt engineers, alongside guidance for navigating the open-source vs. proprietary tool landscape.

Workshop Agenda

Day 1: Introduction and Fundamentals

Morning Session:
- Introduction to Generative AI Course Objective: To provide a foundational understanding of Generative AI and its applications.
- Target Audience: Everyone
- What is Generative AI?
- **Module 1:** Basics of Generative AI History and Evolution of Generative AI
- Types of Generative AI Models

Afternoon Session:
- **Module 2:** Introduction to Large Language Models (LLMs) What are LLMs?
- Introduction to models like GPT, OpenAI, and LLaMA
- **Module 3:** Modern Applications of Generative AI ChatGPT and its functionalities
- New Generative AI tools and their uses
- Image generation with Midjourney and other tools

Day 2: Hands-On Learning and Business Applications

Morning Session:

- **Module 4:** Hands-on with Generative AI Practical examples and exercises
- Creating content with Generative AI
- Lab sessions for real-world scenarios
- **Module 5:** Responsible AI and Security Ethical considerations in AI
- Ensuring security in Generative AI applications

Afternoon Session:

- Generative AI for Business Users Implementing Generative AI in Business
- Understanding business use cases for Generative AI
- Case studies and real-world examples
- **Module 6:** Prompt Engineering Basics of prompt writing
- Effective techniques for generating accurate responses

Day 3: Technical and Industry Applications

Morning Session:

- Generative AI for IT Teams Technical Overview of AI Models
- Understanding different AI models (GPT, OpenAI, LLaMA)
- Technical architecture and design principles
- **Module 7:** Developing with Generative AI API integration and development
- Building custom AI solutions

Afternoon Session:

- Generative AI for Other Business Groups Industry-Specific Applications
- Generative AI in finance, healthcare, and retail
- Success stories and practical implementations
- **Module 8:** Future Trends in Generative AI Emerging technologies and innovations
- Predicting future developments and their impact
- Conclusion and Certification Review and summary of the course content
- Final assessment and certification