GenAI and Prompt Engineering

Contents

Course Name: GenAI and Prompt Engineering

About the Programme: The Generative AI and Prompt Engineering course covers the basics of generative artificial intelligence, with a focus on how models like ChatGPT function and their applications in various industries. Participants will learn how to create effective prompts that elicit accurate, creative, and useful responses from AI systems. The course combines theoretical concepts with hands-on practice, highlighting techniques to optimize interactions with AI. By the end of the course, learners will acquire practical skills to utilize generative AI for problem-solving, innovation, and enhanced productivity in real-world scenarios

Programme outcomes:

- **Understanding Generative AI Fundamentals:** Develop a clear understanding of the principles, capabilities, and limitations of generative AI models.
- **Mastering Prompt Engineering:** Discover methods to create effective prompts for obtaining accurate, creative, and meaningful responses from AI systems.
- **Practical Application Skills:** Gain practical experience using generative AI tools to address real-world challenges in various fields.
- **Enhancing Creativity and Productivity:** Utilize AI to enhance creativity, optimize workflows, and develop innovative solutions for both business and personal projects.
- **Ethical and Responsible AI Usage:** Understand the ethical considerations and best practices for using AI responsibly and inclusively.

Eligibility criteria:

Graduates/Students pursuing Graduation, with basic programming skills.

Duration of the programme:

Hours: 150 Hours
Days: 115 days
Months: 4 months

Offline training centres:

NA

Course Syllabus:

Module 1: Cloud Fundamentals

- Introduction to Cloud Computing.
- Types of Cloud Services: IaaS, PaaS, SaaS.
- Cloud Deployment Models: Public, Private, Hybrid.
- Benefits and Challenges of Cloud Computing.
- Overview of Popular Cloud Platforms (Azure, AWS, Google Cloud).
- Introduction to Microsoft Azure Fundamentals (AI-900 alignment).

Module 2: AI Workloads

- What are AI Workloads?
- Types of AI Workloads: Training, Inference, and Data Processing.
- Cloud-based AI Services (e.g., Azure Cognitive Services).
- AI Workloads in Cloud Environments.
- Identifying AI Workload Types for Various Applications.

Module 3: Machine Learning

- Introduction to Machine Learning (ML).
- Types of Machine Learning: Supervised, Unsupervised, and Reinforcement Learning.
- Machine Learning Models and Algorithms.
- The Machine Learning Lifecycle: Data, Model Training, Evaluation.
- Introduction to Azure Machine Learning.

Module 4: Computer Vision

- Introduction to Computer Vision.
- Image Processing and Feature Extraction.
- Object Detection, Image Classification, and Face Recognition.
- Applications of Computer Vision in the Real World.
- Introduction to Azure Computer Vision Services.

Module 5: Natural Language Processing (NLP) Essentials

- Introduction to Natural Language Processing.
- Core NLP Tasks: Text Classification, Sentiment Analysis, Tokenization, Named Entity Recognition.
- Introduction to Azure Cognitive Language Services.
- NLP Applications in AI (e.g., Chatbots, Search Engines).

Module 6: Introduction to Generative AI and Prompt Engineering

- Introduction to Generative AI.
- Understanding Large Language Models and their Applications.
- Introduction to Prompt Engineering and Guiding Outputs.
- Responsible AI Practices in accordance with Microsoft's Guidelines.

Module 7: Advanced Prompt Engineering for ChatGPT

- Understanding ChatGPT and Advanced Prompting Techniques.
- Building Context and Personality in ChatGPT.
- Understanding Complex Prompt Patterns, including Gameplay Patterns.
- Fine-tuning ChatGPT Output Across Various Fields and Tasks.

Module 8: AI-900 Certification Exam Preparation

- Revision of Machine Learning, Computer Vision, and NLP Topics.
- Generative AI and Responsible AI Review.
- Exam Strategies and Practice Questions for Microsoft AI-900 Certification Exam.
- Mock Exam and Feedback.

Module 9: Python for Development

- CRUD Operations Using Variables.
- Working with Various Data Types.
- Working with Lists and Loops.
- Logical and Comparison Operators.

Module 10: Applied Project Development Fundamentals

- Identifying the Problem and the Need to Solve It.
- Identifying Stakeholders, Their Roles, and Business Goals.
- Conducting a Literature Survey About the Problem.
- Understanding the Needs of the Target User and Envisioning the Final Product.
- Deconstructing the Problem Statement.
- Understanding Work Breakdown and Timelines.
- Solution Designing and Understanding Risks.

Module 11: Independent Project Work

- Development of a Fully Functional Chatbot Application Capable of Real-Time Interaction.
- Ensuring Compliance with Legal and Ethical Standards (e.g., GDPR).
- Weekly Trainer-Supported Doubt-Clearing Sessions.

Module 12: Documentation, Deployment, and Presentation

- Project Documentation.
- Local Deployment for Presentation.
- Final Presentation of the Chatbot Project.
- Reflection on Learnings from the Project.
- Documenting Reflections.

Certification Process:

Candidates must appear for the Microsoft Certificate Exam on the completion of the course

- For Certification Rs. 2,500+ GST and Assessment Platform Handling charge Rs. 125 + GST per exam has to be paid by students in addition to the course fee
- Certification: Microsoft AI -900, Azure AI Fundamentals