

Course Title - Harnessing the Power of Generative AI for Engineers

About This Course

Embark on a transformative journey into the future of engineering with this comprehensive two-day masterclass on Generative AI. This program is meticulously designed to empower engineers with the skills to leverage AI in text generation, image creation, data analysis, and programming, thereby revolutionizing conventional engineering practices.

Course Objectives

- Empower engineers with the ability to utilize Generative AI across key engineering tasks.
- Enhance problem-solving, efficiency, and innovation through AI-powered tools and practices.
- Equip engineers with practical AI applications for text generation, coding, visualization, and data analysis.

Course Outline

- Introduction to Generative AI in Engineering: Foundations and principles.
- AI-Driven Text Generation: For efficient documentation and reporting.
- AI in Coding: Code optimization, debugging, and suggestions.
- Visual Engineering with AI: Diagrams, prototypes, and design automation.
- Data Analytics and AI: For predictive insights and advanced visualization.
- Project Application: Real-world integration of AI in engineering tasks.

What You'll Learn

- Automating documentation and report generation.
- Enhancing coding practices with AI-powered suggestions, debugging, and optimization.
- Creating detailed engineering diagrams and prototypes using AI.
- Conducting advanced data analysis, visualization, and predictive modeling.
- Implementing Generative AI tools in practical engineering projects. Create CustomGPT

Mode of Learning:

- Classroom
- Individual and group projects
- Practical hands-on sessions
- Interactive lectures

Minimum Entry Requirements

- Education Level: Basic Engineering Degree/Diploma recommended
- Language Proficiency: English proficiency (spoken and written)
- PC Proficiency: Intermediate
- Other Requirements: -

Proficiency Level of This Course

- Intermediate Level

Job Role(s) This Course Will Be Suitable For

- Engineers across disciplines (Mechanical, Electrical, Software, Civil)
- Data Analysts in engineering domains
- Project Managers overseeing technical projects

Other Course Requirements

- Participants must bring a personal laptop.
- No Windows/Mac restrictions (both acceptable).
- ChatGPT Plus subscription required.

Modes of Assessment

- Group project

Course Hours

- Training Hours – 16 hours

Course Price & Duration of Course

- SGD 1000/pax (NM), \$900 (M)
- Early Bird 10% ends on 23 May 2025
- 2 Days Onsite

About the Trainer:



Mr Peter Ong Gaik Sun
AI Consultant/Trainer

Peter is a Singapore PSC Scholar with degrees in Physics (NUS, 1983) and education, who transitioned to IT through a Post-Graduate Diploma in Systems Analysis (1988). Peter's career spans decades in enterprise technology at IBM Software and BMC Software, specializing in financial and government sectors across Asia Pacific. He has founded and managed regional companies focused on IBM-zSeries mainframe solutions since 2000. A lifelong learner, Peter holds certifications in AI and ChatGPT Prompt Engineering (2023), is HRDF-certified in Malaysia, and maintains an active interest in aviation and martial arts.

Lesson Plan - Harness the Power of Generative AI for Engineers

Day 1: Fundamentals of Generative AI and Practical Applications

Time	Module	Topic	Activity Type	Details
9:00 AM - 10:30 AM	1	Introduction to Generative AI	Lecture + Discussion	History, Key Concepts, Video Questions
10:30 AM - 10:45 AM	Break		Break	
10:45 AM - 12:15 PM	2	AI Text Generation and Manipulation	Hands-on + Exercises	Prompting Basics, Summarization, Content Creation
12:15 PM - 1:15 PM	Lunch		Lunch	
1:15 PM - 2:45 PM	3	Advanced Data Analysis and Visualization	Hands-on	Data upload, analysis, chart creation exercises
2:45 PM - 3:00 PM	Break		Break	
3:00 PM - 5:00 PM	4	Programming with AI	Hands-on + Debugging	Programming tasks and debugging exercises

Day 2: Advanced Multimedia AI and Group Project

Time	Module	Topic	Activity Type	Details
9:00 AM - 10:30 AM	5	Generating Images and Diagrams with AI	Hands-on	Using DALL-E, Ideogram, and Diagram Generation
10:30 AM - 10:45 AM	Break		Break	
10:45 AM - 12:15 PM	6	Exploring Audio and Video Capabilities	Hands-on + Demonstrations	Creating Music and Videos Using AI
12:15 PM - 1:15 PM	Lunch		Lunch	
1:15 PM - 2:45 PM	7	Group Project - Agents and Custom GPTs	Group Work	Create a Prompt Workflow or Custom GPT
2:45 PM - 3:00 PM	Break		Break	
3:00 PM - 5:00 PM	8	Privacy and Risk Management	Lecture + Discussion	Data Privacy, Bias, Limitations, Hallucinations