



Artificial Intelligence for Engineers

Overview

Artificial intelligence (AI) is rapidly transforming the manufacturing industry. AI-powered technologies are being used to automate tasks, make better decisions, and improve quality. As an engineer, you can play a key role in this transformation.

This program will teach you the skills you need to use AI in manufacturing and engineering. You will learn about the latest AI technologies, such as machine learning, deep learning, and natural language processing. You will also learn how to apply AI to real-world manufacturing problems, such as product design & development, process improvement, quality control, and maintenance

Learning Objectives

By the end of the course, participants will be able to:

- Understand the basics of artificial intelligence (AI)
- Learn about the latest AI technologies, such as machine learning, deep learning, and natural language processing.
- Learn how to apply AI to real-world engineering and manufacturing problems.
- Develop the skills necessary to use AI in manufacturing
- Walk away with a list of AI ‘quick wins’ – engineering- and manufacturing-driven business cases they can start right away in their organization

Methodology

Interactive group discussions, lectures, exercises, case studies and sharing of real-world experiences.

Number of Participants	: Max 20 per workshop
Medium of Instruction	: English and Bahasa Malaysia(where applicable)
Facility	: Each participant to bring a laptop

A key takeaway from this course is the brainstorming and prioritization of engineering- and manufacturing-related business cases by participants. These “quick wins” business cases can be implemented immediately by the organization to obtain the required benefits.

Course Schedule

Day 1

Time	Details	Activity
8.30am-9.00am	Introduction	A short Introduction by Trainer
9.00am-10.30am	Module 1: Introduction to AI and Engineering	Learning + Debrief: <ul style="list-style-type: none"> • What is AI? • History of AI • Applications of AI in engineering • Benefits and challenges of using AI in engineering • Ethical considerations in AI usage
10.30am-12.00pm	Module 2: AI Success Stories in Engineering	Learning + Debrief: <ul style="list-style-type: none"> • Case studies of how AI has been used to improve engineering processes and products • Examples of how AI can be used to achieve real-world results in engineering
12.00pm-1.00pm	Lunch	Lunch is Served
1.00pm-2.30pm	Module 3: The Data Science Process	Learning + Debrief: <ul style="list-style-type: none"> • A systematic approach to analyzing, visualizing, and modeling big data • Different steps in the data science process • How to use data science to solve engineering problems
2.30pm-4.30pm	[Module 4: Data Cleansing	Learning + Debrief: <ul style="list-style-type: none"> • The process of cleaning and preparing data for analysis • Different types of data errors • Techniques for correcting data errors



Day 2

Time	Details	Activity
8.30am-9.00am	Introduction	A short Introduction by Trainer
9.00am-10.30am	Module 5: Exploratory Data Analysis (EDA)	Learning + Debrief: <ul style="list-style-type: none"> • A technique for exploring data to gain insights and identify patterns • Different methods for EDA • How to use EDA to identify potential problems or opportunities in engineering
10.30am-12.00pm	Module 6: Models and Algorithms	Learning + Debrief: <ul style="list-style-type: none"> • Different models and algorithms that can be used for machine learning and artificial intelligence • Different types of models, such as supervised learning, unsupervised learning, and reinforcement learning • Different types of algorithms, such as decision trees, neural networks, and support vector machines • How to use models and algorithms to solve engineering problems
12.00pm-1.00pm	Lunch	Lunch is Served
1.00pm-2.00pm	Module 7: Key Competencies	Learning + Debrief: <ul style="list-style-type: none"> • Skills that are needed for developing and deploying AI systems in engineering. Some of the key competencies include data science, machine learning, NLP, computer vision, cloud computing, creativity, and communication
2.00pm-3.0pm	Module 8: Industry-Specific Business Cases	Learning + Debrief: <ul style="list-style-type: none"> • How AI can be used to solve business problems in engineering • Examples of how AI can be used to improve efficiency, productivity, and customer service in engineering
3.00pm-4.30pm	Module 9: Demos, Mini Projects, and AI-Driven Business Case Brainstorming	Learning + Debrief: <ul style="list-style-type: none"> • Opportunity to apply the skills learned in the previous modules • Participation in demos of AI tools • Work on engineering-driven AI mini projects • Brainstorm AI-driven business cases for engineering and related department

About Elite Indigo

Elite Indigo Consulting provides corporate training to the semiconductor and manufacturing industries. With a humble beginning of one founding member with passion and desire to share his 20 years of experiences in Smart Manufacturing for global manufacturing facilities, now, we have a strong and competent team of 20 members, all aligned with company mission, vision and core values.

Our Mission

"Transform Data into Insights - Leap Forward"

Our Vision

Be a Global Trusted Advisor in the Areas of Skills Development, Consultancy & Software Solutions specialising in Semiconductor & Manufacturing industries.

Our Core Values

TRUST

"A culture of self, team and clients trust"

PASSION

"Do what we love and love what we do"

EXCELLENCE

"If it's worth doing, it's worth doing it well"
