




Artificial Intelligence

 **Details:**


- 5 Sessions
- 11 Modules
- 16 Hours

CONTACT US

 100 Creek St., Brisbane City,
QLD 4000, Australia

 info@soofastaei-educations.com

 www.soofastaei-educations.com

 0061 422 125 935

PROGRAM OVERVIEW

Modern information technologies and the advent of machines powered by artificial intelligence (AI) have already strongly influenced the world of work in the 21st century. Computers, algorithms, and software simplify everyday tasks, and it is impossible to imagine how most of our life could be managed without them. However, is it also impossible to imagine how most process steps could be managed without human force? What will the future world of work look like, and how long will it take to get there? Will the future world of work be a world where humans spend less time earning their livelihood? Also, a possible scenario for the new world, a world where robots, intelligent systems, and algorithms play an increasingly central role?

What is already clear and certain is that new technological developments will have a fundamental impact on the global labor market within the next few years, not just on industrial jobs but on the core of human tasks in the service sector that is considered 'untouchable' And job opportunities for those who have the ability to solve problems in various fields of industry and services using artificial intelligence, will grow more every day.

In this program, you will learn what artificial intelligence is, explore use cases and applications of AI, understand AI concepts and terms like machine learning, deep learning, and neural networks. You will be exposed to various issues and concerns surrounding AI, such as ethics, bias & jobs, and get advice from experts about learning and starting a career in AI.

This course does not require any programming or computer science expertise and is designed to introduce the basics of AI to anyone, whether you have a technical background or not.



KEY BENEFITS

The Program is aimed at providing:

- ✔ Understand what AI is, its applications and use cases and how it is transforming our lives
- ✔ The meaning behind common AI terminology, including neural networks, machine learning, deep learning, and data science
- ✔ How to navigate ethical and societal discussions surrounding AI
- ✔ Articulate advice from experts about learning and starting a career in AI
- ✔ What AI realistically can--and cannot--do
- ✔ How to spot opportunities to apply AI to problems in your own organization
- ✔ What it feels like to build machine learning and data science projects
- ✔ How to work with an AI team and build an AI strategy in your company



WHO SHOULD ATTEND THIS PROGRAM?

This course is designed for all C-level / President / Vice President / Director / Head / Manager of:

- ✔ Digital Transformation Managers
- ✔ Business Management
- ✔ Organization Development
- ✔ R&D managers
- ✔ Business Transformation specialists/Managers
- ✔ Project Management

Agenda

SESSION 1: INTRODUCTION

Module 1: Introduction

- What is AI?
- History of AI
- Turing Test
- AI Applications
- Types of AI
- Programming Languages for AI
- Success Stories
- Structure of AI

Module 2: Data

- Data Basics
- Types of Data
- Big Data
- Databases and Other Tools
- Data Process
- Ethics and Governance
- How Much Data Do You Need for AI?

SESSION 2: MACHINE LEARNING

Module 3: Supervised and Unsupervised Machine Learning

- What Is Machine Learning?
- What Can You Do with Machine Learning?
- The Machine Learning Process
- Applying Algorithms
- Supervised Learning
- Naïve Bayes Classifier
- K-Nearest Neighbor

- Regression
- Decision Tree
- Random Forest
- Ensemble Modeling
- Unsupervised Learning
- Clustering
- Association
- Anomaly Detection
- K-means clustering

Module 4: Reinforcement and Semi-supervised Machine Learning

- Reinforcement Learning
- Policy optimization or policy-iteration methods
- Q-learning or value-iteration methods
- Hybrid methods
- Semi-supervised Learning
- Generative models
- Low-density separation
- Laplacian regularization
- Heuristic approaches



SESSION 3: DEEP LEARNING AND OPTIMIZATIONS METHODS

Module 5: Deep Learning

- What Is Deep Learning?
- Difference Between Deep Learning and Machine Learning
- Deep Learning Use Cases
- Deep Learning Hardware
- When to Use Deep Learning?

Module 6: Optimization Algorithms

- Ant colony optimization algorithms (ACO)
- Genetic Algorithm
- Artificial Neural Networks (ANNs)
- Feedforward Neural Network
- Multi-Layer Perceptron Neural Network
- Radial Basis Function Neural Network
- Recurrent Neural Network
- Short-Term Neural Network
- Recurrent Neural Network
- Convolutional Neural Network (CNN)
- Generative Adversarial Networks (GANs)

SESSION 4: SOFTWARE ROBOTS

Module 7: Robotic Process Automation (RPA)

- What Is RPA?
- How to Implement RPA
- RPA and AI
- RPA in the Real World

Module 8: Natural Language Processing

- The Challenges of NLP
- Understanding How AI Translates Language
- Cleaning and Preprocessing
- Understanding and Generating Language
- Voice Recognition

- NLP in the Real World
- NLP Use Cases (optional)
- Voice Commerce
- Virtual Assistants
- Chatbots
- Future of NLP

SESSION 5: IMPLEMENTATION, FUTURE & CASE STUDIES

Module 9: Implementation of AI

- Approaches to Implementing AI
- The Steps for AI Implementation
- Identify a problem to solve
- Put together a strong team
- Select the right tools and platforms
- Create the AI model

Module 10: The Future of AI

- Autonomous Cars
- US vs. China
- Technological Unemployment

- The Weaponization of AI
- Drug Discovery
- Government
- AGI (Artificial General Intelligence)
- Social Good

Module 11: Workshop

- **Topic 1:** Application of AI to increase the energy efficiency in surface mining (Case Study 1)
- **Topic 2:** Application of AI to decrease the mine mobile equipment maintenance cost (Case Study 2)





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The Soofastaei Educations works directly with the prestigious universities and giant industrial companies to train the new generation of students and experts for the digitalized future industries.

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