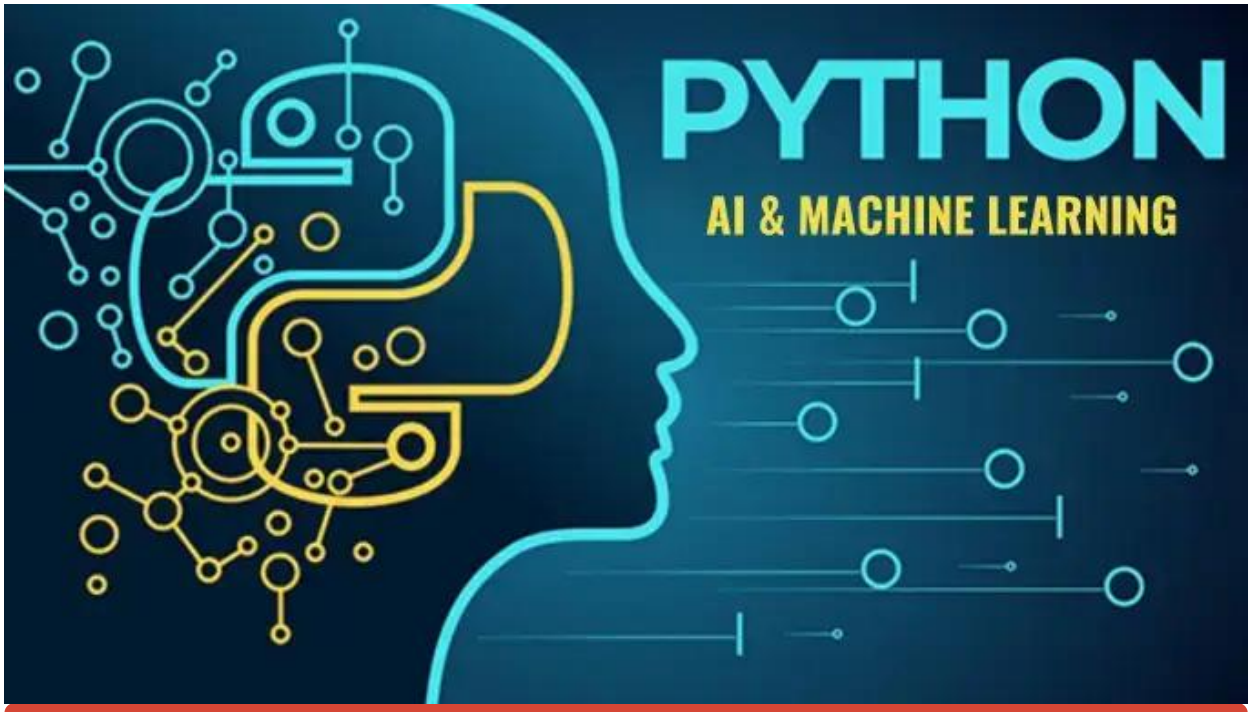


AI & Machine Learning In Python

Duration: 5 Days

Language: en

Course Code: IND02-111

Objective

Upon completion of this course, participants will be able to:

- Understand the importance of Python when creating artificial intelligence systems.
- Review the concepts, principles, and structures of artificial intelligence systems.
- Effectively plan, design, implement and monitor the performance of artificial intelligence and machine learning systems.
- Evaluate the typical functions of Python and how it can be used for artificial intelligence.
- Utilise Python to gather, analyse and present desired data.
- Compare the advantages and disadvantages of using Python to create an artificial intelligence system.
- Build specific artificial intelligence functions with Python, including neural networks and deep learning.

Audience

This course is designed for anyone who wishes to develop their artificial intelligence knowledge and create a system with Python applications. It would be most beneficial for:

- Operations Managers
- Project Managers
- Business Analysts
- Artificial Intelligence Engineers
- Machine Learning Engineers
- Business Owners
- Data Analysts
- Senior Executives

Training Methodology

This course uses a variety of adult learning styles to aid full understanding and comprehension. Participants will review existing artificial intelligence systems created through Python to highlight key features and areas for possible improvement.
All participants will be provided with a computer system and the most up-to-date version of Python to successfully participate in the learning exercises. They will participate in a variety of presentations, discussions, demonstrations, and individual activities, which will ensure that they can develop a full and comprehensive understanding of the taught content.

Summary

In the modern age of technology, various systems and applications have quickly been developed and popularised globally. Artificial intelligence and machine learning systems are rapidly becoming one of an organisation's most useful assets due to their effectiveness in increasing productivity.
Python is one of the most accessible applications to use for creating artificial intelligence. It is designed to be simple and easy to learn, making it favoured among those with limited IT knowledge. Despite the application’s simplicity, it can be used to create complex artificial intelligence systems.
Artificial intelligence systems can be used for a vast amount of tasks, however, its primary purpose is to gather, process and present data in your desired form. Depending on the type of machine learning processes and algorithms implemented, this data can be utilised to carry out different tasks, such as invoice processing and report generation. By automating these tedious and time-consuming tasks, human employees will have less responsibilities and can focus their attention elsewhere.

Automating tasks using artificial intelligence can minimise the potential of errors, optimise resource usage and reduce organisation costs.

Course Content & Outline

Section 1: Introduction to Artificial Intelligence

- Defining artificial intelligence.
- Comparing the benefits and limitations of artificial intelligence.
- Examine the various artificial intelligence systems and their ideal use and functions.
- Establishing an artificial intelligence system with the goal of problem-solving – state space search.
- Identifying the different states within the state space search algorithm – initial state to goal state.

Section 2: Knowledge Management in Python

- Assessing the available Python applications to find the most suitable options.
- Explain how Python is effective when creating AI systems.
- Understanding the process of logical inference.
- Describing the principles and influence factors within probability theory.
- Create a Bayesian network graph from probability data in Python.
- Using the Markov model method to predict changing systems.

Section 3: Machine Learning in Python

- Reviewing the role of machine learning within an AI system.
- Analysing and comparing the different types of machine learning – supervised, reinforced and unsupervised.
- Organising and categorising data through methods of classification, clustering, and repression.
- Utilising the data organisation methods for data segmentation and data ranking.

Section 4: Neural Networks and Deep Learning

- Deep learning structures and algorithms – neural networks, node, input, hidden, and output layers.
- Analysing the purpose and structures of neural networks.
- How deep learning neural networks process data in a way that mimics the human brain.
- Integrating deep learning into machine learning and AI systems.
- Understanding the rules neural networks must adhere to.

Section 5: Genetic Algorithms and Fuzzy Logic

- Achieving system optimisation through chromosome differentiation within genetic algorithms.
- How genetic algorithms function through a natural selection process,
- Integrating genetic algorithms with deep learning, neural networks, and other machine learning processes.
- Maximising variable processing with fuzzy logic.
- Calculating fuzzy vs probability.
- How to apply fuzzy logic and genetic algorithms to AI systems within Python.

Certificate Description

Upon successful completion of this training course, delegates will be awarded a Holistique Training Certificate of Completion. For those who attend and complete the online training course, a Holistique Training e-Certificate will be provided.

Holistique Training Certificates are accredited by the British Assessment Council (BAC) and The CPD Certification Service (CPD), and are certified under ISO 9001, ISO 21001, and ISO 29993 standards.

CPD credits for this course are granted by our Certificates and will be reflected on the Holistique Training Certificate of Completion. In accordance with the standards of The CPD Certification Service, one CPD credit is awarded per hour of course attendance. A maximum of 50 CPD credits can be claimed for any single course we currently offer.

Categories

IT & Computer Application, Technology, AI, Data and Visualisation

Tags

IT, technology, Artificial Intelligence, Computer Application, machine learning

Related Articles



Data Cleaning Best Practices: Unlocking The Power Of Accurate Data

Learn the importance of data cleaning and its benefits in enabling accurate decision-making. Discover best practices to implement an effective data cleansing strategy and overcome common data issues.

YouTube Video

https://www.youtube.com/embed/5W9tDVyyd80?si=ySAPDKXsBvwC6OKI