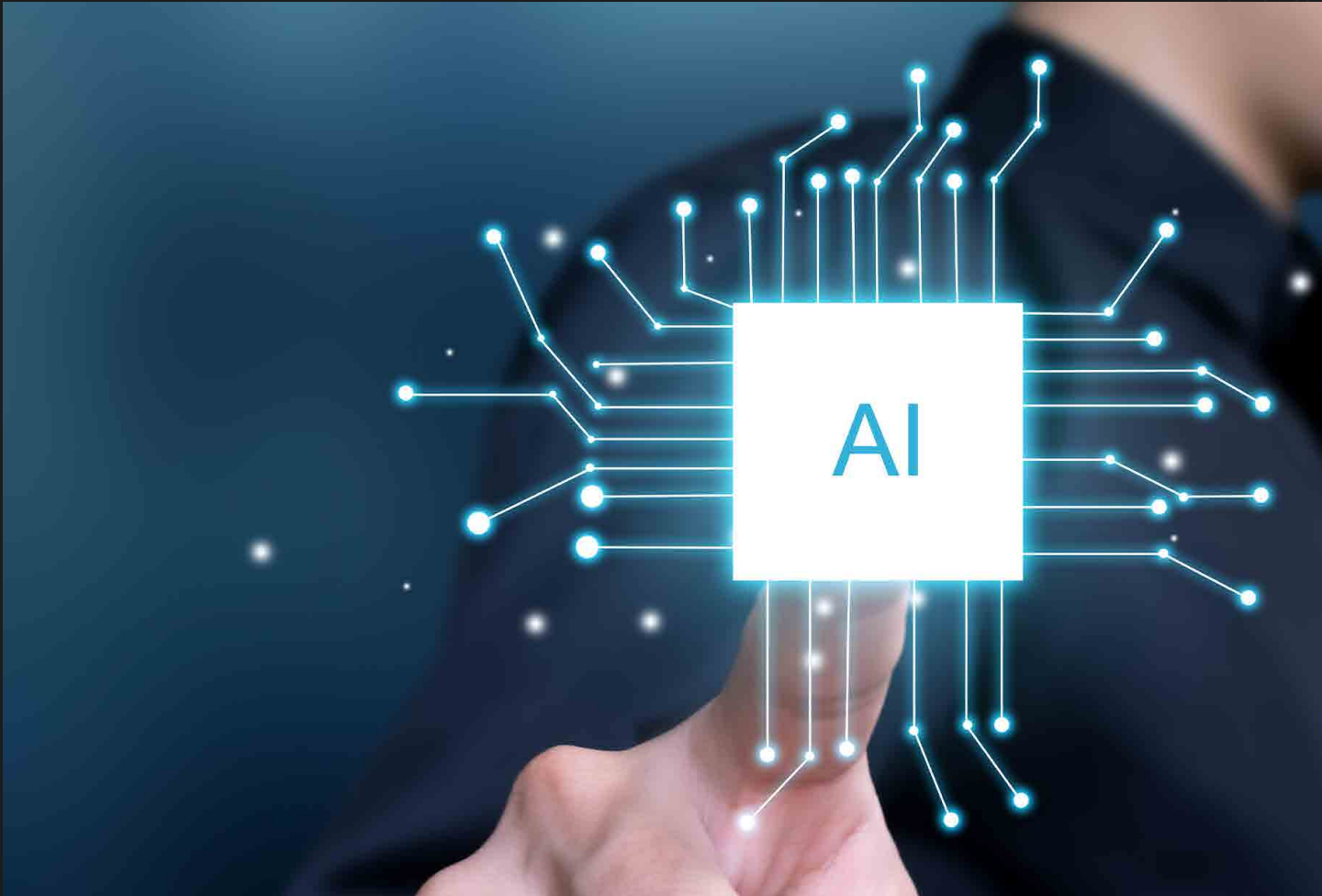# INFOSECTRAIN

Machine Learning with
PYTHON

COURSE HIGHLIGHTS

- 40+ hours of instructor-led training
- Covering the basics of Machine Learning
- Learning latest tools for Machine Learning using Python
- Applied learning

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Overview

A machine can only understand the language of 0's and 1's. To input this learning behavior into it, we develop a Machine Learning Model. These models are equivalent to mathematical equations with an added ability to change their parameters if new data is supplied to them. Python has a variety of libraries like NumPy, pandas, seaborn, etc which are well suited for all the tasks involved in an ML model development. Most of these are data manipulation, model selection, model training, etc. Machine learning with Python deep dives into the basics of Machine learning using python as a well-known programming language. Through Machine Learning, you can innovate solutions for common problems, like spam filters, assistants for any personal problems, and any fraud detections. Machine Learning also promotes the growth of Artificial Intelligence.

Target Audience

• Beginner with Application Development
• Software Developers
• Software Engineers

Pre-Requisite

• Prior knowledge of high-level programming language like Java or basics of Python

• Know how to use IDEs

Why Infosec Train?

Certified & Experienced Instructor	Flexible Schedule	Access to the recorded sessions
Post Training Support	Tailor Made Training	4 hrs/day in Weekend/ Weekday

COURSE OBJECTIVE

- Introduction
- Regression
- Classification and Clustering
- Support Vector Machine
- Tree
- Ensemble Machine Learning

Course Content

Introduction and Regression

• Introduction
• Anaconda
• Regression

- Scikit-Learn
- Correlation Analysis and Feature Selection
- Linear Regression with Scikit-Learn
- Robust Regression
- Evaluate Regression Model Performance
- Multiple Regression
- Polynomial Regression
- Dealing with Non-linear Relationships
- Data Pre-processing

Classification and Clustering

• Classification

- Introduction to Classification
- Understanding MNIST
- Stochastic Gradient Descent (SGD)
- Confusion Matrix
- Precision
- Recall
- F1 Score
- Precision Recall Trade-off

• Clustering

Support Vector Machine and Tree

• Support Vector Machine

- Support Vector Machine (SVM) Concepts
- Linear SVM Classification
- Support Vector Regression
- Polynomial Kernel

• Tree

- Introduction to Decision Tree
- Training and Visualizing a Decision Tree
- Visualizing Boundary
- Tree Regression, Regularization and Over Fitting
- End to End Modelling

Ensemble Machine Learning

• Ensemble Machine Learning
  - Ensemble Learning Methods Introduction
  - Bagging
  - AdaBoost
  - Gradient Boosting Machine
  - XGBoost
  - Random Forests and Extra-Trees