

# Advanced Training in Artificial Intelligence

## About the Program

This Advanced training program in Artificial Intelligence helps you master the skills looked for by top employers for the various roles. This course will be delivered by top trainers of *Sunshine Learning & technologies* from the same industry. You will master skills like Python, Machine Learning, Git, Advance Statistics, deploying machine learning models on cloud, Artificial Intelligence concepts and more. Artificial Intelligence course is an online training program that aims to make you master all the basic and advanced level skills in the various tools and technologies involved in the field of Machine Learning, Deep Learning, and Artificial Intelligence.

Core Curriculum:

### Module 1: Git

- 1.1 What is Version Control?
- 1.2 Types of Version Control System
- 1.3 Introduction to SVN
- 1.4 Introduction to Git
- 1.5 Git Lifecycle
- 1.6 Common Git commands
- 1.7 Working with branches in Git
- 1.8 Merging branches
- 1.9 Resolving merge conflicts
- 1.10 Git workflow

### Module 2: Python with Data Science

- 2.1 Introduction to Data Science using Python
- 2.2 Python basic constructs
- 2.3 Statistics and probability
- 2.4 OOPs in Python
- 2.5 NumPy for mathematical computing
- 2.6 SciPy for scientific computing
- 2.7 Data manipulation

### Module 3: Advanced Statistics

- 3.1 Central tendency
- 3.2 Variability
- 3.3 Hypothesis testing
- 3.4 Anova
- 3.5 Correlation
- 3.6 Regression
- 3.7 Probability definitions and notation
- 3.8 Joint probabilities
- 3.9 The sum rule, conditional probability, and the product rule
- 3.10 Bayes theorem

## **Module 4: Machine Learning & Prediction Algorithms**

- 4.1 Machine learning using Python
- 4.2 Supervised learning
- 4.3 Unsupervised learning
- 4.4 Dimensionality reduction
- 4.5 Time-series forecasting

## **Module 5: Data Science at Scale with PySpark**

- 5.1 Introduction to Big Data and Apache Spark
- 5.2 Apache Spark framework and RDDs
- 5.3 PySpark SQL and Data Frames

## **Module 6: AI & Deep Learning using TensorFlow**

- 6.1 Introduction to Deep Learning and Neural Networks
- 6.2 Multi-layered Neural Networks
- 6.3 Artificial Neural Networks and various methods
- 6.4 Deep Learning libraries

## **Module 7: Deploying Machine Learning Models on Cloud (MLOps)**

- 7.1 Need for MLOps
- 7.2 Deploying Machine learning programs in the production environment
- 7.3 Working with Jenkins & Docker for deploying Machine Learning solutions

## **Module 8: Data Visualization with Tableau**

- 8.1 Introduction to data visualization
- 8.2 Architecture of Tableau
- 8.3 Working with metadata and data blending
- 8.4 Creation of sets
- 8.5 Working with filters
- 8.6 Organizing data and visual analytics
- 8.7 Working with mapping
- 8.8 Working with calculations and expressions
- 8.9 Working with parameters
- 8.10 Charts and graphs
- 8.11 Dashboards and stories
- 8.12 Tableau Prep
- 8.13 Integration of Tableau with R and Hadoop

## **Module 9: Data Science Capstone Project**

In the Data Science Capstone project, you will use all the knowledge and skills you have acquired throughout in this advanced certification program and gain industry experience in the domain.

## **Self-Paced Courses Module 10: Data Analysis with MS Excel**

- 10.1 Entering data
- 10.2 Referencing in formulas
- 10.3 Name range
- 10.4 Understanding logical functions & conditional formatting
- 10.5 Important formulas in Excel
- 10.6 Working with Dynamic table
- 10.7 Data transformation for analysis
- 10.8 Working with charts for data visualization
- 10.9 Pivot tables in Excel
- 10.10 Working with Macros in Excel and working with VBA

## **Module 11: Data Wrangling with SQL**

- 11.1 Introduction to SQL
- 11.2 Database normalization and entity-relationship model
- 11.3 SQL operators
- 11.4 Working with SQL: Join, tables, and variables
- 11.5 Deep dive into SQL
- 11.6 Functions
- 11.7 Working with Subqueries
- 11.8 SQL views, functions, and stored procedures

## **Module 12: Natural Language Processing and its Applications**

- 12.1 Overview of Natural Language Processing and text mining
- 12.2 Text mining, cleaning, and processing
- 12.3 Text classification
- 12.4 Sentence structure, sequence tagging, sequence tasks, and language modeling
- 12.5 Introduction to semantics and vector space models

### **Hands On:-**

There will be separate Hands-On on each topic.