



## **COURSE ON MACHINE LEARNING**

### **COURSE DESIGN**

High-quality videos, slides, hands-on examples, quizzes, automated assessments, case studies, and real-world projects.

### **COURSE MATERIAL**

Lifetime access to cutting-edge self-paced learning content.

### **LAB**

90 days Lab

### **SUPPORT**

Email support to answer your queries and we've also launched Discussions - a Q&A site for Artificial Intelligence, Machine Learning, Deep Learning, Big Data & Data Science professionals.

### **CERTIFICATE**

Earn a certificate in Course on Machine Learning.

### **SELF PACED LEARNING**

Lifetime access to the recordings of a previous batch of instructor-led training, assessments, quizzes, and projects



## Syllabus

### **Python**

Introduction to Linux

Introduction to Python

Hands-on Using Jupyter on Cloudxlab

Overview of Linear Algebra

Introduction to Numpy & Pandas Project - Analyze Your Mailbox

### **Introduction to Statistics**

- Statistical Inference
- Types of Variables
- Probability Distribution
- Normality
- Measures of Central Tendencies
- Normal Distribution

### **Machine Learning Applications & Landscape**

- Introduction to Machine Learning,
- Machine Learning Application

### **Introduction to Ai**

- Different Types of Machine Learning - Supervised, Unsupervised
- Reinforcement

### **Building End-to-end Machine Learning Project**

- Machine Learning Projects Checklist,
- Frame the Problem and Look at the Big Picture
- Get the Data
- Explore the Data to Gain Insights
- Prepare the Data for Machine Learning Algorithms
- Explore Many Different Models and Short-list the Best Ones
- Fine-tune Model
- Present the Solution
- Launch, Monitor and Maintain the System

## **Classifications**

- Training a Binary Classification,
- Performance Measures
- Confusion Matrix
- Precision and Recall
- Precision/recall Tradeoff
- the Roc Curve
- Multiclass Classification
- Multilabel Classification
- Multi-output Classification

## **Training Models**

- Linear Regression
- Gradient Descent
- Polynomial Regression
- Learning Curves
- Regularized Linear Models

- Logistic Regression

## **Support Vector Machines**

- Linear Svm Classification
- Nonlinear Svm Classification
- Svm Regression

## **Decision Trees**

- Training and Visualizing a Decision Tree
- Making Predictions
- Estimating Class Probabilities
- the Cart Training Algorithm
- Gini Impurity or Entropy
- Regularization Hyperparameters
- Regression
- Instability

## **Ensemble Learning and Random Forests**

- Voting Classifiers
- Bagging and Pasting
- Random Patches and Random Subspaces
- Random Forests
- Boosting
- Stacking

## **Dimensionality Reduction**

- the Curse of Dimensionality
- Main Approaches for Dimensionality Reduction
- Pca

- Kernel Pca
- Lle
- Other Dimensionality Reduction Techniques

## **Projects**

1. Predict the Median Housing Prices in California
2. Classify Handwritten Digits in Mnist Dataset
3. Noise Removal from the Images
4. Predict the Class of Flower in Iris Dataset
5. Predict Which Passengers Survived in the Titanic Shipwreck
6. Predict Bikes Rental Demand
7. Build a Spam Classifier