Course 17: Principles of Machine Learning: R Edition

Modality: Self-Paced Learning

Duration: 48 Hours

SATV Value:

CLC:

NATU:

SUBSCRIPTION: Learn, Master

About this course:

Machine learning uses computers to run predictive models that learn from existing data in order to forecast future behaviors, outcomes, and trends.

In this data science course, you will be given clear explanations of machine learning theory combined with practical scenarios and hands-on experience building, validating, and deploying machine learning models. You will learn how to build and derive insights from these models using R, and Azure Notebooks.

Course Objective:

- Data exploration, preparation and cleaning
- Supervised machine learning techniques
- Unsupervised machine learning techniques
- Model performance improvement

Audience:

- Data Analyst
- Programmers

Prerequisite:

- A basic knowledge of math
- Some programming experience – R is preferred.
- A willingness to learn through self-paced study.

Course Outline:

Introduction to Machine Learning

- High Level Data Science Process
- Overview of Machine Learning
- Lab

Exploring Data

- Exploratory Data Analysis for Regression
- Exploratory Data Analysis for Classification
- Lab

Cleaning and Preparing Data

- Data Preparation and Cleaning
- Feature Engineering
- Lab

Getting Started with Supervised Learning

- Regression
- Classification
- Lab

Improving Model Performance

- Principles of Model Improvement
- Techniques for Improving Models
- Dimensionality Reduction
- Lab

Machine Learning Algorithms

- Introduction to Decision Trees
- Ensemble Methods
- Neural Networks
- Support Vector Machines (SVMs)
- Bayes Theorem
- Lab

Unsupervised Learning

- Clustering
- Lab

Final Exam

- Final Challenge