

# Machine Learning with Python

Learn via: **Classroom / Virtual Classroom / Online**

Duration: **2 Gün**

<https://bilginc.com/tr/egitim/machine-learning-with-python-5578-egitimi/>

## Overview

Python (along with R) has become the dominant language in machine learning and data science. It is now commonly used to fit complex models to messy datasets. This two-day intensive course will equip you with the knowledge and tools to undertake a variety of tasks in a standard machine learning analytics pipeline. We stress the importance of data preparation, both in terms of data standardisation and feature selection, before tackling model building. The course covers regression and classification models, including, tree-based methods, clustering and sparse regression models. Model selection is introduced using cross-validation and bootstrapping.



## Prerequisites

It is expected that participants are comfortable using the Python programming language and common data structures. Some exposure to common statistical terms would be an advantage, but not essential Attendance of the Introduction to Python course or equivalent experience should be sufficient.

## What You Will Learn

- How to build and quantitatively assess a variety of models suitable for a range of problems
- The importance of data preprocessing and regularisation
- Confident compare the efficacy of their models using a rigorous training and testing framework
- How various types of models operate
- Some modern, state of the art machine learning techniques

## Outline

### **Introducing Machine Learning (ML)**

An introduction to machine learning and the associated packages in Python, such as Numpy, Scipy, and SciKit-Learn.

### **Data Reprocessing**

Learn the why and how about preprocessing your data with scaling transformations and one hot encoding. We cover typical standardisation and normalisation procedures.

### **Introduction to Modelling**

Introductory modelling techniques such as linear regression and how we move from a statistical model to a machine learning model.

### **Model Assessment**

Quantify the effectiveness of your models using training, validation and test sets plus techniques such as cross-validation. We discuss the different metrics

that can be used to judge a model and which are appropriate

### **Regularisation**

Techniques to avoid overfitting and to perform feature selection, such as lasso, ridge and elastic net regression.

### **Clustering**

An unsupervised learning technique for uncovering patterns and structure within data.

### **Advanced Techniques**

Some more advanced model fitting using algorithms such as gradient boosted trees and support vector machines.