

Machine Learning and Data Science Bootcamp

Instructors:

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I like to make videos related to code and tech in my free time. I also lead a few tech teams in startups, help in hiring talent for companies. I am also on a part time traveller, with 31 countries checked off so far!

Curriculum:

Getting started with Machine Learning

- Why Machine Learning and How it works
- Where we are using Machine Learning
- What is machine learning

Installation for Windows and MAC

- what you need - Windows
- Installing python Anaconda and setup - Windows
- Let 27s collect our tools first- MAC
- Installing python and anaconda - MAC

Python Quick Refresher

- Python datatypes
- Making decisions in python
- Loops in python

- Practice Python - 1 - Average list
- Practice Python - 2 - Palindrome
- Practice Python - 3 - Identity matrix
- Practice Python - 4 - Multiplication table
- Practice Python - 5 - Second largest
- Practice Python - 6 - merging lists

Mastering NUMPY Library

- Anaconda and python notebooks
- What is numpy
- Basics of numpy - generating matrix
- Numpy - matrix operations
- Numpy file paths and copy issues
- Numpy 2D selection
- Numpy conditional returns
- Numpy Mean Deviation 2C dot and cross products

Mastering PANDAS Library

- Introduction to PANDAS library
- Handle series with Pandas
- DataFrames in Pandas
- Subselection using pandas
- Conditional selection in PANDAS
- Multiple conditions in PANDAS
- basics of datacleanup

- Merging the data and operations
- Reading and writing files

Mastering MATPLOTLIB Library

- Introduction to MATPLOTLIB
- Our first linear graph using MATPLOTLIB
- plotting histograms in matplotlib
- plotting ads data with stackplot
- Pie chart for ads

Mastering SEABORN Library

- Introduction to SEABORN
- Plotting graphs with SEABORN
- Factor plot and Fat consumption data
- Swarmplot with IRIS dataset

Multi index Matrix

- Multilevel indexing

Portfolio Project - Classic 911 analysis

- Setup of resource files and python notebook
- Loading dataset and verifying it
- Answering top 3 questions in dataset
- Python knowledge with Pandas
- working with data time of python

- Group the data by Days and months

Data preprocessing for Machine Learning

- Data preprocessing basics for Machine Learning
- importing dataset and libraries
- Separating dependent and independent matrixes
- Imputation of missing values
- Dummy matrix and one hot encoder
- Preparing test and training dataset
- Feature scaling - Might be needed

Supervised, Unsupervised and Reinforcement Learning

- Supervised, Unsupervised and Reinforcement Learning

Linear regression algorithm

- Linear Regression theory
- Importing libraries and dataset
- creating test and training data sets
- Training the machine for prediction
- plotting graphs on training and predictions

Portfolio Project - Housing dataset analysis

- Housing dataset analysis using Linear Regression

Decision Tree Regression Algorithm

- How decision tree Algorithm works

- Loading our dataset for Decision tree
- Predicting values using Decision Tree algorithm

K-Nearest Neighbors Algorithm

- K-Nearest Neighbors theory
- loading data and libraries
- splitting data into training and test sets
- Applying KNN confusion matrix and plotting

Support Vector Machine Classifier

- Theory of Support Vector Machine SVM
- Loading libraries and dataset
- Test and training data with feature scaling
- Confusion matrix and stackoverflow debugging

Naïve Bayes Algorithm

- What is Bayes theorem
- Naive bayes and scikit docs for it
- importing dataset for NB
- data preprocessing for NB
- prediction and confusion matrix for NB

Neural Network and Deep Learning

- Neural Network and Deep learning
- Installing tensorflow

