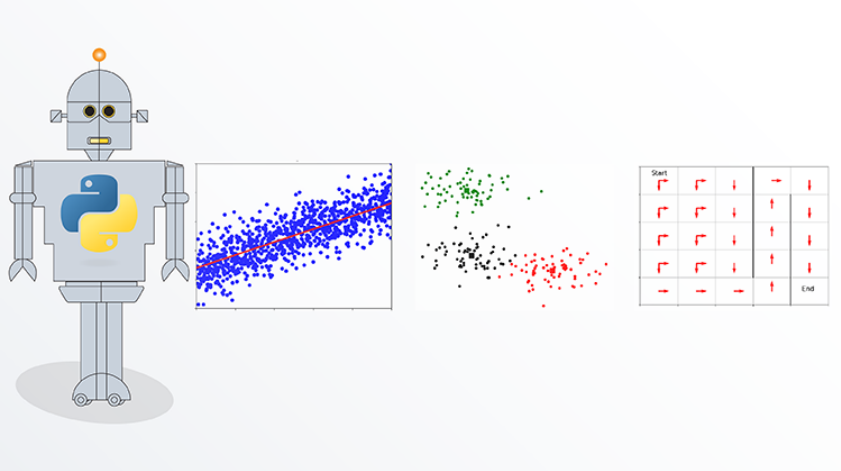
Course: What is Machine Learning?

Useful Machine Learning Resources



Chapter 1: Introduction

Wikipedia page for Machine Learning:

https://en.wikipedia.org/wiki/Machine_learning

Course Github site:

https://github.com/satishchandrareddy/WhatisML

Chapter 2: Supervised Learning

Wikipedia page for Supervised Learning:

https://en.wikipedia.org/wiki/Supervised_learning

MNIST Dataset:

http://yann.lecun.com/exdb/mnist/

Wikipedia page on artificial neural networks:

https://en.wikipedia.org/wiki/Artificial_neural_network

Udemy Course on Supervised Machine Learning by Instructor:

https://www.udemy.com/course/introduction-to-machine-learning-using-python/?referralCode=72CB662946372360906C

Chapter 3: Unsupervised Learning

Wikipedia page for Unsupervised Learning:

https://en.wikipedia.org/wiki/Unsupervised_learning

Wikipedia page for cluster analysis:

https://en.wikipedia.org/wiki/Cluster_analysis

Wikipedia page for Hierarchical Clustering:

https://en.wikipedia.org/wiki/Hierarchical_clustering

Wikipedia page for K means clustering:

https://en.wikipedia.org/wiki/K-means_clustering

Wikipedia page for PCA:

https://en.wikipedia.org/wiki/Principal_component_analysis

Chapter 4: Reinforcement Learning

Wikipedia page for Reinforcement Learning:

https://en.wikipedia.org/wiki/Reinforcement_learning

Good reference book:

Richard S. Sutton and Andrew G. Barton, "Reinforcement Learning: An Introduction", 2nd edition, MIT Press, 2018.

Free online pdf version:

http://www.andrew.cmu.edu/course/10-703/textbook/BartoSutton.pdf

Wikipedia page for K bandit Problem

https://en.wikipedia.org/wiki/Multi-armed_bandit

Wikipedia page Q Learning Algorithm Wikipedia page:

https://en.wikipedia.org/wiki/Q-learning

See also the Sutton and Barton book for details about the K bandit problem and Q Learning

Wikipedia page for AlphaZero

https://en.wikipedia.org/wiki/AlphaZero

Youtube movie about AlphaGo

https://www.youtube.com/watch?v=WXuK6gekU1Y

Chapter 5: Python Demos

Website for Anaconda package which is a downloadable data science platform for Python:

https://www.anaconda.com/

Website for Anaconda documentation:

https://docs.anaconda.com/anaconda/user-guide/

Python website:

https://www.python.org/

Numpy, Matplotlib, and Pandas packages websites:

https://numpy.org/

https://matplotlib.org/

https://pandas.pydata.org/

Google Colab site:

https://colab.research.google.com/notebooks/intro.ipynb

Notebooks run in Google Colab that present the examples shown in course:

Linear Regression

https://colab.research.google.com/github/satishchandrareddy/WhatisML/blob/master/Code/Supervised/notebook_supervised_regression_linear.ipynb

Binary Classification

https://colab.research.google.com/github/satishchandrareddy/WhatisML/blob/master/Code/Supervised/notebook_supervised_classification_binary.ipynb

Multi-Class Classification

https://colab.research.google.com/github/satishchandrareddy/WhatisML/blob/master/Code/Supervised/notebook_supervised_classification_multi.ipynb

MNIST Classification

https://colab.research.google.com/github/satishchandrareddy/WhatisML/blob/master/Code/Supervised/notebook_supervised_mnist.ipynb

K Means Clustering

https://colab.research.google.com/github/satishchandrareddy/WhatisML/blob/master/Code/Unsupervised/notebook_unsupervised_kmeans.ipynb

PCA

https://colab.research.google.com/github/satishchandrareddy/WhatisML/blob/master/Code/Unsupervised/notebook_unsupervised_pca.ipynb

K Bandit

https://colab.research.google.com/github/satishchandrareddy/WhatisML/blob/master/Code/Reinforcement/notebook_reinforcement_kbandit.ipynb

Maze

https://colab.research.google.com/github/satishchandrareddy/WhatisML/blob/master/Code/Reinforcement/notebook_reinforcement_maze.ipynb

Chapter 6: Concluding Remarks

Course Resources:

https://github.com/satishchandrareddy/WhatisML

Machine Learning Communities websites: Analytics Vidhya, Machine Learning Mastery, Medium, Towards Data Science:

https://www.analyticsvidhya.com/

https://machinelearningmastery.com/

https://medium.com/topic/machine-learning

https://towardsdatascience.com/

Machine Learning Frameworks:

https://en.wikipedia.org/wiki/Comparison_of_deep-learning_software

Link rating machine learning frameworks

https://www.edureka.co/blog/top-10-machine-learning-frameworks/

Specific packages: scikit-learn, Tensorflow, Pytorch, Caffe

https://scikit-learn.org/stable/

https://caffe.berkeleyvision.org/

https://pytorch.org/

https://www.tensorflow.org/

Reinforcement Learning frameworks:

https://keras-rl.readthedocs.io/en/latest/

https://opensource.google/projects/dopamine

https://tensorforce.readthedocs.io/en/latest/

https://openai.com/

Data Sources:

Kaggle:

https://www.kaggle.com/

University of California, Irvine, Machine Learning Repository:

https://archive.ics.uci.edu/ml/index.php