**DAT210x Programming with Python for Data Science**

**Course Outline** Created by Leon

The following topics are introduced in this course.

**Week 1: The Big Picture**

Data Science and Analysis

Machine Learning

The Possibilities

**Week 2: Data and Features**

Features Premiere

Determining Features

Manipulating Data

Feature Representation

Wrangling Data

Data and Features

**Week 3: Exploring Data**

Visualizations

Basic Plots

Higher Dimensionality

**Week 4: Transforming Data**

Transformations

PCA

Isomap

Data Cleansing

**Week 5: Data Modeling**

Clustering

Splitting Data

K-Nearest Neighbors

Regression

**Week 6: Data Modeling II**

SVC

Decision Trees

Random Forest

**Week 7: Evaluating Data**

Confusion

Cross Validation

Power Tuning

**Wrap-up: Final Exam & Final Projects(Optional)**