



Class 1: **Python for Machine Learning**

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FUHSD ADULT SCHOOL

Class take-aways ...



1. Working with industry standard Python tools: Jupyter Notebook
2. Build your Machine Learning portfolio on Github
3. Working with real data sets based on industry and research
4. Apply all knowledge to capstone project
5. Project presentations -- Get feedback from class and instructor
6. Get ready for next class -- Python for Deep Learning

Quick Intros ...

Sanjay:

1. Work as Data Scientist (Financial Analytics)
2. Teaching Python for kids
3. Teaching ML/DL @corporate engineering
4. +25 years in high-tech
5. UCSC (Data Analytics), MBA, MSEE
6. Switched careers from Hardware Engg to DS

@FUHSD, teaching:

1. Python for DS
2. Python for ML
3. Python for DL
4. Python for AI

LOGISTICS?



1. *Missing class and/or late homework/project submissions*
 - a. Write email to Sanjay
 - b. Sanjay_Agarwal@fuhsd.org
2. *Homework & Project submissions using Github*
 - a. Create Github account (to submit homework)
 - b. How to submit? Email link to Github repo
 - c. Sanjay_Agarwal@fuhsd.org



SCHEDULE

Week	Class Topic	Sharing	Homework
1	Introduction	Python Practice Notebook	Python Practice 1
2	Regression & Polynomial fit		Python Practice 2
3	Batch Regression and Data Normalization		Project with regression and Normalization
4	Classification		Project – Basic Classification
5	Classification with MNIST (Image Classification)		Project – Apply to images, text analysis
6	Clustering PCA – Principal Component Analysis		Project with Clustering or PCA
7	Capstone Project Presentations	Capstone Project	Overall Project

Week	Homework	Percentage
1	Python Practice 1	10
2	Python Practice 2	10
3	Regression HW	10
4	Classification - Basic	10
5	Classification - Project	10
5	Project Proposals	10
6	Project with Clustering/PCA	10
7	Projects Presentations	30
	Total	100



CLASS STRUCTURE

Class 1 take-aways ...

1. Intros, class-by-class session details, course take-aways, grading
2. Install Anaconda with Python 3.x
3. Create Github account
4. Slack for Q&A
5. Share Python notebook for HW1 (due before next class)
6. Start working on exercises in HW1



**ANY
QUESTIONS?**



TOOLS




TO DOWNLOAD:

- **Anaconda** (Python 3.x)
 - <https://www.anaconda.com/download/#windows> (WINDOWS)
 - <https://www.anaconda.com/download/#macos> (MAC)
 - **NOTE: Jupyter Notebooks** are included in Anaconda

Data Science tools ...

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Language ()

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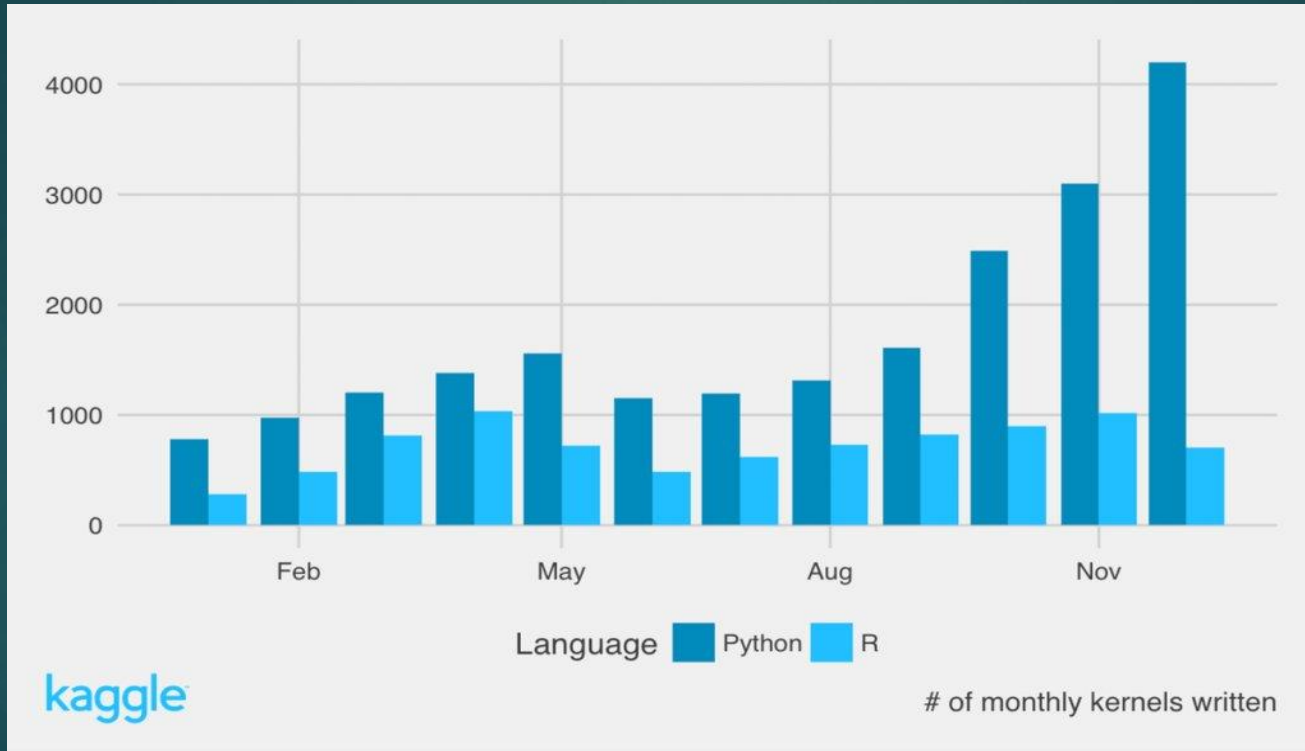
IDE ( jupyter)



Anaconda Installation

Kaggle language ...

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HAVE READY BY NEXT CLASS

1. Successfully downloaded Anaconda 3.7
2. Imported libraries
 - a. Pandas
 - b. NumPy
 - c. Matplotlib
3. Know how to open Jupyter Notebook on your computer

Homework 1

Shared Python notebook has 11 exercises

- Solve simple Python exercises
- 10 points
- Due date: Before next class
- Submission: Email Py notebook to
 - Sanjay_Agarwal@fuhsd.org