

FIN 290

PROGRAMMING AND DATA ANALYSIS FOR BUSINESS

WINTER 2019

Fredrick Park

Contact Information

Fredrick Park Ph.D.

Office: TBA

Phone: TBA

Email: fepark@uci.edu

Office Hours: TBA

Professor Bio



Fred Park is an Associate Professor of Mathematics & Computer Science at Whittier College. Prior to Whittier, he held postdoctoral positions at the University of Michigan-Ann Arbor, UCLA, and UC Irvine. He holds a distinguished teaching award from UCLA. His research interests include computer vision, machine learning, and data/predictive analytics.

Classroom Etiquette, Guidelines, & Policies

Meeting Location and Times:

SB2 117

Weds 1-3:50

Academic Honesty

By enrolling in this course, you agree to be bound by the University of California, Irvine's policy on academic honesty (http://www.senate.uci.edu/senateweb/default2.asp?active_page_id=754). This policy may also be found in your Graduate Student Handbook.

Attendance

Your attendance for each class session is expected, as is your active participation. If you miss a class for personal or business reasons, please inform the instructor in advance if at all possible. Absences without pressing reasons indicate disinterest in the course and will reflect on your grade. Initiate arrangements for submitting any make-up assignments.

Diversity & Inclusiveness Policy

The University of California, in accordance with applicable Federal and State law and University policy, does not discriminate on the basis of race, color, national origin, religion, sex, gender identity, pregnancy, physical or mental disability, medical condition (cancer related or genetic characteristics), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services. The University also prohibits sexual harassment. This nondiscrimination policy covers admission, access, and treatment in University programs and activities.

Contesting a Grade/Re-grading Policy:

Within 1 week from the day the exam is returned, a written request detailing why you feel the exam should be re-graded must be submitted to the instructor. Keep in mind that if a re-grade is granted, the entire exam will be re-graded and the grade can either increase or decrease.

Laptop Policy:

A laptop computer is required for this course.

Make-up Exams:

No make-up exams allowed. In the case of a documented illness or emergency, you may drop the midterm and weight the final 70%.

Teaching Assistant: Khushbu Agarwal

email: khushbua@uci.edu

The TA will hold a separate discussion section once a week at TBA in TBA

Course Objectives

The goal of this course is to learn programming and data analysis skills specific to business applications.

Course Overview

This course is an introduction to programming and data analysis for business utilizing the Python programming language. Python is a high level general purpose language that is one of the most popular languages used in FinTech today. It is also hugely popular in data science and machine learning. Practical coding and data analysis is emphasized. The course begins with basic Python syntax and programming. It then moves on to computational problem solving techniques and data analysis using popular Python packages. The course culminates with machine learning by way of Python application tools. Skills obtained in this course can easily be transferred to other languages. No prior programming knowledge is required.

Course Materials

- Textbook: *Python for Everybody, Exploring Data Using Python 3* by Charles R. Severance (http://do1.dr-chuck.com/pythonlearn/EN_us/pythonlearn.pdf)
- Pycharm IDE: (<https://www.jetbrains.com/pycharm/>). Full professional version is free if you have a valid student email.
- Anaconda Package for Python 3.7: (<https://www.anaconda.com/download/>)
- Python 3.6/3.7: (install with anaconda package for Python 3.7)

Grading

| | |
|--------------|-------------|
| Homework | 30% |
| Midterm | 30% |
| Final Exam | 40% |
| TOTAL | 100% |

Homework (30%)

There will be 5 assignments total worth 30% of your final grade. You may drop 1 assignment.

Midterm (30%)

In class midterm on 2/13.

Final Exam (40%)

Details TBA.

Course Schedule

Week 1 (1/7-1/11):

Introduction to Python. Objects, expressions, and numerical types. Branching, string basics, input and output. Reading Ch. 1-3.

Week 2 (1/14-1/19):

Functions and scoping: user defined, lambda, filter, and map. Global variables. Iterators. Strings. HW #1 due. Reading Ch. 4-6.

Week 3 (1/21-1/25):

Modules. File importing, exporting, and writing. Exceptions. (Holiday on 1/21). Reading Ch. 7

Week 4 (1/28-2/1):

Lists, sets, tuples, dictionaries, and regular expressions. Mutability. HW #2 due. Reading Ch. 8-11.

Week 5 (2/4-2/8):

Data scraping with Python (Json, Requests, Beautifulsoup). Object oriented programming. Reading Ch. 12-14.

Week 6 (2/11-2/15):

Data Analysis using Python: Numpy, SciPy, Pandas, Matplotlib. HW#3 due. Midterm Exam 2/13 in class.

Week 7 (2/18-2/22):

Data Analysis using Python Cont'd. (Holiday on 2/18)

Week 8 (2/25-3/1):

Machine Learning using Python: Scikit-learn. HW#4 due. Supplemental lecture on stochastic gradient descent outside of class takes place this week on TBA.

Week 9 (3/4-3/8):

Keras/Pytorch for Deep Learning.

Week 10 (3/11-3/15):

Keras/Pytorch for Deep Learning. HW#5 due

Final Exam: TBA.