

Abraham (AJ) Druck

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA

May 2021

BS in Mathematical Sciences; Concentration in Operations Research and Statistics

Minor in Computer Science

GPA: 3.71

RESEARCH EXPERIENCE

Computer Human Interaction: Mobile Privacy Security Lab, Carnegie Mellon University

January 2020 – May 2020

Credited Undergraduate Research Assistant under Dr. Jason Hong

- Tested various machine learning models to caption images.
- Ran a user study on Amazon MTurk to find common errors and analyzed and parsed the resulting data.
- Integrated results into online platform to enable researchers to identify common model mistakes.

“Intersection Between Estimation and Optimization”, Carnegie Mellon University

May 2019 – August 2019

Funded Undergraduate Research Assistant under Dr. Gérard Cornuéjols

- Focused on whether certain estimators of general data were admissible, including the MLE and James Stein Shrinkage estimator.
- Tested various loss functions and assumptions on the distribution of data.

CODING/DEVELOPER EXPERIENCE

Full Stack Developer for Project: Exam-Optimum, Mellon College of Science

June 2019 - Present

- Optimized scheduling by reducing exam date conflicts based on student enrollment.
- Widely used within the Mellon College of Science and expanding to other colleges.
- Developed in Python using a Flask framework and SQL-Lite to communicate with servers.

Teaching Assistant for Course # 15-112: Fundamentals of Programming

September 2018 – December 2019

- Teaching assistant competitively chosen for an introductory coding class taught in Python.
- Responsibilities included a weekly recitation of ~31 students, two one-hour review sessions a week, and weekly office hours.
- It was also my duty to monitor struggling students and reach out to them for extra help if needed.

LEADERSHIP EXPERIENCE

Lead Teaching Assistant for Course # 15-112: Fundamentals of Programming

Summer 2019

- I dealt with all grading issues (including rubrics and regrade requests) and oversaw trends in office hours and student learning.

Freshman Orientation Counselor

August 2019

- I helped ease the transition for incoming students, making sure they were comfortable in their new environment.

Honors and Awards

Dean's List (For GPA above 3.5)

December 2017, May 2018, December 2018, May 2019, December 2019

SKILLS

Programming Skills: C, Python, R, SML, HTML/CSS, Latex, Git Version Control.

Languages: Fluent in English. Fluency in Hebrew. Limited Working Proficiency in Spanish.

Selected Coursework

Fundamentals of Programming (C, Python)

- Built simple virtual machine, and used various data structures (heaps, trees, linked lists, unbounded arrays).

Intro to Machine Learning (Python)

- Implemented various techniques such as neural nets, reinforcement learning, Viterbi algorithm, and decision trees.

Artificial Intelligence (Python)

- Implemented concepts such as Bayes nets sampling as well as value iteration and Q-learning.

Intro to Systems Programming (C)

- Covered topics such as sockets, concurrency, caching, signals, and malloc.

Natural Language Processing (Python), Advanced Data Analysis (R), Parallel/Sequential Data Structs/Algos (SML)

Linear Algebra, Discrete Math, Differential Equations