

EDUCATION

Case Western Reserve University

Aug. 2018 - May 2022

Bachelor of Arts with majors in Computer Science, Economics, & Philosophy

Minors: Artificial Intelligence & Political Science

GPA: 3.89 in major - Maybell S. Donnell Award, Dean's Honors List 2018-2022

Certifications - Google Data Analytics, Google Advanced Data Analytics (In Progress)

TECHNICAL SKILLS

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|-----------------------------|---------------------|---------------------|
| • Machine Learning | • Data Analysis | • Java & Algorithms |
| • Python | • SQL | • R & Stata |
| • Scikit-learn & Tensorflow | • Spark & Hadoop | • Tableau |
| • SVM & RL | • Jupyter Notebooks | • Git |

EXPERIENCE

CALIFORNIA HOUSING DEPARTMENT

June 2022 - March 2023

Data Science Consultant (Contract)

- Reduced 90% of parcel analysis and financial calculation overhead by automating parcel distribution decisions using PyXLL and Excel VBA, resulting in significant cost savings for the department.
- Achieved 81% accuracy on an SVM ensemble to predict the likelihood of obtaining building permits on land parcels using the generated financial metrics in Python (using Scikit-Learn).
- Developed regression-based algorithms to accurately generate financial metrics using comprehensive parcel data, including information on base-zoned and bonus-zoned units, building permits, and assessor data.
- Presented these findings leading to 7 other cities to join the project, thus increasing the total data availability by 400%.
- Communicated with technical and non-technical professionals to leverage their experience in related works.

CASE SCHOOL OF ENGINEERING

Dec. 2021 - May 2022

Research Lead

- Reduced professors' workloads by providing on-demand Statics Engineering practice to students in over 80 engineering schools (available in portfolio).
- Secured funding to hire 3 new workers by building a demo .NET image processing application to find key body points using Blazepose, Caffe, and OpenCV in Python.
- Led this team to remodel the desktop version into a web application using HTML and JavaScript.
- Improved the robustness of the algorithm by 35% for off-center and obscure image angles.

WEATHERHEAD SCHOOL OF ECONOMICS

Aug. 2019 - May 2022

Teaching Assistant

- Facilitated student success and improved grades by 17% compared to other cohorts through coaching students in data analysis via laboratory sections in R, Stata, and Python.
- Modernized graduate-level course material by creating new projects, including a machine learning project for Advanced Econometrics, which accounted for 20% of assignments and lectures.
- Extended the Public Finance lecture series by conducting a semester-long supervised independent study on Economic Philosophy. The final essay contribution was selected to become a new lecture.

GRADUATE COURSE RESEARCH

- Studied Gradient Ascent as applied to the poisoning of Support Vector Machines. This research delved into flip cost functions for potential attackers. Achieved 12 % reduction in accuracy post-poisoning.
- Investigated Online Planning with Reinforcement Learning. Optimized scheduling algorithms resulting in a 3-5% increase in planning efficiency for a 2012 paper.
- Implemented the Cascading Inverse Reinforcement Learning algorithm with a particular focus on alternative regressions in the estimation step. Due to the sparsity of the sample space, Gaussian Process and Ridge regressions increased our R-Squared by as much as 20 %.