ETHAN LEE

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EDUCATION

Harvard University — Cambridge, MA

A.B in Computer Science and Statistics, GPA: 3.934/4.00 — May 2023

A.M in Statistics, GPA: 3.669/4.00 — May 2023

Relevant Coursework: Quantitative Finance. Statistical Inference. Machine Learning. Data Structures & Algorithms. Probability. Quantum Computation & Quantum Complexity. Systems Programming & Machine Organization.

Activities: Harvard Open Data Project (President). Harvard Computer Society (Director of Diversity & Inclusion). Datamatch (Algorithms/Web Dev). Harvard Data Analytics Group. Harvard Crimson. Asian American Dance Troupe.

Needham High School — Needham, MA

US Presidential Scholars Semifinalist. Valedictorian. Class Day Speaker. 5-time AIME. MIT CSAIL Lab Intern. — June 2019

WORK EXPERIENCE

Optiver — Chicago, IL

Graduate Trader — August 2023 – November 2023

- Completed training program for options theory fundamentals, underwent month-long simulated trading, and conducted research to find and test profitable trading strategies. Passed SIE & Series 57 Exams.

Capital One — New York, NY

Intern, Financial Software — June 2022 – August 2022

- Developed a unified testing environment in Python and JavaScript for simulating investment banking decisions, regression tests, and other unit tests to be used by Capital One's Capital Markets division.

World Data Lab — Vienna, Austria

Principal Investigator, Econometric Modeling and Policy Research — August 2021 – March 2022

- Created econometric modeling algorithm for classifying economic and financial factors in NYC data; to be used to affect policies on financial recovery from COVID-19 in the Bronx.
- Selected by Alfred P. Sloan Foundation for research grant through "extremely rigorous" review.

Republic of Paraguay, Department of Public Contracting — Asuncion, Paraguay

Intern, Financial Modeling — June 2021 – September 2021

- Predicted market prices of goods/services in Paraguay's public procurement process using R and Python.
- Used linear regression, random forest, XGBoost, generalized additive model, and elastic net regression; reduced RMSE to within 3 USD of actual prices; final model implemented in Paraguay financial corruption investigations.

Echelon Insights (echeloninsights.com) — Washington, D.C.

Intern, Data Science — June 2020 – August 2020

- Sentiment Analysis Project: Created sentiment analysis models for business discourse using natural language processing and neural networks with Python; improved model accuracy from 15% to 60%.
- Political Data Scraping Project: Scraped election result data from 100+ congressional districts through BeautifulSoup.

LEADERSHIP & PROJECTS

Analytical Sports Betting Framework — Chicago, IL

Initiative Leader — November 2023 – Present

- Translating fundamentals of trading theory into an analytical approach to sports betting with an optimal edge-variance and sizing framework.

Causal Effect of Abortion Restrictions — Cambridge, MA

Project Member — April 2023 – May 2023

- Analyzed the benefits of a multi-resolution framework in determining the validity of the parallel trends assumption to identify the causal effects of statewide abortion restrictions on female employment, health, and education.

Harvard Open Data Project — Cambridge, MA

President — March 2021 – April 2022

- Led and managed 250+ members and $15k+ in funds; oversaw renovation and update of hodp.org.
- With Cambridge Open Data Program, organized annual datathon; led case competition with 150+ participants on analyzing housing market and affordability in Cambridge; reports presented to Cambridge zoning and housing staff.

Philippines Job Market Analysis — Cambridge, MA

Project Member — November 2020 – December 2020

- Conducted analysis of factors of first-time salaries in Philippines, investigating effects of industry, gender, and university.
- Used linear regression, mixed effects, LASSO, and random forest models; RMSE of best model as low as 0.18.

SKILLS & INTERESTS

Certifications: SIE, Series 57

Technical Skills: Financial Data Analysis (NumPy/Pandas/Scikit-learn), Options Theory, Trading Software Research, Python, R, SQL, JavaScript (React, Node/Express, D3), C++, Java, HTML/CSS, MATLAB, OCaml, and Coq.

Personal Interests: Applied Machine Learning, Sports Analysis, Personal Investing, Story Writing, Music Composition.