Iris Lang

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Education

HARVARD UNIVERSITY *Cambridge, MA*

Bachelor of Arts in Computer Science & Statistics, Concurrent Masters in Statistics. GPA: 3.87/4.00 *May 2025*

- Relevant Coursework: Data Structures & Algorithms, Intro to Probability (Fall '22, '23 Teaching Fellow), Linear Algebra, Real Analysis, Probability Theory (Grad), Unsupervised Learning, Machine Learning, Statistical Inference (Grad), Intro to Statistical Inference (Spring '24 TF), Stochastic Processes, Systems Programming, Abstraction & Design in Computation, Incentives in the Wild: from Tanking in Sports to Mining Cryptocurrencies, Time Series (Grad), Theoretical Computer Science, Sequential Decision Making (Grad), Capital Markets
- Current Coursework (Fall 2024): MIT Machine Learning (Grad), Generalized Linear Models (Grad)

AMERICAN HERITAGE SCHOOL *Plantation, FL*

Full Academic Scholarship, Top Scholar *Aug 2017 – May 2021*

Weighted GPA: 6.09, Unweighted GPA**:** 4.00/4.00, ACT: 36/36

- Honors: USA (Junior) Math Olympiad (USAMO x1, USAJMO x1) Qualifier, 4x American Invitational Mathematics Exam Qualifier, USA Math Talent Search (USAMTS) Gold, USA Computing Olympiad (USACO) Silver. JV Soccer, Varsity Track.

Skills

Technical: Python, C++/C, R, SQL, Java. Packages: Pandas, Numpy, Matplotlib.

Experience

CITADEL SECURITIES TRADING INTERN *Jun 2024 – Aug 2024*

Summer 2024 Internship (Semi-Systematic Equity Options, Index Options)

- Participate in lectures and exams (options theory, ETFs, ADRs, equities), mock trading (electronic, open outcry) and gaming. Shadow traders. Work on alpha generation research with quantitative researchers. Productionized systematic changes to the way edge is charged in index options by conducting data analysis in Python and SQL (BigQuery), improving slippage and PnL significantly. Monitored impact using trading dashboards.

DANA-FARBER CANCER INSTITUTE *Jan 2024 – Present*

Research Fellow at the DFCI, under Dr. Giovanni Parmigiani (Professor of Biostatistics)

- Developing Bayesian Hierarchical methodology to model Mutational Signatures. Senior thesis research (joint concentration).

CITADEL SOFTWARE ENGINEERING INTERN *Jun 2023 – Aug 2023*

Portfolio Construction Group (PCG) – Risk Management Team for Citadel and CitSec businesses

- Add features to PnL stress vector Pricing Pipeline including caching, persistent storage (Python, MSSQL).
- Expand PCG's adoption of platform engineering tool set by migrating key shock generation services from Bamboo and Kubernetes to modern in-house platform and build system to leverage inter-team code dependencies.

MACHINE INTELLIGENCE LAB *May 2022 – Aug 2023*

Research Fellow at the Network Science Institute, affiliated with Harvard Schools of Engineering, Public Health

- Develop a dynamic, real-time learning approach to forecast the importation of Monkeypox in the United States using novel data sources (Google Trend, airline data), statistical methods, time series analysis, and machine-learning models. Presented findings to the Centers for Disease Control and Prevention (CDC). Publication in progress. Harvard Summer Data Science Fellow.

Projects/Leadership

DATAMATCH *Sep 2021 – May 2024*

Algorithms Team Lead

- Created user bio similarity metric for the scoring function using NLP and sentence transformers. Created spotify profile similarity metric based on users' top songs using unsupervised ML techniques such as Nonnegative Matrix Factorization.
- Develop scoring and matching algorithms in Python and C++ for matchmaking service used by over 52,000 college students across 40 universities. Lead team of 15 members, expanded from a previous team size of 5.

DATA ANALYST *Jan 2022 – May 2022*

Harvard Undergraduate Data Analytics Group

- Built a NLP model, for Fortune 100 company, using TF-IDF/raw text NLP featurization to predict if a form requires a signature.

SWIPER (GIG ECONOMY MATCHING SERVICE) *Nov 2021 – Dec 2021*

Class Project

- Develop frontend (Javascript, HTML, CSS) & backend (Python, SQL) for webpage matching gig economy workers with tasks.

CANADA/USA MATHCAMP *Jul 2020 – Aug 2020*

Summer Program Attendee

- One of 120 mathematicians selected from international pool. Studied undergrad. and grad. level math including topics ranging from group theory to algebraic geometry. Conducted gender gap research through mentored project, analyzed survey data in R.

FLORIDA STUDENT ASSOCIATION OF MATHEMATICS (FLSAM) *Aug 2017 – May 2021*

President, National-level Competitor (HMMT, ARML, CMIMC, PUMaC)

- Represent and lead Florida at competitions. Manage finances, operate team selection algorithm, coordinate with curriculum committee and regional coordinators, write problems for tryouts. Oversee student-run organization made up of 300+ people.