Aaron Sun

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Math & CS new-grad from Harvard passionate about data science and software development

Education

Harvard University May 2024

B.A in Applied Mathematics: Economics and Computer Science

• Coursework: Data Structures & Algorithms, Artificial Intelligence, Economics & Computation, Complex and Fourier Analysis, Statistical Inference, Applied Linear Algebra & Big Data, Game Theory, Abstraction and Computation

• Activities: Harvard-MIT Math Tournament (Chief Proctor & Software Lead), Harvard Consulting on Business & Environment (Lead Analyst & Associate), Harvard Computer Society

Relevant Experience

Quantitative Trader Intern, **Optiver** Jun - Aug 2023

• Led & operated a simulated trading desk for TSLA options, generating ~50k over 4 weeks- proficiently utilized Neptune, Bloomberg, & Python tooling to consistently produce returns

• Developed and tested a new quantitative trading strategy to capitalize on the July FOMC meeting: analyzed historical market flow & liquidity data to identify correlations between SPX, NASDAQ, and TSLA volatility, Sharpe of 2.8 when backtested over previous events

• Gained in-depth understanding of Black-Scholes, stochastic calculus, & financial instruments

Software Engineer Intern, **HubSpot** Jun - Aug 2022

• Ideated & created the JavaScript SB Package Center, an intuitive interface that aggregates JS enabled components across HubSpot; accessed by 100s of engineers to assess & build apps.

• Developed a comprehensive Component Health UI, automatically providing developers with graded assessments of the compatibility of their JS components with HubSpot's applications.

Research Fellow, **National Institutes of Health** Feb - Aug 2021 (gap year)

• McDonald Lab: Director of the Lister Hill Center and NIH Data Discovery Group

• Ideated & developed EasyPATH, a Python natural language processing library for FHIRPath, converting human-written expressions to FHIRPath, increasing accessibility of healthcare informatics resources across 100+ platforms for medical institutions across the US

• Utilized reinforcement learning (deep Q) on COVID-19 datasets to identify treatments

Research Intern, **NASA Jet Propulsion Laboratory** Jun - Aug 2020

• Goldsmith Lab: Director of the NASA Structure of the Universe Division

• Developed spect-fitter- a collection of Python scripts to resolve foreground absorption issues in NASA spectrometers aboard large telescopes using procedural model generation & gaussian fitting. Integrated into NASA spectroscopy data infrastructure.

• Modeled & predicted indicators of massive star formation, presented at JPL Symposium.

Founding Software Engineer, **Pakira** Jan 2020 - Jan 2021

• Founding full-stack engineer at Pakira, an online commodity trading platform to automate business-to-business transactions in lumber, steel, etc. Partnered with MIT professors and Harvard Innovation Labs

• Developed Pakira's initial full stack prototype and MVP0 in React and Node. Supported usage for 500+ businesses in beta.

Skills

Programming Languages
Python, JavaScript, TypeScript, HTML, CSS

Libraries & Frameworks
React, NextJS, Django, Flask, Material-UI, Tailwind, Pandas

Projects

Algae

Financial platform to provide free market predictions for selected popular stocks utilizing LSTM machine learning. Utilized Pandas, Numpy, Keras, and Polygon.io API.

SVM Visualizer

Machine learning exploration app that visualizes the decision boundary of algorithms (SVM, decision trees, etc.). Created in 48 hours for the Stanford TreeHacks Hackathon using Python's Dash interface framework. Top prizes for Best Use of Data Visualization and Most Sustainable Hack.

Hub Network

Fully functional social network to connect users across social media accounts through one platform. Created using Flask, JavaScript, and pure HTML/CSS.

aaronzsun.com

My personal website, accessible at aaronzsun.com. Made using React and includes libraries like Material-UI, Typed.js, and Three.js.