Jerry Huang

1.650.282.0353 | jerry.huang@alumni.duke.edu | jerryhuang12 | New York, NY

Research Vision

I am broadly interested in answering the following research questions on both fundamental and applied levels:

(1) How do we construct interpretable machine learning models?

(2) How can we ensure that models are trustworthy, reliable, and fair?

(3) How can we better leverage domain expertise when building real-world models?

Education

Duke University Durham, NC

B.S. in Computer Science with Minor in Statistics; GPA: 3.82/4.00 *Aug 2018 – May 2022*

Thesis: Generating Fingerprint Lineups using Fingerprint Matching Techniques

Research Experience

Duke Law School Durham, NC

Research Assistant *May 2021 – May 2022*

- Explored and implemented different machine learning and graph matching algorithms for fingerprint matching. Developed a software framework for generating fingerprint lineups.
- Completed undergraduate thesis "A Study on the Feasibility and Generation of Fingerprint Lineups for Forensic Science."
- Advisors: Prof. David Banks, Prof. Adele Quigley-McBride

Duke CS Department Durham, NC

Research Assistant *Jan 2020 – Dec 2020*

- Researched approaches of provably improving online algorithms for solving the Ski Rental Problem when given predictions about the input.
- Advisors: Prof. Debmalya Panigrahi

Ren Lab at UC Riverside Riverside, CA

Research Assistant *Aug 2016 – Sept 2017*

- Worked on a geographic load-balancing algorithm for optimizing the carbon and water footprints of data centers and implemented a discrete event simulation to validate its performance.
- Finished a technical paper titled "Minimizing Electricity Cost and Water Footprints for Geo-Distributed Interactive Services with Tail Latency Constraint."
- Advisors: Prof. Shaolei Ren

Industry Experience

Old Mission Capital New York, NY

Quantitative Trader *Aug 2022 – Aug 2023*

- Developed and improved new and existing systematic trading algorithms for market making domestic ETFs.
- Created tools and scripts in python for automating workflows and visualizing data/risk for the team and myself.
- Wrote APIs allowing for efficient and flexible retrieval of large data sets and data analysis job requests.

Vertex Protocol Remote

Software Engineer *Sept 2021 – May 2022*

- Designed and implemented state-of-the-art smart contracts, enabling users to stake crypto of foreign currencies.
- Developed modular and end-to-end test suites for decentralized limit order book exchange smart contracts.

Secureframe Sunnyvale, CA

Software Engineering Intern *Jan 2022 – April 2022*

- Implemented new searching and filtering features for the company's webapp (built on a Ruby on Rails tech stack).
- Handled customer and internal support tickets covering both front and backend bug fixes and code refactoring.

Optiver US LLC Chicago, IL

Quantitative Trading Intern *June 2021 – Aug 2021*

- Took a class on options and other derivatives. Traded index options through market making and position taking.
- Worked on improving machine learning models used for high-frequency futures trading on the Delta One desk.

Amazon.com Seattle, WA

Software Development Engineer Intern *May 2020 – July 2020*

- Designed, implemented, and tested Alexa Skills Kit command line interface (ASK CLI) commands, which are used by developers on the platform today for viewing the deployment history of their Alexa Skills.

Emailio (YC) Durham, NC

Software Engineer *April 2020 – Aug 2020*

- YC-backed startup focused on building email applications geared towards wellness and building healthy habits.
- Designed and implemented features including algorithms to analyze users' email habits, provide suggestions for email filtering rules, etc.

Teaching Experience

COMPSCI330: Design and Analysis of Algorithms Durham, NC

Undergraduate Teaching Assistant *Spring '20, Fall '20*

- Graded assignments and exams and held office hours. Topics from this class include design techniques (e.g. greedy algos, search algos, etc.), data structures, graph algorithms, optimization, large scale computing, and intractability.

COMPSCI230: Discrete Mathematics for Computer Science Durham, NC

Undergraduate Teaching Assistant *Spring '20, Spring '21*

- Graded assignments and exams and held office hours. Topics from this course include mathematical logic and proofs, set theory, discrete probability, number theory, mathematical induction, graph theory, etc.

Skills

Programming: Python, Java, SQL, Excel, C/C++, SML, R, MATLAB, Linux Shell
Frameworks/Libraries: Pandas, NumPy, sklearn, TensorFlow, PyTorch, FastAPI
Other: Git, macOS, LATEX
Spoken Languages: English (Native), Mandarin (Fluent)

Awards

Carnegie Hall Piano Performer

4-Time Pacific Swimming Annual Top-3 Times

3-Time American Invitational Mathematics Competition (AIME) Qualifier

USA Computing Olympiad (USACO) Gold Division

National Merit Scholarship Recipient