Mihir Joshi

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Education

Columbia University **Expected: May 2027**
B.S. in Computer Science, Major GPA: 3.9/4.0 (Dean's List) *New York, NY*

Work Experience

Quantitative Software Engineering Intern **June 2025 – August 2025**
Alta Fox Capital Management *Fort Worth, TX*

- Built and containerized a Python microservice that streams AXIOMA factor data via GS-Quant, cutting risk-calc latency 4× and freeing 1% ($5M) hedge capital.
- Designed and developed a penalty-weighted position sizing algorithm (NumPy/SciPy, gRPC) that cut portfolio risk by 30% while trimming CPU load 60%.
- Automated a GCP-native short-basket generator (Cloud Functions + BigQuery) that lowered portfolio beta 83% (0.12 → 0.02) and scales to 10k tickers in less than 200 ms.

Software Engineering Intern **February 2024 – August 2024**
reAlpha, Inc *New York, NY*

- Led and implemented Python/SQL ETL and Streamlit dashboards that cut M&A target-screen latency 10×, shortened deal cycle 35%, and drove 5 additional acquisitions.
- Developed k-NN recommendation engine (Python/scikit-learn) linking 25-question buyer profiles to 9,000 listings, raising inquiry click-through 38%.

Machine Learning Researcher **June 2018 – August 2024**
Oregon State University Socio-Environmental Analysis Lab *Corvallis, OR*

- Developed predictive models using Support Vector Machines and Random Forests to forecast the likelihood and seasonality of harmful algal blooms with up to 96% confidence; yielded Nash–Sutcliffe efficiency of 0.86.
- Awards: TEDx Speaker: Fish Out of Water: Predicting the Movement of Marine Protected Areas, Keynote Speaker at Institute of Continued Learning at Willamette University, 2022 Yale Young Global Scholar, Mu Alpha Theta Society Winner.

Co-Founder/CTO **June 2020 – August 2025**
Code With Me, LLC *Salem, OR*

- Founded and operated a coding education company teaching 300+ students how to code through virtual lessons involving Python, Scratch, and C, grossing $5,000 in its first year of operations.

Projects

(WIP) TradeLink: Networked Orderbook | *C++20, CMake, Linux Sockets API* | GitHub Repository **January 2025**

- Designed and implemented a basic orderbook matching engine capable of managing dynamic bid-ask prices and executing trades efficiently, tailored to financial market standards.
- Implemented a modular and extensible architecture, enabling support for additional order types (e.g., Good-Till-Cancel, Fill-Or-Kill) and customizable matching strategies for scalability

KernTune: Adaptive Tuning of Linux Scheduling Algorithms | *eBPF, C++, PyTorch, Linux, LinnOS* **August 2025**

- Conducting research on autotuning hyperparameters for kernel schedulers—CFS, Round-Robin, FIFO—and analyzing resulting latency on process systems in Dr. Kostis Kaffes' lab

Carousel: Round-Robin Scheduler | *Linux, C* **March 2025**

- Developed a basic Linux round-robin scheduler from scratch, managing task queues with fixed time slices and ensuring fair CPU rotation under multithreaded workloads

DiamondData | *Python, R, Pandas, RaspberryPi* **March 2022**

- Designed a low-latency 1080p video ingestion pipeline (Raspberry Pi 4 + FFmpeg + WebSocket/Flask) that streams on-field footage to analytics dashboards in 10s, turn eliminating manual data pulls during games.

Skills

Languages: Python, C/C++, Java, R *(Professionally Certified)*, MongoDB, SQL, Vimscript, Lua, VBA
Developer Tools: CMake, Vi(m), Spark, Golang, Docker, Flask, LaTeX
Technologies/Frameworks: Pandas, PyTorch, Polars, Linux/UNIX, Git, GitHub, JUnit, SKLearn, NumPy
Other Skills: CFO of Lion Fund Capital Management (student-run hedge fund at Columbia University), Poker, Speedcubing, Puzzle Solving, Chess, Bhangra, Cello