Ethan Havemann

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Education

Northwestern University Evanston, IL

B.S. in Computer Engineering *Expected June 2025*

- Minor in Mathematics; Residential Assistant ('22-'25); GPA: 3.85/4.00; Major GPA: 4.00/4.00.
- Relevant Coursework: Operating Systems, Distributed Systems, (Advanced) Computer Architecture, Compiler Construction, Computer Networks, Data Structures, Statistical Learning, Stochastic Processes

Experience

Optiver June 2024 – August 2024

Software Engineering Intern - High Frequency Trading Execution *Austin, TX*

- Rebuilt simulation environment for new auto-trader in C++, replaying all data feeds and supporting systems.
- Designed and implemented tooling to allow simulation without requiring quantity limited FPGAs, while maintaining competitive accuracy with production environment and improved visibility into trading state.
- Designed and implemented out of band latency analysis tooling to enable reproducible, consistent, and accurate performance profiling and optimization.

Amazon Web Services (AWS) June 2023 – August 2023

Software Engineering Intern – People Screening *Seattle, WA*

- Designed and implemented fully automated screening and case lifecycle management pipeline using Java and AWS.
- Built novel system consuming JSON to dynamically create business rules, configured to consume from a prebaked UI for non-technical consumers. Worked extensively with other teams to resolve blockers and interteam issues.
- Automated case maintenance actions within the US, removing over 10,000 human interventions per month.

Amazon September 2022 – December 2022

Software Engineering Intern – Advertising Data Compute Orchestration Team *Boulder, CO*

- Refactored existing job runner to allow reporting of metrics as well and make design more extensible, develop automatic monitoring microservice for internal EMR fork, surfacing metrics for 250M+ daily spark jobs.
- Worked extensively with Java, AWS EMR, Lambda, SNS, EC2, and DynamoDB to make team's product more lightweight, implemented prototype release pipeline to make adoption orders of magnitude cheaper and faster.

Acorn Genetics – Genetic Testing Startup May 2022 – September 2022

Software Engineer Intern *Evanston, IL*

- Lead on Acorn's SANDY genetic processing library (Python), maintaining feature parity to industry leader.

Northwestern University September 2023 – Present

Teaching Assistant, Guest Lecturer *Evanston, IL*

- Undergraduate Teaching Assistant for Computer Science 213 - Intro Computer Systems (Fall 2023, Winter, Spring 2024), and Industrial Engineering 304 - Statistical Learning (Winter 2024).

Projects

Northwestern Financial Technologies Club | *Founder and President* January 2022 – Present

- Steer technical and programmatic direction of organization, giving lectures on various relevant topics, overseeing development projects, and providing mentorship and advice for 30+ student developers.
- Conceptualized and assisted with infrastructure design and case direction on the Northwestern Trading Contest.

Walkway - EE/CS 499 | *Independent Study* March 2022 - Present

- Graduate Study advised by Professors Ilya Mikhelson and Zhaoran Wang on applied RL in Crypto Futures.
- Built in-house research platform, data pipelines, cloud agnostic deployment code, and feature extraction engines.

Honors and Awards

2023 UChicago Trading Contest | *Team Lead, 3rd Place Market Making, 5th Place Portfolio Optimization*

Technical Skills

Programming Languages: Python, C++, Go, Java, R, Verilog, Typescript, C, Bash, LaTeX
Technologies: UNIX (RHEL/Rocky, Ubuntu), Cloud Infrastructure, APIs, Concurrency, Data Systems
Developer Tools: Git, GitHub + Actions, SSH, Terraform, Ansible, Cloud Platforms, Valgrind, (Neo)Vim, TMUX