

STEVEN EWALD

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PROFESSIONAL EXPERIENCE

Citadel Securities

Software Engineer

September 2025 – Present

New York City, NY

- Low latency execution (networking, FPGAs, etc)

IMC Trading

Software Engineer Intern

June 2024 – August 2024

Chicago, IL

- Redesigned autotrader communication to use **UDP** (versus prior TCP) for substantially lower quoting latencies.
- Utilized Solarflare's `ef_vi` with **kernel bypass** for direct access to sockets, achieving ultra-low network latencies.

Netflix

Software Engineer Intern

January 2024 – April 2024

Los Gatos, CA

- First ever off-cycle SWE intern at Netflix due to impactful **open source** contributions on Hollow specialty database.
- **Reduced existing compute costs by \$300,000+** via substantial optimization of hashing and indexing data structures.
- Developed distributed change-data-capture system for novel persistent store, handling **580k+ requests/day**.
- Engineered a failover capable zero-downtime national deployment system for production with Spinnaker integration.

Amazon

Software Engineer Intern

June 2023 – August 2023

Boston, MA

- Engineered a **layered RNN** model to convert raw sensor data into precise distance metrics, significantly boosting accuracy.
- Architected an ML-driven auto-calibration system for embedded system sensors using **PyTorch** and Autogluon.

RasLabs

Software Engineer Intern

January 2022 – July 2022

Chicago, IL

- Developed Java web-enabled plugin for UR E-series robots for workflow optimization, **deployed at five F500 companies**.
- Boosted overall intra-network transfer speeds by **47%** via optimization of robots' application-layer communication protocol.
- Significantly decreased robot-controller latency by **98%** through implementation of Modbus protocols via Assembly and C.

EDUCATION

Northwestern University, Evanston, IL

B.S. in Computer Science, Concentration in Computer Hardware and Architecture

September 2021 – June 2025

GPA 3.9/4.0

- Undergrad TA for Operating Systems

RESEARCH

Prescience Lab

Research Assistant

March 2023 – April 2025

Evanston, IL

- Investigating IEEE floating point attack vectors and interactions with chaos theory to boost system and simulation security.
- Innovated an approach to utilize low-level mechanics for ultra-fast reverse simulations, **surpassing all existing strategies**.
- Coordinated and successfully led **HPC** implementation and testing via **CUDA** and **OpenMP**.

Northwestern University Financial Technologies

Technical Lead of Infrastructure

Dec 2022 – June 2025

Evanston, IL

- Led a **team of 10** to develop trade execution, backtesting, and server infrastructure for containerized algorithms.
- Utilized **Docker**, scripting, and **Apache Nginx** to execute, modify, and track algorithms in a backtester.

PROJECTS

Algorithmic Trading Competition Creator – Northwestern Trading Competition

August 2023 – June 2025

- Created a **low-latency C++** and Python-based equities exchange, optimized performance for sub-ms cycles with 500+ traders.
- Implemented inter-process messaging using **Unix Pipes** and **Redis**, and leveraged **Pybind** for C++-Python interactions.
- Deployed a Dockerized algorithm analyzer on **Google Cloud Run** for automated analysis, ensuring performance consistency.

Apache Kafka Clone – CASCADE

April 2023 – June 2023

- Directed team of five to create a Rust-based distributed real-time data streaming service, maximizing throughput and scaling.
- Implemented concurrency, data partitioning, and sharding for **tens of thousands** of concurrent streaming nodes.
- Used **Kubernetes** and **gRPC** for distributed, fault-tolerant data management, improving reliability and reducing downtime.

HACKATHONS

1st and 2nd Place Winner - WildHacks

May 2022, April 2023

Best Executed Project - BadHacks

February 2023

TECHNICAL SKILLS

Tools: Git, Docker, Kubernetes, Vim, AWS, GCP, Node, React, Express, gRPC, PostgreSQL, NPM, Linux, Nginx

Technologies: Backend Systems/APIs, Distributed Systems, Cloud Infrastructure, Web Development, Machine Learning, Robotics

Languages: Java, C++, C, Verilog, Go, SQL, Python, Javascript, CUDA, .NET, Typescript, Protobuf, Rust, C#, Assembly, HTML