STEVEN EWALD

me@steve.ee • github.com/stevenewald • linkedin.com/in/steven-ewald • https://steve.ee

EDUCATION

Northwestern University, Evanston, IL **June 2025**
B.S. in Computer Science GPA 3.9/4.0

- Relevant Coursework: Data Structures and Algorithms, Computer Networking, Operating Systems, Cloud Infrastructure
- Undergrad TA for Operating Systems

PROFESSIONAL EXPERIENCE

Citadel Securities **September 2025**
Incoming Software Engineer – Low Latency *New York City, NY*

IMC Trading **June 2024 – August 2024**
Software Engineer Intern – Equity Options Execution *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 **January 2024 – April 2024**
Software Engineer Intern *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 **June 2023 – August 2023**
Software Engineer Intern *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 **January 2022 – July 2022**
Software Engineer Intern *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.

RESEARCH

Prescience Lab **March 2023 – Present**
Research Assistant *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 **Dec 2022 – Present**
Technical Lead of Infrastructure *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 – Present**

- 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