

# ETHAN STERLING

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## EDUCATION

### Northwestern University

Evanston, IL

*Master of Science in Computer Science and Bachelor of Arts in Economics, Minor in Data Science* September 2022 – June 2026  
Cumulative GPA: **3.97/4.00** | Seeking Honors in Economics | Dean's List | Innovation Fellowship | Accelerated Math Program  
Teaching Experience: Undergraduate Teaching Assistant for COMP SCI 213: Introduction to Computer Systems  
Coursework: Kernel & Low Level Software Development, Operating Systems, Networking, System Security, Programming Languages, Data Structures & Algorithms, Mechanism Design, Linear Algebra, Econometrics, Machine Learning

## TECHNICAL SKILLS

**Programming languages:** Python, C, C++, Java, JavaScript, SQL, STATA, Swift, C#, R, Assembly, LISP

**Software and technologies:** Git, Unix shell, GDB, Valgrind, Docker, LLVM, Pandas, NumPy, Matplotlib, AWS, PostgreSQL, scikit-learn, TensorFlow, Jupyter, Spring Boot, Jenkins, Terraform, Mockito, GitLab, Vim, React, Angular, Hibernate, H2

## RELEVANT EXPERIENCE

### Federal Reserve Bank of Chicago

Chicago, IL

*Software Engineering Intern*

June 2024 – August 2024, June 2025 – August 2025

- Implemented high-availability disaster recovery solution on AWS using Terraform to deploy multi-region application on ECS Fargate, enabling automated, health-check-driven failover managed by Route 53, Lambda, and CloudWatch
- Created dynamic Spring Batch pipeline for high-performance, parallel data migration from Oracle to PostgreSQL
- Engineered self-healing DevSecOps pipeline with GitLab CI to automate OSS dependency updates in Spring/Angular
- Architected critical RESTful APIs using Spring Boot to replace database links, aiding cloud migration effort
- Leveraged Docker, Terraform, Mockito unit tests, and built GitLab CI/CD pipelines for deployment and scalability
- Maintained FedLine Solutions, securing payment services for 100,000 users, moving 5 trillion dollars daily

### Mayfest Productions

Evanston, IL

*Co-Chair, Executive Producer (June 2024 – May 2025), Producer (November 2023 – June 2024)*

June 2025 – Present

- Oversee all festival operations, coordinating 10 committees and managing a \$550,000 budget for over 12,000 attendees
- Collaborate with University administration on safety, security, compliance, and campus partner communication
- Advise committees on legal, contractual, marketing, and booking decisions to ensure continued event success
- Execute contracts and collaborate with 16+ artist teams and vendors to fulfill technical and hospitality needs

### Fulminare Holdings

San Diego, CA

*Software Engineering Intern*

June 2023 – September 2023

- Wrote programs in Swift for data imports from other apps to improve user transitions to poker bankroll tracker
- Marketed app by creating Twitter bot using OpenAI API to post daily threads increasing app users by 8,000+

## PROJECTS

### The Buoyancy Project (FPVM)

Evanston, IL

*Research Contributor*

January 2025 – Present

- Design and implement a Just-in-Time (JIT) compiler in C and x86-64 assembly to translate an architecture-independent Floating-point Intermediate Representation (FIR) into native machine code, matching performance of original architecture-specific emulator while eliminating overhead of bytecode interpretation
- Enhance VM instruction set with x86 comparison, precisely manipulating EFLAGS for complex conditional logic
- Define architectural roadmap for 256-bit AVX vector instruction support to enhance parallel processing capabilities

### Prescience Lab (DMPL)

Evanston, IL

*Research Assistant*

April 2024 – September 2024

- Scaled functional programming language MaPLE to a distributed memory environment using MPI and C
- Developed efficient parallel garbage collection for MPL, scaling to hundreds of cores and 1TB+ heap sizes
- Optimized whole-program compilation with MLton for performance competitive with C/C++

## INTERESTS & ACTIVITIES

**Clubs:** Track Club (Events Chair), Northwestern Capital Management, Alpha Epsilon Pi, Undergraduate Economics Society

**Hobbies:** Music production, DJing, Skiing, Scuba diving, Running, Weightlifting, Reading, Video games, 16-inch softball