Conner Rose

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Education

University of Michigan, *Ann Arbor, MI* **August 2022 - May 2026**

B.S.E. and M.S.E. in Computer Science (with a lot of math for fun) *GPA: 3.75/4.0*

- **CS Coursework**: Data Structures and Algorithms, Discrete Math, Machine Learning, Computer Organization, Computation Theory, Web Systems, Advanced Operating Systems, Formal Verification of Systems Software, System Design of a Search Engine, Distributed Systems
- **Mathematics Coursework**: Calculus I-IV, Linear Algebra, Combinatorics and Graph Theory, Probability, Real Analysis, Graduate Probability Theory, Advanced Linear Algebra, Discrete State Stochastic Processes, Graduate Topology
- **Involvement**: Traders at Michigan Head of SWE, Michigan Running Club, Poker Club

Experience

IMC Trading, *Chicago, IL* **June – August 2025**

Incoming Software Engineering Intern

Bloomberg L.P., *New York, NY* **June – August 2024**

Software Engineering Intern – Enterprise Data, Index Core Data

- Designed and implemented dependency resolution and automated testing tool using **Python**, used by team of **80 engineers**, reducing turnaround time when modifying bond formulas in distributed calculation engine by 80%
- Expanded testing coverage from single-field to **end-to-end**, identifying existing bugs in calculation pipeline, and preventing bugs from being introduced that would not have been identified previously, resulting in more **robust system**

Bloomberg L.P., *New York, NY* **May – August 2023**

CTO Office Intern – Compute Architecture and OSPO

- Designed automated access revocation system using **Python** and **LDAP**, deployed to **Docker**-containerized **Jenkins Pipeline**, ensuring appropriate removal of inactive accounts from Bloomberg's open-source GitHub repositories
- Developed GitHub crawler using **Python** to audit all projects contributed to by Bloomberg employees over 10 years, automating contribution cataloging and open-source license compliance verification, increasing audited projects by **3x**

Projects

Search Engine **January - April 2025**

C++20, Networks, Distributed Systems

- Implemented highly-compressed, on-disk reverse word index used to store **500M pages'** data at 3KB of data per page
- Built distributed web crawler capable of indexing 600 pages per second per machine, deployed on 18 machines

Omakase (Trading Game) **March 2025**

C++20, TypeScript, React, WebSockets

- Developed real-time ETF trading game, played at UMich Trading Competition by **120 players concurrently**
- Implemented high-performance matching engine in **C++**, achieving average order processing time of **75ns**, with **WebSocket**-based communication protocol to support high trading volume, avoiding continuous polling
- Utilized **state machine replication** to ensure consistent state resulting from potential backend crashes and reboots

Network File Server **December 2024**

C++20, Boost, Multithreading, Socket Programming, File Systems

- Designed and implemented **highly-concurrent** network file system in modern **C++**, using **Boost** upgradeable reader-writer locks for increased concurrency, while guaranteeing disk consistency in the event of crashes

Operating System Kernel, *C++20* **October - November 2024**

- Implemented thread-safe **virtual memory manager** in **C++**, capable of servicing concurrent mmap requests
- Wrote threading library in **C++**, supporting mutexes, condition variables, and scheduling on multi-CPU systems

Competitions

University of Michigan Collegiate Poker Tournament **October 2024**

- Placed 4th of 108 students from universities across the country, securing $500 in prize money (played well, ran hot)

IMC Prosperity 2, *Python* **April 2024**

- Utilized ETF arbitrage, pairs trading, game theory simulations, and other strategies to place 53rd of 9,140 (**top 0.58%**)

Technical Skills

Languages: C++, Python, Go, JavaScript/TypeScript, HTML/CSS, SQL, LaTeX

Tools: Linux, Git, Docker, Jenkins, Django, React, PostgreSQL, MongoDB, Pandas, NumPy, (Neo)Vim, Tmux