

Education

Honors Bachelors of Science in Computer Science, The University of Texas at Dallas, 2017 - 2020
GPA 3.96 / 4.0

Professional Experience

Citadel Global Quantitative Strategies (GQS)

Quantitative Research Engineer (Execution Team), March 2025 – September 2025

- **Note:** I left this role with offers in hand shortly after realizing the opportunity was not a good fit.
- Built structured DB pipelines to analyze unsent order flow patterns
- Introducing and improving testing practices, e.g. reducing unit test and integration test latency by 8 mins
- Scoped out and removed redundant components as part of a larger execution framework migration
- Reduced tick-to-trade latencies by removing critical sections with hardware-specialized lock-free algorithms
- Reduced hotpath allocation cost by introducing a user-space memory allocator model (e.g. object pools)
- Introduced C++20 coding concepts (simplified SFINAE, ranges, consteval features) into the core library
- Proposed and investigated architectural improvements enabling quicker feature iteration

Old Mission Capital

C++ Software Engineer (Options Desk), April 2022 - Feb 2025

- Relevant skills: C++20, market data processing, order entry, lock-free programming, systems architecture, performance profiling, networking, x86 asm, x86 SIMD (SSE, AVX, AVX512)
- Partnered with QRs to engineer algos for taking, quoting, and responding to auctions with PnL impact.
- Increased fill rates 2x by cutting p50/p90 software latency 50% through lock-free data structures and low-allocation code paths.
- Engineered low/no-allocation in-house STL data structure replacements, e.g. heaps and vectors.
- Wrote high-performance marketdata parsers, order entry, and algos for Nasdaq-family options exchanges.
- Designed high-fidelity exchange simulators (e.g., CBOE) for back-testing and parameter search.
- Microstructure research on Nasdaq-family exchanges, e.g. PHLX, XISX for taking signals
- Exploited undocumented Skylake-family cache coherence behavior to obviate explicit pub-sub thread sync

Waymo

Software Engineer, June 2020 - March 2022

- Saved \$10 million by creating a distributed cache (c++, various dbs) to save and reuse vehicle perception data.
- Scaled cache service to support 2 billion simulations, unlocking new training workflows. The cache enabled model performance evaluation at previously unreachable scales by increasing system throughput.
- Reduced simulation scheduling times by 80% and e2e job latency times by 50% at comparable sim quality.

Amazon Web Services

SDE Intern, May 2019 - August 2019

- Added full-text search filtering to AWS Groups web UI.
- Wrote a design doc and presented to the wider AWS org.

Intel

SDE Intern, June 2018 – May 2019

- Reduced camera placement optimization program runtimes by 400x after migrating Python application to C++11 (~200s to .5).