Brennan Davenport

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Education

University of Georgia — Athens, GA
B.S. in Computer Science & B.S. in Mathematics, GPA 3.7/4.0 — *Expected Graduation: May 2027*

Technical Skills

Coursework: Algorithms, Data Structures, Computer Architecure, Discrete Math, Database Management
Languages/Frameworks: Python, C++, Java, JavaScript, React, Pandas, PyTorch, Django, Spring Boot, .NET
Developer Tools: Git, Github Actions (CI/CD), Linux, CMake, Docker, Postman, Azure, Google Cloud Platform

Experience

Incoming Software Engineer Intern — May 2026 – August 2026
Apple — *Santa Clara, CA*

- Incoming intern on the Applied Machine Learning (AML) team within Information Systems & Technology (IS&T)

Software Engineer Intern — May 2025 – August 2025
Western Alliance Bank — *Dallas, TX*

- Migrated FOREX trading services from Finzly to ION, achieving sub-100ms latency, 99.9% availability, and full regulatory compliance to support high-volume financial transactions and real-time data
- Identified bottlenecks in reading JSON files in Azure and built a scalable SQL Server database with a C# API pipeline processing 10,000+ records/month, eliminating delays and accelerating team throughput
- Standardized backend development by designing a CLEAN-architecture server template, adopted as the microservice framework for 14+ new internal banking services

Software Engineer Intern — June 2024 – September 2024
Category Creations — *Athens, GA*

- Developed a scalable routing solution using Google Cloud Platform to optimize routes for over 300 stores
- Increased routing accuracy by 20% through integration of K-nearest neighbor, two-opt, and three-opt algorithms
- Created a fully automated system that routes new store addresses instantly, handling all geocoding, distance math, and optimization; eliminating manual input and saving 50+ hours per month

Projects

Market Exchange [Github] | *C++, CMake, Ninja, Concurrency* — December 2025

- Engineered a distributed market exchange backend in C++20 using TCP sockets for inbound order flow and UDP with TCP retransmission for outbound confirmations, containerized with Docker and orchestrated via CMake.
- Achieved 100,000 orders/sec throughput via lock-free concurrent queues, per-symbol ring-buffer pipelines, and multi-threaded matching engines optimized for low-latency order matching and trade reporting

ML Bermuda Pricer [Github] | *Python, PyTorch, Streamlit* — March 2025

- Developed DeepBermuda, a neural network-augmented Longstaff-Schwartz Monte Carlo (LSM) algorithm for pricing Bermudan, American, and European options, targeting complex multi-asset OTC derivatives
- Replaced traditional poly regression with a FNN to better approximate continuation values in high-dim options
- Benchmarked pricing accuracy against standard LSM using mean squared error and performance across varying volatility, moneyness, and dimensions (1D-10D)

Leadership & Organizations

Traders@UGA [Link] | *Founder & President* — December 2024 – Present

- Founded and led a quantitative trading club, managing 250+ applicants with a selective 5% acceptance rate, and guided members to placements at Jane Street, Two Sigma, Barclays, Amazon, Mathworks, and BlackRock.
- Led weekly meetings, hosting information sessions, trading games, technical projects, and mock interviews

ICPC@UGA | *Member* — August 2024 – Present

- Placed 4th in ICPC North American Southeast Division 2025 - Division 1
- Placed 10th in ICPC North American Regional Qualifier 2025 - Division 1

Honors & Activities | Corsair Society, Eagle Scout, Resident Assistant, Dean's/President's List (4x), ChessDawgs
Trading Competitions | Georgia Tech, UMich (5th Jane Street, 5th Citadel, 9th Optiver), MathDash (Finalist)