Derek Curry

Founder — Software Engineer — Cloud, AI, & Financial Systems Architect — Mathematics Enthusiast

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Experience

Stock Traders Daily Canada – Founder & Technical Architect *October 2024*

Java (Spring), C# (.NET), Angular, Docker, AWS, AWS Bedrock, Microservices, DNS, System Design

- Architected and launched Stock Traders Daily Canada as a scalable, multi-tenant cloud platform running on AWS using Spring, .NET, Docker, and microservices, providing real-time updates for 1700 Canadian stocks.
- Created a Retrieval-Augmented Generation (RAG) system for generating macroeconomic reports.
- Utilized embeddings, AWS Bedrock, and Microsoft Semantic Kernel with cutting-edge experimental features to extract insights from financial data sources.
- Led a designer and developer to meet tight deadlines and deliver under high-pressure conditions
- Refined stakeholder communication by working closely with the CEO to extract complex requirements, clarify objectives, and ensure alignment with high-level business goals

Stock Traders Daily – Software Developer *August 2024 - October 2024*

PHP, Python, DNS, Puppeteer, XML

- Repaired StockTradersDaily.com (500k monthly traffic) from critical server failure; Debugged PHP 5.6 code, optimized databases, and resolved DNS and Linux networking issues. Coordinated directly with hosting providers to resolve critical issues
- Rewrote a PDF generator for 7,000 stock reports, reducing processing time from 5 seconds to 0.5 seconds per report. Leveraged multiprocessing for an overall 40x speedup. Reports delivered to Interactive Brokers, Reuters, and Zacks Investment Research.
- Improved a chart generator for 7,000 stock charts, reducing runtime from 20 minutes to 5 minutes using Puppeteer and Puppeteer Cluster for efficient concurrent rendering.
- Redesigned financial XML structures and created production workflows to support future scalability and efficiency. Learned in real-time why software development concepts (polymorphism, decoupling, and encapsulation) and patterns are necessary

Codecademy – Content Contributor *April 2024 – November 2024*

Go, Web Development, Pedagogy, Technical Writing Remote

- Formulated interactive lessons and quizzes to enhance learning retention
- Synthesized complex Go and web development concepts into accessible lessons to enhance learning for professionals
- Integrated inheritance and polymorphic practices into educational materials to create industry-ready engineers.

HCL Technology – Software Engineer Intern *May 2023 – May 2024*

Go, Echo, Kubernetes, GCP, Docker, PostgreSQL, API Cary, NC

- Developed a service for Kubernetes cluster usage across environments to reduce overhead, using Prometheus, Docker, and GCP, alongside another intern
- Designed and developed a production API for creating managed CloudSQL Instances with configurable automated backups
- Planned and created a CustomAgents production API for Kubernetes cluster Helm dependencies

Education

North Carolina State University – *August 2021 – May 2025*

Bachelor of Science in Computer Science, Bachelor of Science in Mathematics Raleigh, NC

- Major GPA: 4.0
- Cumulative GPA: 3.93
- Dean's List
- Accelerated Master's in Computer Science starting Fall 2025

Projects

Heat Equation Visualization | *C++, OpenMP, OpenGL, Eigen, Linear Algebra* March 2024 – April 2024

- Built an interactive heat transfer simulator using C++ and OpenMP for a fast, multi-threaded application
- Applied advanced numerical methods, including FEM and AMG, for 99% decreased solving time
- Implemented design patterns such as MVC, Pub/Sub, and Thread Pool for a maintainable and scalable system
- Devised a Pub/Sub system to decouple UI and logic for asynchronous, low-latency, event-driven updates. The result was a system with low enough latency to be considered a drawing simulator.

Extracurricular

Tesla Rebuild June 2022 – June 2023

- Rebuilt a crashed Tesla Model 3 by disassembling the entire vehicle and replacing all damaged components.
- Resolved all body, mechanical, electrical, and software issues independently using limited tools and resources.
- Gained comprehensive knowledge of Tesla systems and EV design through troubleshooting and system analysis.
- Initiated exploration of reverse engineering the vehicle's computer systems to understand subsystem integration.