Tyler J. McClelland

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SUMMARY

High-achieving Computer Science Junior with a focus on high-performance systems, hardware-software integration, and AI/ML. Seeking a software engineering internship to apply my technical skills and deepen my understanding of engineering.

EDUCATION

B.S. Computer Science May 2027
Arizona State University, Tempe, AZ 3.8 GPA
Relevant Coursework: Data Structures and Algorithms, Introduction to Software Engineering, Information Assurance, Applied Linear Algebra, Calculus III, University Physics I/II

Coursework toward A.S. Computer Science August 2023 - Dec 2024
Chandler/Gilbert Community College, Chandler, AZ (transfer to Arizona State University) 3.96 GPA

TECHNICAL SKILLS

Programming Languages: C/C++, Python, Java, MATLAB, HTML, CSS, React
Core Concepts: Data Structures & Algorithms, Memory Management, Object-Oriented Design (OOP), System Architecture
Tools, Databases, and OS: Pandas, Git, GitHub, Windows, MacOS, Linux/Unix, FastAPI, OpenAI API

PROJECTS

FPGA Flight Simulator, *Class Project* Fall 2024

- Designed and implemented a flight simulator on an **Altera DE-10 Lite FPGA** using Verilog. Wrote and tested logic in Verilog to accurately simulate flight dynamics.
- Created the system architecture in **LogicWorks**, modeling flight behavior with a finite state machine
- Delivered a fully functioning design that demonstrated **hardware-software integration** for control systems

Flight Data Management System, *Class Project* Fall 2025

- **Engineered** a high-performance data management system in C++ using a **Red-Black Tree to guarantee O(log n)** execution time for flight scheduling operations (insert, delete, search).
- Optimized retrieval speeds by building a custom Hash Table with collision chaining, reducing **average** lookup time to **O(1)**.
- **Developed** a network routing module using Dijkstra's Algorithm and a custom Min-Priority Queue to **calculate optimal paths** between cities.

Autonomous Robot Navigation System, *Class Project* Spring 2025

- Designed the robot chassis and wrote all control logic in MATLAB, integrating **one ultrasonic**, **one color**, and **one touch** sensor to navigate maze environments
- Led a 4-person team as project manager, establishing milestones and communication cadences that delivered the final system **2 weeks ahead of schedule**
- Maintained the GitHub repository, coordinating pull requests, ensuring accurate version control, and branching to ensure **zero critical integration issues** and full traceability of changes

Algorithmic Trading System, *Personal Project* Fall 2024

- Developed a Python based trading bot using **Pandas and CCXT** to execute an RSI and SMA crossover-based strategy
- Tested model viability using historical data by engineering a back-testing engine using Binance Testnet API
- Automated risk-management, **limiting losses to 1.5%** of a position size for every 4.5% in potential profit by implementing a stop-loss algorithm to sell a position when the 1.5% threshold is met

Awards

Dean's List - Spring 2025, Fall 2025 May 2025 – December 2025

- Awarded the Dean's List award from the Ira A. Fulton School of Engineering at ASU for each semester attended

President's Honors List - Fall 2023, Spring 2024, Fall 2024 August 2023 – August 2024

- Awarded the President's Honors List award for each semester I attended Chandler Gilbert Community College