Arsh Dauwa

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EDUCATION

The University of Texas at Austin **May 2025**

Bachelor of Science in Computational Engineering

Certificate in Elements of Computing & Computational Science and Engineering

Relevant Coursework: Data Structures and Algorithms, Software Design and Implementation I, Data Science Principles, Computer and Software Architecture, Operating Systems, Scientific Computing

SKILLS

Programming Languages: Proficient in Python, C++/C, Java, MATLAB; Familiar with CSS, HTML, JavaScript, SQL
Certifications: JP Morgan Chase Software Engineering Virtual Experience Program - August 2023, Lyft Back-End Engineering Virtual Experience Program - August 2023, Oracle MySQL Explorer, Microsoft (Word, PowerPoint, Excel)
Technologies/Operating Systems: Git, Docker, Flask, APIs, Visual Studio, React.js, Node.js, Linux, MacOS
Spoken Languages: Fluent in English, Hindi, and Gujarati; Basic knowledge in Spanish and American Sign Language (ASL)
Work Eligibility: Eligible to work in the U.S. with no restrictions.

EXPERIENCE

5Star Opportunities **May - August 2022**

Sugar Land, Texas | Software Engineering Intern

- Constructed RESTful APIs using **Flask** and **Python**, facilitating communication between front and back-end systems.
- Developed database schema using **SQL**, reducing query response time by 30% and improving overall system performance.
- Implemented user authentication using **JWT** (JSON Web Tokens), enhancing the application's security and user data privacy.
- Wrote unit tests using frameworks like **Pytest** and **Unittest**, achieved 85% code coverage, minimize regression occurrence.

PROJECTS

More Projects: github.com/ArshDauwa

Dynamic Memory Allocator | *C, Python, Perl, Shell* **| View Code**

- Redefined the **C** standard library's **malloc ()** and **free ()** functions, to improve decision-making for memory space allocation and enhancing the time efficiency to accurately allocate and deallocate free memory within the heap.
- Implemented a **linked list** structure to track free blocks of memory, a search algorithm to find the free block that closely fits the number of bytes requested from users malloc call, and an immediate merging to reduce external fragmentation in **heap.**
- Achieved an average of 1415.79 memory allocation and deallocation operations completed per millisecond, also showed improvements to the memory management system's efficiency and responsiveness by 20% compared to standard system.

AI Sign Language Interpreter | *Python, OpenCV, Google's Media Pipe* **| View Code**

- Applied **OpenCV** and **Media Pipe** for real-time hand tracking via computer vision technology, enabling robust applications.
- Utilized data points from various hand formations to accurately determine alphabet letters, achieving a recognition rate of over 90% in sign language to text conversion, making it highly effective in facilitating sign language communication.
- Created a user-friendly graphical interface to enhance the accessibility of the sign language translation system, providing an intuitive platform for users to communicate and interact with the application, resulting in 25% increase in user engagement.

Securities Trading Bot | *Python & QuantConnect* **| View Code**

- Developed a stock trading algorithm using **Python** on the QuantConnect platform that analyzes the previous highs of a selected instrument and generates a buy signal when the current price breaks out from its previously recorded high value.
- An algorithm that dynamically changes its look back length and makes use of a trailing stop loss to protect against losses.
- Outperformed the S&P 500 by 3% by utilizing **Quant Connects** API to back-test code with real trading options effectively.