

# 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, Swift, Snow, SQL

**Technologies/Operating Systems:** Git, Azure, Visual Studio, React.js, Node.js, Flask, Unix, MacOS

**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)

**Spoken Languages:** Fluent in English, Hindi, and Gujarati; Basic knowledge in Spanish.

**Work Eligibility:** Eligible to work in the U.S. with no restrictions.

## PROJECTS

### 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 increase the time efficiency to accurately allocate and free memory in 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, immediate merging to reduce external fragmentation in **heap**.
- Achieved an average of 1415.79 memory allocation and deallocation operations completed per millisecond, showed improvements to the memory management system's efficiency and responsiveness by 20% compared to standard system.

### Securities Trading Bot | Python & Quant Connect | [View Code](#)

- Developed a stock trading algorithm using **Python** on the Quant Connect platform that analyzes the past highs of a selected instrument and generates a buy signal when the price breaks out from its previous high.
- Algorithm dynamically changes its look back length, 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.

### 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 intricate 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.

## EXPERIENCE

### 5Star Opportunities

May - August 2022

Sugar Land, Texas | Software Engineering Intern

- Constructed RESTful APIs using **Node.js** and **Express**, 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 **Mocha** and **Chai**, achieved 85% code coverage, minimized occurrence of regressions.