

# Zander Barajas

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## EDUCATION

### San Diego State University

*Bachelor of Science in Computer Science. Applied with 3.74 GPA*

San Diego, CA

Aug. 2024 – 2026

### San Diego Mesa College

*Associate's Degree for Transfer in Computer Science. Graduated with honors*

San Diego, CA

Sept. 2021 – May 2024

## PROJECTS

### Powerlifting Meet Calculator | C/C++, CMake, ImGui, Vulkan, Google Test, Git September 2024 – Present

- Developed a cross-platform Powerlifting Meet Calculator with data sorting, JSON import/export, lifter management, and score calculations
- Built a smooth and responsive graphical user interface utilizing ImGui with Vulkan for rendering
- Implemented asynchronous task handling and thread management to offload intensive operations from the UI
- Designed a custom multithreaded sorting method that led to performance gains upwards of 750% for large datasets
- Configured a robust build system using CMake to facilitate dependency management and enable testing
- Deployed a GitHub workflow to automate building and testing on multiple platforms

### Library Management | C/C++, CMake, CLI, Git March 2024 – May 2024

- Developed a library management program that manages items and customers through CLI
- Different item types implemented through an object-oriented design with classes
- Patron waitlist effectively handled through a Queue data structure
- Smart pointers used to ensure effective memory management
- Regex used to determine if given date or ISBN is valid

### Max Floating Point | Assembly, C, MPLAB X, Git Nov 2023 – Nov 2023

- Implemented an ARM Assembly program that takes two IEEE 754 floating point inputs from C code
- Unpacks every bit and returns the larger of the floating point values according to the standard
- Code written, debugged, and programmed to a SAM E51 CURIOSITY NANO through MPLAB X IDE
- Connected to the Arm Cortex-M4 board through Tera Term and evaluated all test cases

### Personal Website | HTML, CSS, Bootstrap, Git May 2023 – Present

- Created my own website through HTML and CSS, utilizing the Bootstrap framework
- Made commits through Git and deployed through GitHub Pages
- Implemented a custom CSS stylesheet through the Sass preprocessor
- Features multiple functional pages and a Responsive Web Design

## TECHNICAL SKILLS

**Concepts:** Data Structures, Algorithms, Object-Oriented Programming, Asynchronous Programming, Multithreading, Computer Architecture, Embedded Systems, Problem Solving, Website Design, Video & Audio Encoding

**Languages/Frameworks:** C/C++, Python, Java, Assembly, JavaScript, HTML/CSS, Sass, Bootstrap

**Developer Tools:** Git, Docker, VS Code, Visual Studio, PyCharm, CLion, IntelliJ, Eclipse, Linux, Windows

**Libraries:** NumPy, Matplotlib, VapourSynth, Unittest, Beautiful Soup, ImGui, JSON (nlohmann), Google Test, Boost

## EXPERIENCE

### Technology Support Specialist/PC Technician

*Envision Engineering Inc*

May. 2023 – August. 2024

San Diego, CA

- Built and provided multiple computers to excel in named software like AutoCAD and ETABS
- Set up and maintained a network server using a Synology NAS device for more accessible project sharing
- Routinely updated programs and hardware, providing support when difficulties arose with current installations

### Courtesy Clerk

*Gelson's Markets*

June 2022 – January 2023

San Diego, CA

- Developed social skills and learned how to communicate with management
- Built customer service skills and attended to the needs of customers