Zander Barajas

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Education

San Diego State University Aug. 2024 – 2026
Bachelor of Science in Computer Science *GPA: 3.5*

San Diego Mesa College Sept. 2021 – May 2024
Associate's Degree for Transfer in Computer Science

Experience

Software Engineering Intern May. 2024 – August. 2025
Envision Engineering Inc *San Diego, CA*

- Built and deployed a full-stack application with Next.js, FastAPI, and PostgreSQL to help the team track project deliverables and revisions across engineering projects
- Created an internal dashboard using React, Tailwind CSS, and Chart.js to monitor the status of projects, saving the team hours of coordination each week
- Containerized with Docker, implemented CI/CD pipelines using GitHub Actions, and deployed to Vercel and Render for reliable access
- Developed Python automation scripts with pyautocad and the Revit API to streamline drawing cleanup, layer management, and batch exports, largely reducing manual drafting effort

Projects

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

- Developed a cross-platform 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 a custom multithreaded sorting method, improving performance by over 750% for large datasets
- Automated builds and testing on multiple platforms using CMake and GitHub Actions

Drone 2D Obstacle Avoidance | *Python, Gymnasium, PyGame, Stable-Baselines3, PPO* March 2025 – Present

- Worked together in a group of four to build a custom Gymnasium environment in PyGame for drone pathfinding and obstacle avoidance
- Trained PPO agent using Stable-Baselines3 with VecNormalize, Monitor, and evaluation callbacks
- Implemented modular scripts for training, evaluation, checkpointing, and TensorBoard logging
- Achieved up to 72% goal success rate across randomized layouts after 500k training steps

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

- Implemented an ARM Assembly program to unpack IEEE 754 floating point inputs from C code and compute the maximum value according to the standard
- Programmed and tested the solution on a SAM E51 Curiosity Nano using MPLAB X IDE and Tera Term, verifying correctness across all test cases

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

- Developed a responsive multipage website with Bootstrap and Sass
- Managed version control with Git and deployed the site through GitHub Pages

Technical Skills

Concepts: Data Structures & Algorithms, OOP, Concurrency, Computer Architecture, Embedded Systems, AI/ML, Full-Stack Development, RESTful API Design, CI/CD Pipelines, Cloud Deployment
Languages/Frameworks: C/C++, Python, Java, Rust, Assembly, JavaScript, TypeScript, HTML/CSS, Sass, Bootstrap, Next.js, FastAPI, PostgreSQL
Developer Tools: Git, Docker, VS Code, Visual Studio, PyCharm, CLion, IntelliJ, Eclipse, Linux, Windows, GitHub Actions, Vercel, Render
Libraries: PyTorch, NumPy, Gymnasium, Stable-Baselines3, Matplotlib, pandas, Unittest, Beautiful Soup, ImGui, Google Test, Boost, Tailwind CSS, Chart.js, pyautocad, Revit API