Benjamin Miller

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EDUCATION

Computer Science B.S. - University of California, San Diego (UCSD) Sept. 2023 – June 2027
GPA: 3.8/4.0, Jacobs School of Engineering, UC San Diego Scholar's Society
Regent Scholar (Merit-based scholarship awarded to UC undergraduates)

Relevant Coursework: Advanced Data Structures and Algorithms (**C++**), Software Engineering (**JavaScript, HTML, CSS**), Embedded Programming (**C, ARM Assembly**), Algorithm Design and Analysis, Software Tools and Techniques (**Linux, Shell Scripts**), Object Oriented Design (**Java**)

SKILLS

- Programming Languages: **Python, C/C++, Java, JavaScript, TypeScript, MATLAB, ARM Assembly**
- Operating Systems: **Linux**, **macOS**, **Windows**
- Web/App Development: **React**, **Node.js**, **CSS**, **HTML, Tailwind, Boot Strap, REST APIs, Vite, Express, jQuery, Hugo**
- Machine Learning: **PyTorch, NumPy, Computer Vision, Pandas**
- Other: **MongoDB, Git Version Control, Bash, CI/CD, Scrum/Agile**

EXPERIENCE

Software Engineering Intern, Western Digital Sep. 2025 - Present
- Improved firmware performance by implementing and debugging C++ features measured by reduced bug resolution time across sprints.
- Accelerated firmware testing workflows by building Python-based test tools for CI pipelines, measured by a 30% decrease in manual test cycles during QA validation.

Software Engineering Lead & President, Themed Entertainment Association at UCSD June. 2024 - Present
- Accomplished leadership of the organization's software development initiatives via Agile methodologies and collaborative sprints, as reflected by successful deployment of software based projects at on campus events and on-time project milestones.
- Organized and represented UCSD in national engineering team competitions, as evidenced by successful participation in events requiring interdisciplinary design and engineering skills, by coordinating team efforts and ensuring effective collaboration.

Software Developer Intern, Center for Applied Internet Data Analysis Apr. 2025 - August 2025
- Enhanced website usability by modifying and developing JavaScript and Python scripts, as demonstrated by streamlined content management and maintenance workflows, while using Git for version control in a large-scale team environment.
- Worked on the development and maintenance of a website receiving 2,000+ unique daily visitors by leveraging JavaScript and other web development tools, as shown by consistent site reliability.

Resident Advisor, COSMOS UCSD July 2024 - Aug. 2024
- Provided guidance and mentorship as a counselor for the Video Game Programming and Game AI Design group, as demonstrated by meaningful interactions and personalized advice to empower future engineers.

PROJECTS

Machine Learning Computer Vision Gesture Detection in Python May 2025 - Present
- Accomplished responsive gesture-controlled actuation on a Raspberry Pi AI camera, as measured by reliable physical component activation, by training and deploying customized machine learning models for real-time gesture detection in Python.

Multi-threaded File Compressor in C++ August 2025
- Created a multithreaded file compression application, as measured by improved compression time, by optimizing thread management and synchronization.

Grade Predictor Neural Network in Python July 2025
- Accomplished letter-grade prediction via a PyTorch feedforward neural network, as shown by accurate prediction of a student's target course grade based on past academic history and public course data such as professor rating.

Interactive Robotic Figure in C/C++ Dec. 2024
- Accomplished real-time voice-controlled motor actuation to simulate lifelike robotic mouth movements via optimized audio processing on a Raspberry Pi in C, as validated by precise synchronization between audio input and servo motion.