

# BENJAMIN MILLER

(925) 270-9677 | [bem002@ucsd.edu](mailto:bem002@ucsd.edu) | CA - Bay Area  
LinkedIn | GitHub | Portfolio Website

## EDUCATION

**Computer Science B.S.** - University of California, San Diego (UCSD)  
**GPA: 3.8/4.0**, Jacobs School of Engineering, UC San Diego Scholar's Society  
**Regent Scholar** (Merit-based, top 1.5% of class)

Sept. 2023 – June 2027

**Relevant Coursework:** Advanced Data Structures and Algorithms (**C++**), Software Engineering (**JavaScript, Web Development**), 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**
- App/Web Development: **React, Node.js, CSS, HTML, Tailwind, REST APIs, Vite, Express**
- Machine Learning: **NumPy, PyTorch, Pandas, Computer Vision**
- Tools & Frameworks: **MongoDB, Git Version Control, CI/CD, Agile/Scrum, Bash**
- Operating Systems: **Linux, macOS, Windows**

## EXPERIENCE

### Software Engineering Intern

*Western Digital*

Sept. 2025 - Present

*Irvine, CA*

- Designed and implemented **C++ APIs** for hard drives in an **Agile** development environment, validated through comprehensive unit and integration testing.
- Expanded and improved the **unit testing** suite resulting in increased overall **QA validation** quality of the **CI/CD pipeline** and higher quality code.

### Software Engineering Lead & VP

*Themed Entertainment Association at UCSD*

Jun. 2024 - Present

*La Jolla, CA*

- Led software development including launching the association's website (**JavaScript, CI/CD**) and themed attraction production software (**Python, C, C++**), enabling reliable themed attraction operations.
- Organized and represented UCSD in national engineering competitions, driving successful **interdisciplinary design** through team leadership and cross-functional collaboration.

### Software Development Intern

*Center for Applied Internet Data Analysis*

Apr. 2025 - Aug. 2025

*San Diego, CA*

- Enhanced maintainability and usability using **JavaScript** and **Python**, as demonstrated by successful contributions to the websites' codebase using **Git** for version control in large-scale site environments.
- Created useful automations using **Python** in a **Linux** environment resulting in a 75% decrease on average in manual labor required for workflows such as content updates across the center's project sites.

### Resident Advisor at COSMOS

*Jacobs School of Engineering*

Jul. 2024 - Aug. 2024

*La Jolla, CA*

- Provided mentorship for the Video Game Programming and AI Design group, as demonstrated by meaningful interactions and personalized advice to empower future engineers.

## PROJECTS

### Gesture Enabled Storytelling (G.E.S.T.)

*Python, AI/ML, Computer Vision, COCO Keypoints Dataset*

May 2025 - Present

[Project Page](#) | [Github](#)

- Deployed a real-time **computer vision** system on an **AI Accelerator Camera** by tuning inferencing in **Python** to enable low-latency, responsive gesture-control for an interactive storytelling attraction on campus.

### Multi-threaded File Compressor Application

*C++, Multi-Threading, MakeFile*

Aug. 2025

[Github](#)

- Created a high speed compressor in **C++** as measured by a 70% improvement in compression time over a traditional single-threaded approach, by optimizing thread management and synchronization of a **thread pool**.

### Taro The Talking Bird - Interactive Robotic Figure

*C/C++, Linux, Advanced Linux Sound Architecture (ALSA), Raspberry Pi*

Dec. 2024

[Demo video](#) | [Project Page](#) | [Github](#)

- Accomplished real-time audio-to-motion translation for a robotic figure, as measured by 100+ live conversation demos and **16K+ social media views**, by developing a **C** audio-to-motion pipeline to synchronize voice actor speech with robotic mouth movements, resulting in a lifelike performance.