Marcus Lo

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EDUCATION

University of California, Irvine *Expected Graduation: June 2027*
Bachelor of Science in Software Engineering
Relevant Coursework: Object-Oriented Programming, Data Structures & Algorithms, User Interaction Software, Human Computer Interaction, Intro to Python Learning Assistant, Computer Organization, Software Testing & Quality Assurance

EXPERIENCE

AIQUANTA *Aug 2025 - Sept 2025*
Software Engineering Intern
- Engineered Python-based autonomous drone control system for DJI Tello, enabling 3 dimensional stabilization and face tracking using PID and OpenCV AI to center and follow user's face automatically with <25ms delay
- Implemented swarm functionality, controlling several drones simultaneously with <50ms delay using a design that supports upward scalability
- Wrote documentation and procedures for connecting, configuring, and programming drones

AIphotonics *Aug 2023 - Sept 2023*
STEM Education Intern
- Led STEM robot kit development, creating content that was used by 150 high school students
- Wrote code and designed lesson plans that generated over $65,000 in revenue with minimal working costs
- Created documentation and instruction manuals, collaborated with coworkers and CEO on various software projects that built upon previous interns' work

PROJECTS & RESEARCH

Curtain Call Alarm Clock C++, Swift, Arduino, GitHub
- Engineered IoT alarm system integrating Swift iOS app with Arduino Nano hardware to automate curtain opening
- Developed method in Swift application to send bluetooth signal asynchronously to embedded platform
- Reduced power consumption by 90% using BLE in Arduino C++ integrated with HC-08 sensor

Touch Sensitive Electric Piano C++, Python, Arduino, GitHub
- Built real-time MIDI piano system in C++ and Python with Arduino-based touch sensors, integrating FluidSynth library for audio synthesis and custom serial communication protocol
- Implemented cross-platform MIDI input/output handling by connecting Arduino hardware via USB serial to Python and C++ applications, utilizing pyserial to enable robust sensor interfacing, MIDI event handling, and synthesized audio output

IEEE Young Engineers Conference
- Conducted independent research under mentorship to evaluate the efficacy of sound-based sleep induction technology
- Designed and executed experimental protocols, authored research paper, and presented findings at a conference demonstrating positive correlation between sound therapy and improved sleep outcomes

SKILLS

- **Programming Languages:** Python, C++, Java, SQL, HTML, CSS, Swift
- **Tools:** Git, GitHub, Jupyter Notebook, Microsoft Office, Figma, Photoshop, Arduino, RESTful API, gtest
- **Skills:** iOS development, Embedded Systems, Software Testing & Debugging, Agile methodology