

# Jonathan Kim

## Summer 2026 Intern - Embedded/Firmware Engineer

[Jonathankim829@gmail.com](mailto:Jonathankim829@gmail.com) | [Portfolio Page](#) | (909) 657-6129

### Education

#### Master of Science - Embedded Systems

University of California, Irvine

Sept. 2025 - Expected Dec. 2026

Irvine, California

Courses: Embedded System Modeling and Design, Internet of Things (IoT) Systems and Software

#### Bachelor of Science - Management Information Systems

Santa Clara University

Sept. 2018 - June 2022

Santa Clara, California

### Professional Experience

#### Embedded Software Engineer Contractor

Sept. 2025 - Present

Mirae Opus

Diamond Bar, California

- Designed an ESP32-based speech-to-text and text-to-speech device integrated with LLM APIs over Wi-Fi. Implemented I<sup>2</sup>S interfaces for the microphone, speaker, and amplifier, and I<sup>2</sup>C communication for a 9-axis IMU.
- Implemented FreeRTOS and used interrupts to create a scalable system for additional features.
- Applied DMA transfer and transmitted audio/IMU data to a local web server providing a real-time dashboard of system activity.
- Designed a 4-layer PCB board housing an ESP32 C6 WROOM module, USB-C port, speaker amplifier, battery management, impedance matching, and various ESD, hot-plug, and over-current protections.
- Worked in a Linux environment writing C/C++, not Arduino.

#### Full Stack Software Developer

Jan. 2023 - Oct. 2024

Leidos QTC Health Services

San Dimas, California

- Developed and maintained .NET enterprise applications vital to the business's core revenue stream, contributing to revenue growth from \$500 million to over \$1 billion annually. As a member of the team responsible for core user-facing applications, I ensured seamless functionality during this period of rapid expansion.
- Core applications facilitated appointment scheduling between medical providers and veterans worldwide. They also efficiently displayed relevant information and medical documents, many spanning thousands of pages.
- Developed a robust backend using C#, frontend in JavaScript/jQuery, enhancing user experience for scheduling medical appointments.
- Integrated a PDF compression service, significantly improving document processing speeds and resolving critical business bottlenecks.
- Developed 50% of the code for a feature that digitized labor-intensive medical paperwork, previously done manually. This improvement has enhanced the efficiency of care delivery for tens of thousands of veterans.

### Projects

#### STM32 Sentry Turret

April 2025

- Built a sentry turret that shoots Nerf bullets using a STM32, no HAL library, direct bit register configuration.
- Wrote and implement own drivers for PWM, UART, I2C, and interrupts without any libraries.
- Controlled turret through interrupt-based UART wireless keyboard commands.
- Modified Nerf gun, designed turret in Fusion 360, 3D-printed and assembled structure.

### Technologies & Languages

Technologies: UART, I2C, SPI, STM32, Linux, OpenCV, .NET, Entity Framework, JQuery, SSMS, Oracle.

Languages: C/C++, Python, C#, HTML/CSS, JavaScript, SQL.