

Jonathan Kim
Summer 2026 Intern - Embedded/Firmware Engineer
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Education

Master of Science - Embedded Systems University of California, Irvine Courses: Embedded System Modeling and Design, Internet of Things (IoT) Systems and Software	Sept. 2025 - Expected Dec. 2026 Irvine, California
Bachelor of Science - Management Information Systems Santa Clara University	Sept. 2018 - June 2022 Santa Clara, California

Professional Experience

Embedded Software Engineer Contractor Mirae Opus	Sept. 2025 - Present Diamond Bar, California
<ul style="list-style-type: none">Designed an ESP32-based speech-to-text and text-to-speech device integrated with LLM APIs over Wi-Fi. Implemented I²S interfaces for the microphone, speaker, and amplifier, and I²C 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 Leidos QTC Health Services	Jan. 2023 - Oct. 2024 San Dimas, California
<ul style="list-style-type: none">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
<ul style="list-style-type: none">Built a sentry turret that shoots Nerf bullets using a STM32, no HAL library, direct bit register configuration.Wrote and implemented 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.