

Jake Kim, Embedded Software Engineer

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LINKS

www.linkedin.com/in/jake-fetiu-kim, www.instagram.com/tangelinedisplay, github.com/fetiu

PROFILE

Embedded Software Engineer with 5+ years of experience, who is always eager to make better software designs and quality products. Adept at translating complex requirements into efficient and robust firmware solutions. Passionate about incorporating Agile development methodologies for optimal project execution.

WORK EXPERIENCE

Nov 2022 — Dec 2023

Senior Firmware Engineer, Awair

Seoul, South Korea

- Played a key role in the development of 'AwairNet', an IoT sensor network solution, spearheading platform-agnostic firmware update features and enhancing 6LoWPAN, DTLS, and CoAP connection stability.
- Integrated TI SimpleLink OAD feature seamlessly with LwM2M protocol, showcasing expertise in Bootloader, Linker Script, and Binary File Format manipulations.
- Resolved communication issues between IoT devices and the cloud involving Ethernet, PPP, DNS, NAPT, and TLS, demonstrating comprehensive knowledge of networking protocols across multiple OSI layers.
- Mentored Junior Firmware Engineers and Interns, contributing to successful onboarding and team productivity.

Sep 2019 — Oct 2022

Firmware Engineer, Awair

Seoul, South Korea

- Played a key role in development of the new product 'Awair Element', demonstrating expertise in board bring-up of STM32F4-based hardware, verification of external SPI Flash, and porting sensor applications based on ThreadX RTOS.
- Introduced groundbreaking "Plug&Play" device onboarding experiences on Omni's Ethernet connectivity features, utilizing PPP over UART.
- Delivered key features for Omni such as BACnet connectivity and Offline Data Backfill, showcasing agility in solving complex firmware challenges.
- Drove technical seminars covering SOLID Design Principles, Clean Architecture, TDD, and other software best practices, fostering a team-wide culture for improving code quality.

Dec 2018 — Aug 2019

Embedded Software Engineer, Awair

Seoul, South Korea

- Resolved device UX issues escalated from the Customer Service team, gaining extensive experience in manipulating MQTT, BLE, I2C, and Non-Volatile Storage.
- Participated in the development of a thermostat product, implementing Animation Engine for Window Manager, UI components for LED matrix, and I/O Expander and Touch IC drivers.

Aug 2018 — Nov 2018

Software Engineer Intern, Awair

Seoul, South Korea

- Contributed to the 'IoT Dev Center' internal tool development. Implemented a Python program simulating an IoT device, gaining experience with JSON Web Token, HTTPS, and MQTT.
- Conducted research on prototypes running Sub-1GHz radio communication, acquiring basic knowledge about IEEE 802.15.4 standards and Texas Instruments SimpleLink SDK.

EDUCATION

Mar 2015 — Feb 2023

Bachelor of Engineering in AI Convergence, Soongsil University

Seoul, South Korea

- Won the top prize in the 2017 Soongsil Capstone Design Contest with 'Project Tangelina', which aimed to prototype a device capable of displaying tangible, 3-dimensional images.
- Implemented "IEEE 802.15.4 based Wireless USB to Serial Converter" as a bachelor's thesis, showcasing embedded software programming skills in resource-constrained environments.

SKILLS

Embedded C (GCC, Binutils)	Expert	OOP (SOLID, Software Design)	Expert
F/W Debugging (JTAG, GDB)	Experienced	TDD (Ceedling, Unity, CMock)	Experienced
H/W Protocol (UART, SPI, I2C)	Experienced	IoT Protocol (MQTT, CoAP, ...)	Experienced
RTOS (ThreadX, FreeRTOS, ...)	Experienced	IoT SDK (WICED, ESP-IDF, ...)	Experienced

LANGUAGES

English	Highly proficient	Korean	Native speaker
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