Jinwoo Park

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WORK EXPERIENCE

CleanC Lab @ Paju, Korea ; 2022.06 – Present

Embedded Software Engineer (Fulltime) in Korea branch

- Develop server, edge computing and embedded product for logistics field and security application.
- Working with TDD(Test Driven Development) and integration test for each product.
- Many projects are written in Rust-Language for speed and reliability and cross-platform.

GE Appliances @ Seongnam, Korea ; 2020.12 – 2022.06

Embedded Software Engineer (Fulltime) in Korea branch

- Develop embedded software and driver for home appliances for Linux, GE-produced RTOS and FreeRTOS.
- Troubleshoot critical bugs inside of MCU silicon and PCB.
- Working with TDD(Test Driven Development) environments and actual hardware for higher coverage and reliability.
- Collaborate code with American employees.

GPARK @ Seoul, Korea ; 2019.07 – 2020.11

Embedded Software Engineer (Freelancer)

- Working for IoT hardware and embedded software of industrial arcade game center.
- Develop hardware and manage manufacturing IoT hardware project.
- Develop firmware with FreeRTOS using ESP32 and ARM Cortex-M.
- Replace existing legacy hardware in the industrial to recent latest technology.

R.O.K Cyber Command (Ministry of National Defense) @ Seoul, Korea ; 2016.12 – 2018.09

Embedded Software Engineer (Sergeant) as military duty

- Develop hardware and embedded software for embedded security application.
- Debug on security issues in CPU, wireless and wired communication and protocol.
- Develop on USB-Firewall widely usable General Utility Countermeasures Special Purpose based on power analysis device (Side channel attack) for protecting computers in the military from USB attack and reducing human failures.
- Reverse engineering embedded system to protect the military from potential vulnerabilities.

PROJECT EXPERIENCE

GE ranges and cooktop appliances @ GE Appliances ; 2021-07 ~ Current

- Cooking embedded software for the products with brand name is PROFILE, CAFÉ or MONOGRAM.
- Highly optimized for reducing hardware prices.
- TDD(Test Driven Development) based development on embedded system.
- Write GE-RTOS driver code focused on safety and performance.
- Write Linux / FreeRTOS driver code for Android UI board and Wireless module.

GE Sage - Indoor hydroponics appliances @ GE Appliances; 2020-12 ~ 2021-07

- Develop of embedded software for next generation appliances.
- TDD(Test Driven Development) based development on embedded system.
- By rewriting GE-RTOS driver code, troubleshoot many critical bugs produced from hardware or silicon on legacy and current product.

CoinTap HopperV @ Freelance ; 2019-07 ~ 2020.11

- Replace existing Coin-Exchange-Machine to connect to the internet for arcade game center.
- When customer raise a service disorder, the host refunds a coin by internet web panel.
- Develop software and hardware with integrated WiFi/BLE with ESP32 and motor driver.

Hardware Security Module for SBC @ Sejong University ; 2020-03 ~ 2020.06

- Works with legacy industrial PC of SBC (Single Board Computer)
- Develop hardware that includes LORA, GPS, battery charging circuit, several sensors.
- Develop software to aware threat on hardware then alert to server.

USB Firewall and Bad USB @ R.O.K Cyber Command; 2018-01 ~ 2018.09

- Protect BAD-USB and specialized to USB-HID.
- Develop hardware that includes USB host, device features and power analysis.
- Develop software to inspect USB packets and power usage without host PC's activity.

Awards & Certificates

The Grand Prize @ Upgrade your appliances Hackathon, GE Appliances - (2020. 06. 19)

- Hack appliances from 1st or 3rd party, for force connect to IoT cloud server.
- Own made PCB, firmware and server written in RUST Language.

The Grand Prize @ Creative Design Competition, Sejong University - (2020. 06. 19)

- Developed Hardware Security Module for SBC.
- Enhance hardware security at power-off / on status.

ROK Cyber Command's citation @ Ministry of National Defense Korea - (2018. 08. 30)

- Get credit for USB-Firewall project.
- Awarded from ROK CC Commander(Rear Admiral)

EDUCATION

Sejong University @ Seoul, Korea ; 2014.03 ~ 2020.08

- Bachelor of Engineering, Computer Science Engineering (3.12 / 4.5) – Graduated

ADDITIONAL INFORMATION

- Proficient in Embedded System Programming with Barebone, FreeRTOS, and Linux.
- Assembly-Language skill for embedded system and contributed ARM-v8A instruction set feature on NSA Ghidra. PR - https://github.com/NationalSecurityAgency/ghidra/pull/724
- Associated in IAMROOT Linux kernel study group from April 2019. [Kernel 5.0.1 ARMv8A]

- Experimentally, attempt to develop an embedded system with RUST Language and RISC-V.
- Electronics engineering skills for design circuit, develop and debug embedded system.
  – Friendly with oscilloscope, soldering machine and logic/protocol analyzer and EDA Cad.
- Experienced MCUs : AVR8, ATSAM, STM32, ESP32, Ti 8051/MSP430, Renesas RX core
- Fluent in English and Japanese. - Used English with collaborating with overseas.