Minjung Kim

Electronics Engineer

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Education

Kyungpook National University **Graduated:** *B.S in Electronics Engineering*
- Completed the DGM curriculum and was selected as a senior merit.

Kyungpook National University **In progress:** *M.S in Electrical and Electronic Engineering*
Studying the implementation of low-cost hypervisors in embedded systems and RTOS on Tricore boards.

Experience

AI-SoC Coding camp, Kyungpook National University Dec 2023 - Jan 2024
Software Trainee

- Taught C based Agent based simulation
- Made a project to block road when population density increases in a particular area.

Microprocessor design, Kyungpook National University Mar 2024 - Jun 2024
Teaching Assistant

- Taught C based Agent based simulation
- Made a project to block road when population density increases in a particular area.

Projects

Numberplate following robot using Jetson-nano Jun 2022 - Aug 2022
- Haar-cascade to recognize numberplate
- Alexnet to train color recognition
- Resnet to follow leading robots
- Implement a platooning Jetbot system in which the preceding vehicle looks at and follows the color, and the following vehicle looks at and follows the license plate of the preceding vehicle.

Coffee machine using S32K144 Sep 2022 - Dec 2022
- A coffee machine is summarily implemented using UART, timer, motor, etc.
- Project summary(link)

Numberplate Recognition using YOLOv5 Dec 2022 - Feb 2023
- Implemented a system that detects the number of license plates and license plates with relatively little data using various deep learning techniques.
- Project summary(link)

Elevator model using STM32F407 Mar 2023 - Jun 2023

- An elevator is summarily implemented using sensors, motors, timers, etc.
- Project summary(link)

Deadline scheduling in embedded environment Jul 2023 - Sep 2023

- Study the technique of conducting Deadline-based scheduling of the task and the technique of significantly reducing the memory usage by utilizing the struct bit field.

Multi-OS hypervisor on lightweighted MCUs Sep 2023 - Dec 2023

- Study about downloading multiple projects and OS in single MCU.
- Main thing is that time-sharing CPUs and virtualization of I/O.

Dynamic round robin scheduling on bare-metal MCU Jan 2024 - Mar 2024

- Main thing is how dynamic round robin affects in hypervisor in allocating time quantum to each OS.

Detecting height level of automotive using sensors Mar 2024 - May 2024

- By attaching hall and IMU sensor to automotive's suspension, we study the digital twin technique for the slope of the vehicle.

Erika RTOS on Tricore TC375 Jun 2024 - On process

- Using RTOS on Tricore board

Languages

- Korean - Native
- English - Fluent

Presentations

INTERNATIONAL JOURNAL PAPER

- Implementaion of dynamic round robin on MCU(on writing)
- Digital twinning slope of the automotive using sensor fusion(on writing)

DOMESTIC JOURNAL PAPER(KCI)

INTERNATIONAL CONFERENCE

Efficient Execution of On-Chip Embedded Software Using Pre-Emulation on Shallow OS Nov 2023

Publications

Efficient Execution of On-Chip Embedded Software Using Pre-Emulation on Shallow OS