SHU-YU (RAIN) LIN

✉ shuyulin1998@gmail.com in linkedin.com/in/shu-yu-lin-ntuee/ ⌂ github.com/dogsc729

Expertise in Embedded Systems and Computer Vision, familiar with C++, C, Python, Shell Script, UNIX, I2C/UART/SPI, Device Driver, and Control Systems. Seeking full-time Embedded Software Engineer opportunities.

Education

University of Michigan   **Ann Arbor, MI**
Master of Science in Electrical and Computer Engineering   *Aug. 2023 - April 2025*
- **Selected Coursework:** , **Computer Architecture**, **Advanced Embedded Systems**, **Embedded Control Systems**, **Embedded Systems** Research, **Computer Vision**, Matrix Methods, Probability and Random Processes

National Taiwan University   **Taipei, Taiwan**
Bachelor of Science in Electrical Engineering   *Sept. 2018 - Jan. 2023*
- **Selected Coursework: Algorithms**, **Data Structure**, **Operating Systems**, **Computer Architecture**, DSP in VLSI, Digital System Design, Machine Learning, **Intelligent Vehicles**, Integrated Circuit Design, Information Security
- **Awards:** Presidential Award, ranking within the top 5% of the class.

Experience

RealM (PyTorch, Docker, AWS EC2, 3D Computer Vision, Swift)   **Bellevue, WA**
Software Engineer Intern   *June 2024 - Aug. 2024*
- Researched and developed **semantic segmentation**, **point cloud completion**, and **surface reconstruction** on **3D point cloud model** based on **PyTorch** and **Open3D**.
- Developed an end-to-end indoor **3D reconstruction** application based on **NeRF**, with an **iOS** app as the frontend and **Node.js** as the backend; deployed the service on **AWS EC2** using **Docker**.
- Developed an **iOS** app for **object capture**, **indoor scene reconstruction**, and **room plan** construction using **SwiftUI** and **RealityKit** framework.

Intel Corporation (Python, Shell, UNIX, PCIe)   **Taipei, Taiwan**
Hardware Platform Application Engineer Intern   *July 2021 - June 2022*
- Contributor of **Highly Efficient Automatic PCIe Validation Tool Kit**, reduced **Linux** testing environment setup time **from 5 minutes to 10 seconds** by **Shell Script** and **Python**. Provided OS image by **Clonezilla** for teams worldwide. Enabled parsing of error logs of **100,000+** lines **within seconds** by **Python** for further usage. Enacted code release and validation flow for the project.

Projects

Live Caption Badge - LINK (C, RTOS, Python, BLE, HTTP, DSP)   **Aug. 2024 - Dec. 2024**
- Developed a real-time transcription device using **ESP32-S3-Korvo-2**, integrating microphone input with an **E-Ink display** for live text output; audio sent via **Wi-Fi** to a server running **VOSK Offline Speech Recognition API** for processing, with **custom PCB design** by **KiCad** and manufacturing.

Self-Navigating Robot (C++, RTOS, Raspberry Pi, Device Driver)   **Aug. 2024 - Dec. 2024**
- Developed a car system on **Raspberry Pi 4 Model B** with **FreeRTOS**, including **GPIO** and **H-Bridge drivers** for motor control and an OpenCV application for ball tracking.
- Integrated an **ultrasonic ranging module** for obstacle detection and collision prevention.

Bikesla - LINK (C++, Arm, MbedOS, STM32, Swift)   **Sept. 2021 - Jan. 2022**
- Developed IoT application based on **STM32L4 IoT node** and **iPadOS App** to control the device via Bluetooth.
- Functionality includes **speeding detection**, **anti-theft**, **lock/unlock**, and **bicycle finding**.

Technical Skills

Programming Languages: C++, C, Python, Swift, Go, SystemVerilog
Web Technologies: Node.js, React.js, Django, GraphQL
ML/AI: PyTorch, Numpy, Pandas, Matplotlib
Miscellaneous: MATLAB, Simulink, RTOS, Docker, AWS EC2, PostgreSQL, Git, Shell, Linux, Arduino, Raspberry Pi, CAN, LaTeX