



# SHU-YU (RAIN) LIN

✉ [shuyulin1998@gmail.com](mailto:shuyulin1998@gmail.com)  [linkedin.com/in/shu-yu-lin-ntuee/](https://www.linkedin.com/in/shu-yu-lin-ntuee/)  [github.com/dogsc729](https://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

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### 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

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### RealM

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

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

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### Live Caption Badge - [LINK](#)

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

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](#)

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

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**Programming Languages:** C++, C, Python, Swift, Go, Verilog

**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, L<sup>A</sup>T<sub>E</sub>X