

# Shu-Yu Lin

🐙 [github.com/dogsc729](https://github.com/dogsc729) | [🌐 linkedin.com/in/shu-yu-lin-ntuee](https://www.linkedin.com/in/shu-yu-lin-ntuee) | ✉ [syulin@umich.edu](mailto:syulin@umich.edu) | 🏠 <https://dogsc729.github.io/>

## EDUCATION

### University of Michigan

Master of Science in Electrical and Computer Engineering

Aug. 2023 - present

### National Taiwan University

Bachelor of Science in Electrical Engineering

Sept. 2018 - Jan. 2023

## WORK EXPERIENCE

### MIH Consortium

Software Engineer Intern

Sept. 2022 - Jan. 2023

Taipei, Taiwan

- Research Scheduling and Task management of **RTA-OS3.1**.
- Construct a car model with **3D Scenes of Azure Digital Twins**.
- Develop an embedded system based on **AUTOSAR4.4** on NXP's **S32K144-Q100 General-Purpose Evaluation Board**.

### Intel Corporation

Hardware Platform Application Engineer Intern

July 2021 - June 2022

Taipei, Taiwan

- Contributor of **Highly Efficient Automatic PCIe Validation Tool Kit**, responsible for **Linux** test environment setup by **Shell Script** and **Python**, providing OS image by **Clonezilla** for teams worldwide. Using **Python** to parse error log of **100,000+** lines within seconds for further usage. Enacting code release and validation flow for the project.
- Publish documents including Tool Kit testing environment setup and instructions, OS image creation and restoration.

### Arrow Electronics

Field Application Engineer Intern

July 2020 - Sept. 2020

Taipei, Taiwan

- Conduct **RF circuit debug** on 5G/2.4G printed circuit board(PCB) by impedance adjustment, utilizing network analyzer for observation.
- Analyze waveform and debug by **Verilog** on **Altera FPGA**.

## RESEARCH

### Federated Learning on Person Re-Identification

Media IC and System Lab (Advisor: Professor Shao-Yi Chien)

Sept. 2021 - Jan. 2023

Taipei, Taiwan

- Study Federated Learning and ReID techniques. Conducting experiments based on **Selective Knowledge Aggregation** and develop **robust tool kit** for Federated Learning on ReID.
- Link: **Project Website**

### Low Complexity Deep Neural Network Training Algorithm

MicroSystem Research Laboratory (Advisor: Professor Tzi-Dar Chiueh)

Sept. 2020 - Feb. 2021

Taipei, Taiwan

- Study **Quantization** of Convolutional Neural Network in **Pytorch**.
- Design pipelined multi-input format Convolution Multiply Accumulate circuit by **Verilog**, compatible with **INT4**, **INT8**, **FloatSD4** input format.

## PROJECTS

### Bikesla

Embedded System Labs final project

Fall 2021

[GitHub Link](#)

- Develop IoT application based on **STM32L4 Discovery kit IoT node** and **iPadOS App** to control the device via Bluetooth.
- Functionality includes **speeding detection**, **anti-theft**, **lock/unlock**, and **bicycle finding**.

### SWE Explore

Database Management final project

Fall 2021

[GitHub Link](#)

- Full stack project for software engineer job seekers to check salaries, locations, and other features worldwide.
- Front-end: **React.js**, back-end: **Django REST framework**, database: **PostgreSQL**.

## ACHIEVEMENTS

### Presidential Award

This award is given each semester to students ranking within **the top 5% of their class**. 2019

## TECHNICAL SKILLS

**Programming languages:** C++, C, Python, MATLAB, Java  
**ML/AI:** PyTorch, Numpy, Pandas, Matplotlib

**Web Technologies:** Node.js, React.js, Django, GraphQL  
**Miscellaneous:** MySQL, PostgreSQL, Git, Shell,  $\LaTeX$

## RELEVANT COURSEWORK

**Electrical Engineering:** Integrated Circuit Design, Computer Architecture, Digital System Design, Solid State Electronics, Embedded System Lab, Biomedical Engineering Lab, Electronic Design Automation, DSP in VLSI Design

**Computer Science:** Algorithms, Data Structure, Machine Learning, Operating Systems, Multimedia Security, Database Management, Computer Networks, Information Security, Web Programming, Analysis of Social Networks

**Mathematics:** Linear Algebra, Differential Equation, Discrete Mathematics, Probability and Statistics, Signals and Systems