SHU-YU (RAIN) LIN

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Education

University of Michigan   Ann Arbor, Michigan
Master of Science in Electrical and Computer Engineering   *Aug. 2023 - present*
- **Selected Coursework: Matrix Methods** for Signal Processing, Data Analysis and Machine Learning, Introduction to **Embedded Systems** Research, Analysis of Societal Networks

National Taiwan University   Taipei, Taiwan
Bachelor of Science in Electrical Engineering   *Sept. 2018 - Jan. 2023*
- **Selected Coursework:** Algorithms, Data Structure, Operating Systems, Computer Architecture, Database Management, Machine Learning, Information Security, Web Programming
- **Awards:** Presidential Award, this award is given each semester to students ranking within the top 5% of their class.

Experience

MIH Consortium   Taipei, Taiwan
Software Engineer Intern   *Sept. 2022 - Jan. 2023*
- Researched **Scheduling** and **Task Management** of **RTA-OS3.1** for Automotive **electrical and electronic architecture (EEA)** development and presented in the weekly technical sharing with the technical lead.
- Constructed a car model with **3D Scenes of Azure Digital Twins** for the **Cloud and Security team**, enabled car door status displayed on the **mobile App** and information synchronized on **Microsoft Azure**.
- Developed an embedded system based on **AUTOSAR4.4** on **NXP's S32K144-Q100 General-Purpose Evaluation Board** by **Simulink** and **EB Tresos Studio**.

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.
- Published documents including Tool Kit testing environment setup and instructions, OS image creation and restoration guide.

Personal Projects

Federated Learning on Person Re-Identification - LINK   Sept. 2021 - Jan. 2023
- Studied **Federated Learning** and **ReID** techniques. Conducted experiments based on **Selective Knowledge Aggregation** and developed **robust tool kit** for Federated Learning on ReID.

Bikesla - LINK   Sept. 2021 - Jan. 2022
- Developed 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 - LINK   Sept. 2021 - Jan. 2022
- 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**.

Pipelined RISC-V CPU Design - LINK   Feb. 2021 - June 2021
- Designed a **5-stage pipelined RISC-V processor** with instruction cache and data cache.
- Implemented **branch prediction** mechanism, **L2 cache** and **compressed instructions**.

Technical Skills

Programming Languages: C++, Python, Go, MATLAB, Verilog
Web Technologies: Node.js, React.js, Django, GraphQL
ML/AI: PyTorch, Numpy, Pandas, Matplotlib
Miscellaneous: MySQL, PostgreSQL, Git, Shell, Linux, LaTeX