

## SUMMARY

---

A system software engineer respecting performance and efficiency are brought by seamless integration between software and hardware. 1+ years of experience in IC verification, platform performance enhancement and memory utilization reduction.

## PROFESSIONAL EXPERIENCE

---

- **Airoha**

Hsinchu, Taiwan

System Software Engineer @ Ethernet SoC team

Feb 2022 – Present

- **FreeRTOS SDK Implementation:** Refine the GPIO and I2C driver, eliminating the database to reduce memory usage approximate 10%.
- **Linux SDK Implementation:** Integrated the I2C and GPIO driver with a standard Linux subsystem, enabling it to utilize Linux-provided APIs. Additionally, I implemented a kernel module ioctl interface to reduce the frequency of user space to kernel space transitions, enhancing the boot-up speed of the program within the SDK 40%.
- **SDK Integration:** Redesigned and consolidated multiple SDK architectures into a single repository for enhanced maintainability and reduced development complexity. Furthermore, I refine the Makefile and redesign the compilation procedure, improving the compilation speed about 7 times.
- **IC Verification:** Verify CPU peripherals, including I2C, GPIO, pinmux, CPU Bus.
- **Debug Development:**
- **System Level Testing Software Development:** Verify CPU peripherals, including I2C, GPIO, pinmux, CPU Bus.

- 

Taipei, Taiwan

- **Vector ISA:** Research on conventional and modern vector architectures, including Cray vector supercomputers, RISC-V Vector Extension and ARM Scalable Vector Extension.
- **Vector Microarchitecture:** Design a Cray-like vector core and construct a performance model on it. Evaluate the impact of vector chaining on several processor configurations.
- **Code Optimization for Vector:** Research on effective code optimization techniques, such as loop transforms and instruction scheduling, on different vector core configurations.
- **Application Profiling and Performance Projection:** Extract vectorizable parts of program by using LLVM, including SPEC2017fp and Darknet, and give an estimated evaluation on our vector core.

## PROFESSIONAL SKILLS

---

- C/Python programming Language
- Makefile

## EDUCATION

---

- **National Cheng Kung University**

Master of Mechanical Engineering

Tainan, Taiwan

Sep. 2020 – Aug. 2022

- **National Central University**

Bachelor of Mechanical Engineering

Taoyuan, Taiwan

Sep. 2016 – Jun. 2020