Aston Li 李柏穎

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Personal Summary

- 8+ years of experience in embedded system FW and low-level driver development.
- 6+ years of experience in verifying FPGA/SoC features (digital/analog) via firmware.
- 1+ years of experience in integrating compile flow of multiple repositories to SDK on Linux.
- Familiar with boot-up & loader processes, peripheral features (GPIO, UART, SPI, I2C, DMA, Timer), FT/MP firmware, and IoT applications in **bare-metal** and **FreeRTOS** environments.
- Experienced in building systems from the ground up and performance analysis.

Experience

Senior Engineer, **Blue Ocean(Deep Ocean) Smart System,** Hsinchu County, Taiwan — Apr 2021 - Feb 2023 · 1 yr 11 mos (company closure)

 # AI SoC, GPGPU/HPC, C, Bash Script, C++, CMake, Git, GitLab, docker

- Implement a middle layer for data transmission, device operations, and RPC interface in a multi-chiplet system.
- Perform inference performance analysis (profiling) of the distributed AI framework system on FPGA/SoC, identifying bottlenecks and optimizing resource utilization.
- Build and configure CMake, dependencies, and environments for multiple repositories, various architectures, operating systems, and platforms (including Ubuntu 18,20,22, aarch64, x86_64, and TI arm64).
  - Cross-compile multiple dependencies including TVM, Python 3.8, LLVM 11, GCC, Glog, Boost, etc.
- Develop and maintain build processes for daily builds, auto-testing, releasing SDK, and SDK initialization.

Senior Engineer, **Igis Technology,** Hsinchu County, Taiwan — May 2019 - Apr 2021 · 2 yrs

 # In-display fingerprint sensor IC, C, Bash Script, Assembly, Git

- Optical Fingerprint Sensor Driver, ROI, and Binning
- Low-level Driver Development and FPGA/SoC Verification (Digital/Analog)
  - *UART, GPIO, Interrupt, Timer, TCON, SPI slave*
  - *DSP, DMA, System Bus, PMU, ADC, WFI, Power Saving mode*
- System Firmware Architecture Design and Development
  - *Porting FreeRTOS, BootROM, Security Update, ISR, IRQ APIs, Cache, Makefile, Linker Script*
- Implement Command Line Interface (UART) for testing and debugging
- Tools and Technologies
  - *Andes N25f/AE250, IDE, Logic Analyzer, Oscilloscope, Arduino, Encryption*

Firmware Engineer, **Phison Electronics**, Miaoli County, Taiwan — Sep 2017 - Apr 2019 · 1 yr 8 mos

 # IP verification, C, Assembly, SVN

- NAND Flash Controller IC Low-level Driver Development
- FPGA/SoC Verification (Digital)
  - *NAND Flash IP, Error Handling (Raid)*
  - *Coprocessor Communication between ARM R5 and Andes N8*
- Tools and Technologies
  - *IDE, Logic Analyzer, Synopsys HAPS, Cadence Palladium, Verdi*

Software Engineer, **Montage Technology**, Taipei, Taiwan — Mar 2015 - Aug 2017 · 2 yrs 6 mos

 # Wifi SoC module for IoT, C, Bash Script, Assembly, Python, SVN

- **Montage Employee of the Year 2016 (sole winner in Taiwan)**
- Low-level Driver Development and FPGA/SoC Verification (Digital/Analog)
  - *GPIO, PWM, UART, I^2C Slave, USB (UDC, CDC), Timer, PMU, Interrupt, OTP, ADC, DAC*
- Implement IoT Applications (SDK) using FreeRTOS and Performance tuning
  - *Transparent Mode (Wifi-to-serial bidirectional transmission)*
  - *AWS IoT Server Connection Applications, Power Saving Mode, OTA update*
  - *UART Software Flow Control, AT CMD parser, software I^2C Master*
  - *Porting libraries: MQTT, wolfSSL, axTLS, cJSON*
- Implement IC FT, White-box Test, and WiFi Module Mass Production Firmware
- Tools and Technologies
  - *C-SKY, GDB, Logic Analyzer, Oscilloscope*
  - *FreeRTOS, Linux, eCOS, BootROM, Bootloader*

Firmware Engineer, **Delta Electronics**, Taoyuan County, Taiwan — Jul 2014 - Feb 2015 · 8 mos

- Implement Semiconductor Fab Equipment Power Supply & High-Voltage DC Power Supply
- Tools and Technologies: *DSP, MCU, PWM, ADC, DAC, Oscilloscope*

Education

National Taiwan University of Science and Technology — Sep 2012 - Jun 2014
Master's degree, Electrical and Electronics Engineering

National Taiwan University of Science and Technology — Sep 2008 - Jun 2012
Bachelor's degree, Electrical and Electronics Engineering

Certification

TOEIC: 660, GEPT: Intermediate