

Charlie Poon Chun Sing

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SUMMARY

Highly driven embedded software engineer with background of high-/low-level software development and PCB design. Including embedded firmware development, full stack development for IoT application. Quick to learn new technologies and confident when faced with challenges. My knowledge and methodical problem-solving skills will be a great addition to your engineering team.

SKILLS

Proficient: C/C++, Arduino, STM32(F0/F1), JLink/ST-Link, FreeRTOS, Python, MQTT, JSON, FTP, Bash Script, Reverse SSH tunnel, AWS EC2 & S3, Microsoft Power Platform(Power Apps, Power Automate, Dataverse), Logic Analyzer, KiCAD, Hand soldering SMD components, BOM preparation

Intermediate: JavaScript, node.js, Express.js, jQuery, AJAX, HTML, CSS, RESTful API, SQL(MySQL & SQLite), Altium Designer, Makefile/CMake, Git

EMPLOYMENT

Swire Coca-Cola HK, Senior Engineer-Technical Development (2019-Current)

- Developed a few of the software tools and systems that are applied to inventory management and vending machine with computer. (Ref. to the “**projects**” section)
- Provide work instructions and guidelines for my developed software tool & system.
- Provide assistance and guidance to outsourcing software vendors. Such as defining system diagram, API protocols & technical specifications.

Deepsky Corporation Limited, Embedded Software Engineer (2018-2019)

- Responsible for board bring-up, firmware development and implement different features for the custom design MCU boards.

Fresh Up Group Limited, Hardware Engineer (2017-2018)

- Responsible for the development of custom design MCU board. (Ref. to the “**projects**” section)

PROJECTS

QR code scanning APP | [link](#)

Based on [MS Power Apps](#), developed a mobile app to scan QR code and upload those scanned records to Google Sheet(Excel) for inventory management in warehouse.

- The serverless App-Script(JavaScript) can receive HTTP requests(Post & Get) from mobile app, to append record on Google Sheet and look-up associated data as for returning.
- Developed the power automate flows(via HTTP) for mobile app to send requests for upload/look-up.
- Designed the UI for the mobile app.

Forward real-time status from an old program | [link](#)

A full-stack IoT software can keep tracing the log file's content from an existing old vending program in Ubuntu 12.04 and forward those real-time records(e.g Transactions/Refill/etc) to another server in AWS cloud. Since the original old in-house server is required to be shut-down.

- Messages exchange through MQTT broker for the re-developed software to upload real-time records and receive self-defined commands in JSON format.
- Set up a SFTP server for transaction settlement files transfer from vending computer.
- Reverse SSH tunnel to access vending computer.
- Support remote software upgrade(Download from AWS S3)
- Modified the web UI template and applied for the backend website.

Vending Machine Interface Board | [link](#) | [Schematic PDF](#)

Developed a multi-purpose interface board for connecting between computer and vending machine.

- Adapt different types([MDB](#), RS232) of connectors from vending machines.
- Allow to connect any external board/sensor via different interfaces(I2C, SPI, UART) .

MCU Board for JP type Vending Machine

Captured the unknown serial port protocol in JP type vending machine by using reverse engineering with logic analyzer. And reconnect with a custom design MCU board.

EDUCATION

Hong Kong University of Science and Technology, 2016

Bachelor of Engineering (Honors) in Electronic Engineering

Hong Kong Institute of Vocational Education (IVE), 2011

Higher Diploma in Electronic and Communication Engineering