Minjian Liu

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Profile

Software Engineer interested in **Internet of Things (IoT)** , **Wireless Technologies**, and **Embedded Systems**, experienced with both designing and programming in bare-metal and RTOS environments for IoT solutions. Currently, focusing on **IEEE 802.15.4** and **Thread Mesh** development.

Education

Stanford University

Graduate Certificate in IoT
GPA: 3.85/4.0
Feb. 2021 - Jun. 2023

Johns Hopkins University

M.S. in Computer Science
GPA: 3.9/4.0
Aug. 2017 - Dec. 2018

Australian National University

Master of Computing
GPA: 6.75/7.0
Feb. 2014 - Dec. 2015

Certificates

Embedded Developer

certificated by Beijing Uplooking Technology

Linux Architect

certificated by Beijing Uplooking Technology

Server Developer

certificated by Beijing Uplooking Technology

Course Certificate for Advanced C Programming

certificated by Peking University (Coursera)

Experiences

Apple — **San Diego, United States**

Wireless Software Engineer — Dec. 2023 - Present

- Wireless software and protocol development around **IEEE 802.15.4** and **Thread Mesh** technology for Apple products.

Silicon Labs (Silabs) — **Boston, United States**

Senior Software Engineer — Apr. 2023 - Dec. 2023

- **Zigbee Direct**: Zigbee Direct is a new feature of **Zigbee** that allows **BLE** devices to connect a Zigbee network via a Zigbee Direct Device (ZDD). My responsibility includes the commissioning, security and tunneling implementation for ZDD.

Software Engineer II — Apr. 2022 - Apr. 2023

- **Concurrent Multi-Protocol (CMP)**: CMP empowers a Host-RCP device running **Zigbee**, **Thread**, and **BLE** wireless connectivity concurrently. My responsibility includes the pro-compliance-posix implementation for **IEEE 802.15.4** MAC certification, host app optimization (stability and CPU consumption), Silicon Labs' multiprotocol docker container integration, supporting customers with NCP-to-RCP migration.
- **Zigbee & Multiprotocol Hardware Continuous Integration (HW CI)**: HW CI runs Zigbee and Multiprotocol tests automatically with new commits, serving as a guard for development and a checkpoint for release.
- **Zig-Dock**: Mentored a summer intern to implement Zig-Dock, an architecture and OS independent **docker container** solution for multiprotocol development. It allows developers to develop, build and run multiprotocol apps on their laptops for different architectures (x84_64, i386, arm32v7 and arm64v8).

Software Engineer — May. 2019 - Apr. 2022

- **Multi PAN**: a Silicon Labs proprietary **Zigbee** feature that allows a device to operate on multiple Zigbee networks. These Zigbee networks are able to have different PAN IDs, security levels, and topologies. A multi-PAN device is able to serve different roles (coordinator/end device) in different networks.
- **EmberZNet Serial Protocol (EZSP) v8.0**: EZSP is used by a host application processor to interact with the **Zigbee** stack running on a Network Co-Processor (NCP). A new frame format has been introduced to reorganize frame segments so as to increase EZSP frame ID from 1 byte to 2 bytes but with the same total frame length.

Google — **Canberra, Australia**

Google Summer of Code Mentor — Apr. 2016 - Aug. 2016

Participated in the GUI design and visualization implementations for Rogas (Relational-Oriented Graph Analytic System, an **Open-Source** project):

- Used Bootstrap and D3.js to implement the GUI design and the graph operation visualization (i.e. graph construction, ranking, clustering, and path-finding) for Rogas.
- Used Tornado web framework to constructing a web server for Rogas.

ANU School of Computing — **Canberra, Australia**

CECS Summer Intern — Nov. 2015 - Feb. 2016

Participated in the Rogas project with following responsibilities:

- Designed the system framework and the SQL-extended query language (RG-SQL).
- Implemented the relation-graph hybrid data model and the query processing engine by integrating PostgreSQL with Graph-tool, SNAP, and NetworkX.