

# Charlie Yin

## Software Development Team Lead

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## Skills & Abilities

|            |                                                                                                                   |
|------------|-------------------------------------------------------------------------------------------------------------------|
| Languages: | C, C++, Golang, Python, JavaScript, HTML, CSS/SASS, Rust                                                          |
| Tools:     | Docker, Git, SVN, Shell, CMake, Elasticsearch, Node.js                                                            |
| Protocols: | TCP/IP, UDP, HTTP, REST API, TLS, IPC                                                                             |
| OS:        | Linux/UNIX, Windows, RTOS                                                                                         |
| Others:    | Backend Development, Embedded Firmware, Data Structures, Algorithms, Webservers, Multithreading, Machine Learning |

## Experience

### **Fortinet | Software Development Team Lead** **Feb. 2021 – Present**

- Managed the FortiClient Linux development team and helped team members improve their abilities
- Analyzed product requirements and designed solutions to successfully deliver crucial features
- Participated in cross-team discussions to evaluate project feasibilities and identify potential issues
- Balanced multiple projects while ensuring high code quality and on-time completion of requirements

### **Fortinet | Software Development Engineer I - II** **Jul. 2018 – Feb. 2021**

- Implemented a reliable database daemon in C++ which serves data to local processes via REST API
- Designed a fault-tolerant and fast webserver for log aggregation which can handle high data volumes
- Improved the stability of FortiClient Linux significantly by fixing critical issues raised by various users
- Stayed up-to-date with and learned new technologies that can better improve product performance

### **UBC Sailbot | Software Developer** **Sep. 2016 – Sep. 2017**

- Researched and taught 3 other team members about the CAN bus and the CANopen protocol
- Planned the control system architecture with a team of 5 ensuring easy scaling and maintenance
- Developed and debugged embedded firmware for the STM32F4 microcontroller using Linux tools
- Implemented reliable data transfer in a real-time system for up to 127 separate data nodes using C

## Projects

### **GPU (CUDA) Matrix Library | [github.com/CharlieYJH/libcumat](https://github.com/CharlieYJH/libcumat)** **Mar. 2018 – Jun. 2018**

- Self-learned GPU/CUDA programming principles to create an efficient matrix library
- Implemented an intuitive API which allows users to write matrix equations in a natural manner
- Optimized library performance by adapting C++ lazy evaluation techniques to GPU-based arrays
- Used OOP principles to modularize library code which allows for easy maintenance and extension
- Wrote comprehensive unit tests which ensured correct library functionality throughout development

### **Gyro Stabilized Platform | [git.io/vhthV](https://git.io/vhthV)** **Sep. 2016 – Apr. 2017**

- Developed a responsive controller in C++ which stabilizes a 2-DOF platform in under 2 seconds
- Tested and documented system performance to allow for improvements through iterative design
- Collaborated with a team of 4 to design a self-stabilizing platform which met all client specifications
- Worked with the SPI and I<sup>2</sup>C protocols for sensor communication and real-time motion data retrieval

## Education

### **University of British Columbia | Vancouver, BC** **Sep. 2013 – Jun. 2017**

Bachelor of Applied Science in Electrical Engineering (GPA: 94.3%)