

# Xueyi Li

650.387.5156 | lixueyi83@gmail.com | [Linkedin<sup>1</sup>](#) | Nashville, TN

## Summary

- Doer and productive **Individual Contributor** with hands-on analytical and troubleshooting skills.
- Embrace **Simplicity** in system architecture/design, documentation and project management.
- Proficient in all generations of 8/16/32 bits bare-metal system architecture, design and implementation, from driver layer to application layer.
- Skillset: C/C++11/Boost, Bash/Python, GPIO/I2C/SPI/RS-485/CAN, Oscilloscope/Multimeter, GDB/Valgrind/Strace, SimpleWebServer/OpenCV, BACnet, Redis, Hireis, Easylogging, Json, Opencv, Zbar (*only use open source when in need*).
- Tool: Make/CMake/Boost Build, Git, Gira/Azure, Markdown, Pandoc.
- Good team player with responsibility and dedication, self-motivated, independent, with leadership and effective interpersonal skills to work in an agile and cross-functional team.

## Work Experience

*04/2020 to present*

*Staff Engineer II, Firmware Engineering @BD Bioscience, California, USA*

- Designed and implemented Peripheral Control System and ACDU control unit across RS485.
- Redesigned and decoupled controller and controller simulator code, more readable and portable.
- Optimized RS485 communication performance/reliability by implementing adaptive window algorithm.
- Designed and implemented sync/async communication mechanism using WebSocket(https, wss).
- Greatly increased ACDU sorting performance from previous 67s to ~35s.
- Design and implemented Software Simulator sending https commands/queries and receiving WebSocket messages; Also, wrote a lot of the test cases using bash and curl, simplified test process.
- Optimized firmware build process from ~75 minutes to <10 minutes with Makefiles/boost build(b2)
- Trouble shooting issues across layers using gdb, logs, oscilloscope, multimeter, etc.
- Automated release and deployment process for QA team by writing a bunch of bash scripts.
- Knowledge share, including providing any support and assistance to entire team.

*08/2018 to 01/2020*

*Senior Software Engineer @Turntide Technologies, California, USA*

- Designed & implemented BACnet server layer on top of BACnet Stack(0.9.1)
- Implemented BACnet/IP(BIP) and Master Slave/Token Passing(MSTP on RS-485) application service.
- Refactored data management layer, restructured more than ten thousands of lines of redundant code.
- Implemented sqlite3 database read/write abstract layer by creating portable utility wrapper functions.
- Designed & implemented data sharing service that allows information exchange across BACnet devices.
- Implemented dynamic memory consumption and memory leaking checking tools(with Valgrind) in bash which resolved major memory leaking issues.

**04/2017 to 08/2018**

**Senior Linux Application Engineer @Mercedes-Benz R&D North America, California, USA**

- Designed and implemented multi-threaded video streaming service for 2D camera and 3D cameras.
- Accomplished multi-streaming solutions in distributed system with socket and open source libraries.
- Designed and implemented positioning light control system with socket servers and client using Arduino.
- Implemented messages/events communication mechanism in multi-threaded system using Redis.
- Integrated computer vision algorithms for object identification and tracking.
- Work jointly with all the cross-functional team members to achieve the best performance of the product.

**02/2016 to 01/2017**

**Senior Embedded Software Engineer @Elixir Photonics Incorporated, California, USA**

- Customized Jam STAPL Player to program FPGA in a JTAG chain with text-based Jam file.
- Implemented FTDI chip driver and Inter-Integrated Circuit (I2C) shared library on Raspberry Pi.
- Developed python wrapper to call the I2C shared library, including read/write/convert APIs.
- Implemented services to monitor memory consumption and to manage log rotations.
- Design and Implemented Low Voltage signal detection and protection application on PIC MCU.
- Board Bring-up, manage software integration and software version control.

**06/2014 to 07/2015**

**Embedded Software Engineer @Mentor Graphics, Shanghai, China**

- Developed Volcano Target Package(VTP) sample project for various customers.
- Conducted on-site presentation, training, system integration and troubleshooting.
- Demonstrated technical assistance on Automotive CAN subsystem implementation and integration.
- Strengthened sustained relationships with global customers. Improved 20% VTP market share in China.

**05/2010 to 06/2014**

**Embedded Software Engineer @Yanfeng Visteon Electronics Technology, Shanghai, China**

- Implemented critical subsystems such as Flash Boot-loader, Inter-Processor Communication Layer(IPCL, DMA), Back-light Dimming Control and Multi-Media, which are portable, readable and consistent.
- Accelerated sibling projects' development by 3-5 months via porting those subsystems I developed.
- Accomplished Memory Check components' implementation, familiar with link file and map file.
- Managed and accomplished more than 8 mechanism replacement projects independently in 2011.
- Maintained good relationships with customers. Won the "Best Coordinator Award" in 2011.

## Education

- *Master, Biomedical Engineering, Shanghai University, Shanghai, China, 05/2010*
- *Bachelor, EE, Huanghe Science & Technology College, Zhengzhou, China, 06/2007*

## Certification

- *Machine Learning Engineer Nanodegree<sup>2</sup>, Udacity, California, USA, 06/2019*

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1. <https://www.linkedin.com/in/xueyi-li-b6545234/> ↩

2. <https://graduation.udacity.com/confirm/KNSD3C3N> ↩