Guan-Ting Li (Ted Li)
Senior Firmware Engineer

Over 6 years of firmware/software development expertise as a Senior Firmware Engineer, specializing in embedded systems, cross-functional projects, and AI-optimizations. Driving global technical innovations and training.

Summary

- **6+** years of experience in C development, specializing in embedded system.
- **6+** years of experience in Python development, specializing in instrument control frameworks, behavior testing frameworks, and automated testing tools.
- **6+** years of embedded system experience, focusing on RTOS, BSP, HAL development.
- Expertise in pioneering firmware/software solutions, including AI-based optimization auto-tuning systems, advanced security firmware design for PSU system(2-stage bootloader, and secure firmware update).
- Strong **cross-functional collaboration** for EE, DQ team , enhancing development efficiency **60%.**
- Familiar with IoT-integrated multifunction system designs.
- Familiar with wide spectrum of instruments: Oscilloscope, DC Load, AC Source, Power Supply, Signal Generator, 6 1/2 Digit Multimeter, 8 1/2 Digit Calibrator, Logic Analyzer.
- SKills:
  - RTOS: FreeRTOS, CoOS RTOS
  - Programming Language: C/C++, Python, SQL, Bash, Shell
  - Library: TensorFlow, PyTorch, Keras, Numpy, Scipy, Pandas, Matplotlib, multiprocessing, threading, asyncio
  - Embedded Platform: Raspberry Pi, STM32, Arduino, ESP32, NodeMCU
  - OS Platform: Windows, Ubuntu, macOS
  - MCU Development: ADC, DAC, DMA, PWM, GPIO, UART, SPI, I2C, Modbus RTU, RS232/RS485
  - Tools: Git, Docker, Docker Compose, Grafana, JIRA, VSCode, PyCharm, Eclipse IDE, STM32CubeIDE, ChatGPT, LLM, Llama2, GGML
  - Database: MySQL, SQL Server, InfluxDB

Contact

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Technical Profile

- C
- Python
- SQL
- RTOS
- Embedded System
- Git
- Bash
- Docker
- Linux
- Artificial Intelligence

Software

VSCode

PyCharm

Ubuntu

MacOS

JIRA

Competencies

Problem-Solving

●●●●●

Excellent

Work History

2019-01 -
2022-06

Senior Firmware Engineer

Artesyn Embedded Technologies, Taipei

- Pioneered AI-based optimization auto-tuning system using PPO, containerizing it as application, which slashed PSU embedded system development durations by **96%**.
- Devised Python-based automated testing tool, enhancing EE and DQ teams' efficiency by **60%**, dramatically reducing manual testing efforts.
- Directed **5+** RTOS training sessions in Embedded C, laying foundation for global sites transitioning to RTOS-based product ecosystem.
- Architected advanced security platform for PSU systems at global sites, bolstering client trust and elevating market credibility by **25%**.
- Designed universal calibration framework for top clients like Dell, HP and Lenovo, accelerating R&D product development by **30%** and streamlining testing processes.
- Crafted OOP-based framework with design patterns in Python, bolstering adaptability, supporting **10+** diverse instruments spanning various brands and models.
- Devised modular Excel-based behavior testing tool for DQ team, slashing test development time by over **50%**. This tool has become pivotal for testing processes.

Key Achievement: Spearheaded RL-optimized embedded systems, slashing development by **96%**. Through cross-functional collaboration, I boosted EE and DQ teams' efficiency by **60%**, while innovating with OOP and RTOS training.

2015-11 -
2018-09

Firmware Engineer

Signatude Co., Ltd, New Taipei City

- Engineered multifunction measurement system using RTOS; adeptly managing 3-stage analog multiplexers, 24-bit Sigma-Delta ADC, MCU, and FPGAs.
- Conceived Python-driven auto-calibration, integrating PCB with multi-stage relays. Streamlined testing by **40%**, ensuring precision across diverse measurements.
- Designed IoT integration for Big Data, merging firmware and software through Python and MySQL. Achieved seamless sync with SQL Server.

Key Achievement : Pioneered an RTOS-driven

Cross-Domain Collaboration

●●●●● Excellent

Object-Oriented Development

●●●●○ Very Good

Efficiency Analysis and Improvement

●●●●○ Very Good

Embedded Device Design and Hardware Knowledge

●●●●● Excellent

Algorithm Implementation

●●●●○ Very Good

Staff Education and Training

●●●●○ Very Good

Design Pattern

●●●●○ Very Good

Performance Optimization

●●●●● Excellent

multifunction measurement platform; enhanced precision through auto-calibration, achieving a **40%** surge in testing efficiency.

Education

2012-09 - 2015-06

Master of Science: Robotics Engineering

Tamkang University - New Taipei City, Taiwan
- Thesis: Picture-Based Drafting System for Robot Manipulators

Focus: Robotics, Manipulator Motion Control, Path Planning, Image Processing

2014-04 - 2015-03

Graduate Exchange Program: Robotics Engineering

The University of Electro-Communications - Tokyo, Japan
- Project: Convolutional Neural Network based on Embedded System

Focus: Machine Learning, Classification, Image Processing, Embedded System

2008-08 - 2012-06

Bachelor of Science: Automatic Control Engineering

Feng Chia University - Taichung, Taiwan
- Project: The Heating Constant Temperature Control System Design for New Strapping Machine

Focus: Control System, System Identification, Embedded System, Circuit Design