

Kuan-Hsun Wang

San Francisco, CA, 94158

☎ (+1) 650-733-3596 | ✉ sway.khwang@gmail.com | 🔗 <https://www.linkedin.com/in/swaywang/>

Summary

9+ years hands-on experience on software development, embedded system and firmware development. A Pythonist who loves to automate the boring stuff with Python and thinks about writing readable, testable and maintainable code is the most important thing. Deep understanding from IC design/verification, firmware development, embedded software, OS, system programming and applications.

Skills

Programming:	C/C++, Python, C#, 8051 Assembly, Verilog
Software Architecture and Design:	OOP, OOD, Design Pattern
Embedded System:	ARM, 8051, ARC, Andes, Arduino
Firmware Development:	USB, SPI, I2C, UART, EEPROM, External Flash, Touch Controller, Different Types of Sensors
Other:	Linux, Git, Vim, VSCode, Jupyter Notebook, GDB, pytest, pySerial, pyUSB, ctypes

Work Experience

Synopsys

Mountain View, CA

SENIOR SOFTWARE ENGINEER

Dec 2017 – Present

- Designed and developed an automation fault injection system which injects faults into source code and runs tests in parallel (Python and Redis)
- Built ETL pipelines to generate and collect simulation results for data scientists (Python and C++)
- Improved 2x performance on key components in Verdi which is a debugging tool for hardware description language

Synopsys

Hsinchu, Taiwan

SENIOR SOFTWARE ENGINEER

Jul 2015 – Dec 2017

- Developed and maintained a configuration parser in Verdi to be able to handle 100 millions LoC of configuration files (C++)
- Did code refactoring to increase code readability and improve 5x performance
- Mentored junior engineers. Led them to finish projects

Pixart Inc

Hsinchu, Taiwan

SOFTWARE ENGINEER

Sep 2011 – Jul 2015

- Developed and maintained firmware and software for HID products (Optical Touch, Optical Mouse, 2.4G Wireless and Bluetooth Mouse)
- Developed FPGA/ASIC/SoC verification tools using Python, C/C++ and C#
- Developed automation testing tools for manufacturing (pytest, PyUSB, pySerial and wxPython)

Selected Projects

Home Automation System Integrated With iPhone and Sensor Network

C, Python, Objective-C, 8051 assembly, pySerial, wxPython

SOFTWARE AND FIRMWARE DEVELOPER

- Developed software and firmware for sensor network
- Built an iOS app to control the sensor network and home appliances
- Integrated with google calendar to control home appliances (US Pattern US20120166010)

Optical Touch System

C/C++, Python, C#, pyUSB, pySerial, pytest

SOFTWARE, FIRMWARE AND ALGORITHM DEVELOPER

- Built an optical touch system with 2 cameras (US Pattern US20140176964)
- Developed camera firmware, verification tools and algorithm development tools

Education

National Tsing Hua University (Embedded Platform Lab)

Hsinchu, Taiwan

MS, COMPUTER SCIENCE

2009 - 2011

- MS Thesis: A Lightweight Debugging Tool for Resource Constrained Wireless Sensor Platforms

National Chung Cheng University

Chiayi, Taiwan

BS, COMPUTER SCIENCE

2005 - 2009