Hsuan-Ling Lin

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EDUCATION

National Tsing Hua University — Hsinchu, Taiwan
M.S. in Communications Engineering — Sept. 2013 - July 2016
- Thesis: Implementation of MQTT Protocol for Content Management Servers and Linux-Based Embedded Systems
- Overall GPA: 3.96/4.3

National Central University — Taoyuan, Taiwan
B.S. in Communication Engineering — Sept. 2009 - June 2013
- Academic Excellence Award (for ranking top three in class in semester) — 2011 First Semester

CONTINUING EDUCATION

National Taiwan Normal University — Taipei, Taiwan
Department of Computer Science and Information Engineering — Feb. 2019 - June 2019
- Courses taken: Computer Algorithms (Grade: A+), Operating Systems (Grade: A+)
- Overall GPA: 4.3/4.3 (6 credits)

National Taiwan University — Taipei, Taiwan
Information System Training Program, Department of Computer Science and Information
- Python Flask Web Development and Chatbot — Mar. 2020 - Apr. 2020
- C++ Object-Oriented Programming and Design Pattern — Nov. 2019 - Jan. 2020

Udmey
- Complete Python Developer — Feb. 2020

WORK EXPERIENCE

MStar Semiconductor, Inc. — Taipei, Taiwan
Software Engineer — Dec. 2016 - Dec. 2018
- MStar Semiconductor was a global leading fabless IC design company (MediaTek Inc. acquired MStar in 2019).
- ASIC/FPGA verification:
  - Video encoder (JPEG/H.264/HEVC): developed software test functions in encoder C-model (C/C++ based) for verifying hardware functions, covered all target test items.
  - Video decoder (Google AV1): responsible for hardware AV1 decoder IQ/IT verification, including developing IQ/IT patterns for hardware IP verification using AV1 software model.
  - LZMA encoder (hardware-oriented dictionary encoding): designed testing flows and established testing software model (C++ based) for testing different modes of hardware, software model completed 100% target tests by comparing CRC, compressed bit-streams, byte-count and decompressed data.
- Improved compression rate of motion vector in Google AV1 c-model by 65% through researching and developing data compression algorithm.
- Developed desktop application as GUI tool to decode multi-format coding image and display a variety of YUV formats, designed user-friendly interface.
- Analyzed issues, reported test results, and worked with hardware designer to resolve problems.
- Leveraged knowledge in git, video codec, scripting language, programmed in C/C++ using Visual C++, debugged using miniport drivers to access hardware register and dump DRAM.

SK2 TOEFL Consultant Group — Taipei, Taiwan
Teaching Assistant — Oct. 2019 - Present
- SK2 TOEFL Consultant Group has tutored over 6000 students to achieve their ideal score since 2013.
- Provided aid to students who had questions related to the TOEFL test as the bridge between consultants and students.

PROJECT EXPERIENCE

National Tsing Hua University Library Wireless Tour Guide Program Sept. 2015 - July 2016

- Developed a wireless tour guide system for NTHU Library by integrating embedded systems (controllers), Bluetooth USB dongles (tour nodes), and content management server; when users are in coverage of tour node, the tour guide app will show users' location and provide them information of the area.
- Implemented integration of content management server and Linux-based embedded system via MQTT protocol.
- Created web application as GUI tool on server for admin to manage content of areas, initialize settings, monitor guide nodes and provide statistics results.
- Designed MQTT topics/messages and scripts in Linux-based embedded systems to enable automatic configuration of embedded systems, and enable web application to monitor connections of guide nodes.

CatchUp (a cloud platform for taking meeting minutes) Sept. 2011 - July 2012

- Developed work productivity platform with commercial features; when users are in the same Access Point or they use a tag and a gateway to mark themselves as being in the same place, they can select members and form a group; members could then take meeting minutes, send and receive messages, track members' location, transfer files, and add tasks to the team schedule.
- Integrated smart mobile devices, embedded system (RTL 8196c), and cloud database.
- Implemented server through PHP+MySQL.
- Designed relational database.

Side Project Feb. 2020 - Present

- A web application for managing products
  - Developed a dynamic and interactive website, implement CRUD functions and message board.
  - Utilized: Python Flask + Jinja + Firebase + Heroku + Bootstrap
- Line chatbot with offering real-time stock price query
  - Utilized: Python Flask + Ngrok + Firebase + Heroku + Scraping stock price with PyQuery

AWARDS

MStar Short Term Award *2, Research & Development Division, MStar Semiconductor Inc. Oct. 2017 & May 2018

- Recognition of outstanding employee in Research and Development Division II

First Prize, CEECS Special Projects Competition, National Central University June 2012

- CatchUp won 1st Prize (selected from 15 teams in the final round); annual competition hosted by the College of Electrical Engineering and Computer Science.

Most Popular Project Prize, CEECS Special Projects Competition, National Central University June 2012

- CatchUp was voted favorite project by competition attendees.

SKILLS

Programming Languages	Python, C, C++, PHP
Tools	Git, shell script, batch, Unix, MySQL
Protocols	MQTT, HTTP
Packages	C++ Windows Form, bootstrap
Web	Flask (framework), Firebase (database), Heroku (deployment)
Industry Knowledge	Video codec, FPGA/ASCI verification

LANGUAGES

Mandarin: Native
English: Fluent
Test Scores

- TOEFL score: 102/120 (R: 28/30, L: 29/30, S: 22/30, W: 23/30)
- TOEIC score: 860 (Golden certificate)