# Hsuan-Ling Lin

10F, No. 17, Shuiyuan Rd., Zhongzheng Dist., Taipei City 10086, Taiwan
+886-988064698 hsuanlinglin@gmail.com https://hsuanlinglin.github.io hsuan-ling-lin

## 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)