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
- CS-related coursework: Probability (93/100), Computer Networks (97/100), Data Structure (84/100), Computer Programming I (Introduction to Computers I), Linear Algebra (Engineering Mathematics II), Computer Organization

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 Taipei University of Technology   Taipei, Taiwan
Department of Computer Science and Information Engineering   Feb. 2019 - June 2019
- Course taken: Discrete Mathematics
- Grade: 97/100 (3 credits)

National Taiwan University   Taipei, Taiwan
Information System Training Program, Department of Computer Science and Information   June 2018 - Aug. 2018
- Course taken: Data Structure and Advanced C++ Programming

WORK EXPERIENCE

MStar Semiconductor, Inc.   Taipei, Taiwan
Software Engineer   Dec. 2016 - Dec. 2018
- MStar Semiconductor was a global leading fabless IC design company (acquired by MediaTek Inc. in 2019).
- FPGA verification:
  - Video encoder (JPEG/H.264/HEVC): implemented test features in encoder software 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.
- Cooperated with hardware team to develop High-Level Synthesis (HLS) in Google AV1 inverse-transform code.
- Wrote shell scripts and batch files for executing auto-regression tests to get overall coverage.
- 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 (UDMA tool) to access hardware register and dump DRAM.

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.

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.

EXTRACURRICULAR ACTIVITIES

National Central University, Association of Alumni of High Schools in Chang-Hua Area   Taoyuan, Taiwan
Vice President   Sept. 2010 - Sept. 2011
- Planned and executed one-week educational camp for disadvantaged elementary school students from aboriginal villages
- Led members to help Association get more exposure by organizing activities such as a local snacks fair.

National Central University, Communication Engineering Summer Camp   Taoyuan, Taiwan
Activities Coordinator   Sept. 2009 - Sept. 2010
- Introduced high school students to communication engineering in camp activities.

SKILLS

Programming Languages	C, C++, PHP
Tools	Git, shell script, batch, Unix, MySQL
Protocols	MQTT, HTTP
Packages	C++ Windows Form, bootstrap
Industry Knowledge	Video codec, FPGA verification

LANGUAGES

Mandarin: Native
English: Fluent
Test Scores
- TOEFL score: 102/120 (R: 28/30, L: 29/30, S: 22/30, W: 23/30)
- GRE score: 327/340 (V: 160/170, Q: 167/170, AW: 3.0)