

Hsuan-Ling Lin

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EDUCATION

National Tsing Hua University

Hsinchu, Taiwan

M.S. in Communication Engineering

Sept. 2013 - July. 2016

- Thesis : Implementation of MQTT Protocol for Content Management Servers and Linux-Based Embedded Systems
- GPA : 3.96/4.3
- Relevant coursework : Queuing Theory
- MOOC course taken : LoRa IoT wireless communication technology and application

National Central University

Taoyuan, Taiwan

B.S. in Communication Engineering

Sept. 2009 - June. 2013

- Academic Excellence Award (for ranking top three student in class in semester) 2011 First Semester
- Relevant coursework : Probability, Data Structure, Computer Programming I(Introduction to Computers I), Computer Network, Signal and System, Linear Algebra(Engineering Mathematics II), Computer Organization

ADDITIONAL LEARNING EXPERIENCE

National Taiwan University, Department of Computer Science and Information
Information System Training Program

Taipei, Taiwan

June. 2018 - Aug. 2018

- Course taken : Data Structure and Advanced C++ Programming

WORK EXPERIENCE

MStar Semiconductor, Inc.

Taipei, Taiwan

Software Engineer

Dec. 2016 - Present

- MStar is a global leading fabless semiconductor company in Application Specific ICs
- Video encoder (JPEG/H.264/HEVC) FPGA verification : Developed and implemented features for verifying hardware(HW) IP functions in encoder c-model, and accomplished four testing item criteria: CRC, compressed bit-stream, byte-count and decompressed data.
- Video decoder (Google AV1) FPGA verification : Focused on HW AV1 IQ/IT/RC verification, including develop HW IQ/IT/RC patterns through AV1 cmodel and supported HW decoded Allegro bit-stream. Besides, tested Netflix and YouTube stream.
- LZMA encoder (HW oriented Dictionary encoding) FPGA verification : Designed the testing flow and built up the testing model to verify single mode and CMDQ mode and accomplished four testing item criteria: CRC, Compressed bit-stream, byte-count and decompressed data.
- Performed routine checks in FPGA verification and designed auto-test script and patterns for routine regression.
- Researched and developed an algorithm for compressing AV1 motion vector, and it improved the compression rate up to around 35%.
- Developed GUI Tool to decode Multi-Format coding and display a variety of YUV format, and designed and optimized user-interface more friendly.
- Cooperated with HW team to develop High-Level synthesis(HLS) in AV1 IT code, and implemented IADST/IDCT C code to be HW architecture alike.
- Identified and analyzed issues and supported HW debug.

PROJECT EXPERIENCE

National Tsing Hua University Library Wireless Tour Guide program.

Sept. 2015 - July. 2016

Developed wireless tour guide system for NTHU library

- Implemented the collaboration between content management server and Linux-based embedded system via the MQTT protocol, which is standardized by OASIS.

- Created the web application as geographic user-interface(GUI) on server-side, and thus admin could operate the system more easily.
- Designed MQTT topics/messages and the shell scripts in the Linux-based embedded systems to achieve automatic configuration of embedded systems, and monitoring whether the guide nodes connecting and analyzing the log file.
- System included four mainly features: Initializing settings, Floors management, Monitoring guide nodes, Statistics.

CatchUp: A cloud platform for meeting minutes

Sept. 2011 - July. 2012

Developed a productive platform to provide commercial features : meeting minutes, exchanging messages, location tracking and file transferring. Also, synchronizing all the related co-workers information.

- Integrated software and embedded system(RTL 8196c).
- Implemented the server-side through PHP+MySQL.
- Created database and designed the relational data.

SKILLS

Programming Languages	C, C++, PHP
Tools	GIT, shell script, batch, LaTeX, High-Level Synthesis
Potocols	MQTT, HTTP
Package	Windows Form C++, 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)

AWARD

MStar Semiconductor Inc., Research and Development Division

- **MStar Short Term Reward *2** (for recognizing the outstanding employee)

Oct. 2017 and May. 2018

National Central University, College of Electrical Engineering & Computer Science

Senior Project Contest

Sept. 2011 - July. 2012

- **1st Prize**
- **the Best Popularity Prize**

EXTRACURRICULAR ACTIVITIES

National Central University, Chang-Hua Area Alumni Association

Taoyuan, Taiwan

Vice President

Sept. 2010 - Sept. 2011

- Planned and executed one-week educational-camp for disadvantaged elementary school students from aboriginal villages from aboriginal villages
- Led members to help the association get more exposure by organizing activities.

National Central University, Engineering Summer Camp for High School Students

Taoyuan, Taiwan

Activities Coordinator

Sept. 2009 - Sept. 2010

- Helped high-school students for knowing more communication engineering through one week summer camp