Curriculum Vitae

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- **Education**

2018 -	**Ph.D. in Electrical Computer Engineering** Carnegie Mellon University Advised by Radu Marculescu
2017 - 2018	**Master of Science in Electrical Engineering (Drop-out)** National Tsing Hua University (NTHU), Hsinchu, Taiwan Laboratory for Reliable Computing (LaRC)
2014 - 2017	**Bachelor of Science in Electrical Engineering** National Tsing Hua University (NTHU), Hsinchu, Taiwan Class Representative GPA: 3.82/4.3 (Overall) 4.02/4.3 (Major)

- **International Competition**

2016 - 2017	**IEEE Signal Processing Cup - Real-Time Beat Tracking Challenge** Implemented the signal processing algorithm into embedded system Hardware designer, responsible for system design (Raspberry + Arduino), task parallelization, and protocol design. Top 33% among 21 teams
2016	**Eurobot 2016** An international robotic competition over the world DIT Robotics, including 9 mechanical engineering students, 1 physic student and 1 EE student. Entered finals with 7^{th} grade Served as Software engineering leader, responsible for embedded system design, protocol design and program testing

- **Resarch Project**

2019 -	**Human Activity Recognition** Use metric-based machine learning model to solve the concept shift Target conference: ICCPS ‘20
2019 -	**Fine-grain Data Selection in Semi-supervised Learning** Modify self-training algorithm on semi-supervised setting Research project in *Introduction to Machine Learning (10-701)*
2018 -	**Group-aware Cache Coherence Protocol** Design a protocol to reduce scalability cost in multi-processor system Evaluated by PARSEC-3.0's blackscholes program Research project in *Computer Architecture & Systems (18-742)*
2018 -	**Triple-DES Optimization on a CPU** Optimize an algorithm on a target Intel processor Re-schedule operation based on processor parameters
2018 -	**System Generation with Safety DSL** Design a safety language to describe common-used safety technique Generate an ESL platform to verify and evaluate the system
2017 -	**Research topic – Hardware Design with an Image Processing DSL** Used domain-specific language, Halide, to generate SystemC code Designed a platform to simulate the target SystemC code Use Vivado-HLS to verify the simulation result of performance
2015 - 2016	**Research topic – SPICE** Research project for the course *Special Topic on Implementation* Write a SPICE-like program using C and numerical analysis to simulate circuit behavior Designed C data structure of every electrical element and calculating matrix, using structure and pointer only

- **Project Experience**
  - Architecture design

2017	Fall	***3-stage pipeline LU-decomposition accelerator design***	
		Language/tool	Chisel 3 (HDL), Open Virtual Platform (OVP)
		Detail	Design a 3-stage pipeline LU-decomposition accelerator design in RTL-level
2014	Fall	***MCS-51 System***	
		Language/tool	MCU 8051 IDE, hyperterminal
		Detail	Build a system on breadboard, including processor (MCS-51), 16KB SRAM
			Program from hyperterminal through RS-232
			Write 8051 assembly and verify on the system
2014	Spring	***Gambling game on FPGA***	
		Language/tool	Verilog, Vivado ISE Design Suite
		Detail	Prototype on FPGA

  - Architecture simulation

2017	Fall	***SimpleScalar in Advanced Computer Architecture***	
		Language/tool	SimpleScalar
		Detail	Implement cache replacement policy DRRIP
			Implement branch predictor Alpha 21264
2017	Fall	***Tomasulo algorithm simulator***	
		Language/tool	C language
		Detail	Simulate Tomasulo in C and output temporal result and efficient IPC

  - Embedded System

2019	Fall	***FitFeet – Smart shoes detection system***	
		Language/tool	Particle Argon, MQTT
		Detail	Build a sensor system on shoes
			Send via MQTT and classify on cloud by MLP
2017	Fall	***World of Tanky***	
		Language/tool	NXP K66F (mbed)
		Detail	Use Wi-Fi and BT to build a control system

- **Work Experience**
  - Teaching assistant

2018	Spring	***Embedded System Lab***
		Major TA in 7 TAs
		Undergraduate experiment course
2017	Fall	***Advanced Computer Architecture***
		Postgraduate course
		Design a project using C to simulate Tomasulo algorithm
2017	Spring	***Embedded System Lab***
		Undergraduate experiment course
2016	Fall	***Introduction of C Programming***
		Undergraduate survey course for freshman
		Taught about Linux command and vim editor

  - Internship

2016	**Industrial Technology Research Institute of Taiwan (ITRI)**
	Information and communications research laboratories
	Installed Android 5.1 on Odroid-C2, a 64-bit quad-core SBC
	Ported Secure Virtual Mobile Platform (SVMP) on Android 5.1

- **Extracurricular Activities**
  - Tennis
    i NTHU tennis team
    ii NTHU EE team

2017	Border Cup 1st prize
2017	EE Cup 4th prize
2016	Crazy Bamboo 1st prize
2016	EE Cup 2nd prize
2015	EE Cup quarter final
2014-2015	Team leader