# CHING-YI LIN

(412)225-7345

chingyil@andrew.cmu.edu

## EDUCATION

**Ph.D. Candidate in Electrical Computer Engineering**          *August 2018 - Present*
Carnegie Mellon University, Pittsburgh
Advisor: Marc Dandin (2020-), Daniel Bankman (2020), Radu Marculescu (2018-2019)
Qualifying exam passed on May 2021
Prospectus exam passed on January 2023
GPA: 3.58/4.0 (until Spring 2023)

**M.S. in Electrical Computer Engineering**          *August 2018 - December 2022*
Carnegie Mellon University, Pittsburgh

**M.S. in Electrical Engineering (Incomplete)**          *August 2017 - June 2018*
National Tsing Hua University (NTHU), Hsinchu, Taiwan
Advised by Jing-Jia Liou

**B.S. in Electrical Engineering**          *August 2013 - June 2017*
National Tsing Hua University (NTHU), Hsinchu, Taiwan
Class Representative
GPA: 3.82/4.3 (Overall) 4.02/4.3 (Major)

## BOOK AND BOOK CHAPTERS

**CMOS Bioelectronics: Current and Future Trends**          *December 2022*
A chapter in *Bioelectronics: Materials, Technologies, and Emerging Applications*, CRC Press, 2022
ISBN: 9781032203133

## PUBLICATION

**Measuring and modeling macrophage proliferation in a lab-on-CMOS capacitance sensing microsystem**          *May 2023*
Kyle Smith, Ching-Yi Lin, Yann Gilpin, Elizabeth Wayne, Marc Dandin
2023 Frontiers in Bioengineering and Biotechnology

**Non-Linear CNN-Based Read Channel for Hard Disk Drive With 30% Error Rate Reduction and Sequential 200-Mbits/s Throughput in 28-nm CMOS**          *February 2023*
Yuwei Qin, Ruben Purdy, Alec Probst, Ching-Yi Lin, Jian-Gang (Jimmy) Zhu
2023 IEEE Journal of Solid-State Circuits (JSSC)

**Tracking the Effects of Tumor Treating Fields on Human Breast Cancer Cells in vitro Using a Capacitance Sensing Lab-on-CMOS Microsystem**          *October 2022*
Yann Gilpin, Ching-Yi Lin, Mats Forssell, Siyang Zheng, Pulkit Grover, Marc Dandin
2022 29th IEEE International Conference on Electronics, Circuits and Systems (ICECS)

**ASIC Implementation of Non-linear CNN-based Data Detector for TDMR System in 28nm CMOS at 200Mbits/s Throughput**          *September 2022*
Yuwei Qin, Ruben Purdy, Alec Probst, Ching-Yi Lin, Jian-Gang (Jimmy) Zhu
IEEE Transactions on Magnetics

**Non-linear CNN-based Read Channel for Hard Disk Drive with 30% Error Rate Reduction and Sequential 200Mbits/second Throughput in 28nm CMOS**   *June 2022*
Yuwei Qin, Ruben Purdy, Alec Probst, Ching-Yi Lin, Jian-Gang (Jimmy) Zhu
2022 IEEE Symposium on VLSI Technology and Circuits

**Model Personalization for Human Activity Recognition**   *March 2020*
Ching-Yi Lin, Radu Marculescu
The Fourth International Workshop on Smart Edge Computing and Networking (SmartEdge 2020)

**Memory- and Communication-Aware Model Compression for Distributed Deep Learning Inference on IoT**   *October 2019*
Kartikeya Bhardwaj, Ching-Yi Lin, Anderson Sartor, Radu Marculescu
ACM Transactions on Embedded Computing Systems (TECS)

## COMPETITION

**IEEE SPCUP**   *March 2017*
*Hardware Designer*

· *Excellent video and entertaining concept* Award
· Implemented the signal processing algorithm into embedded system
· Responsible for system design (Raspberry + Arduino), task parallelization, and protocol design.

**Eurobot 2016**   *June 2016*
*Software Team Leader*

· An international robotic competition over the world.
· DIT Robotics, including 9 mechanical engineering students, 1 physic student and 1 EE student.
· Responsible for embedded system design and protocol design.

## WORK EXPERIENCE

**TA in *Analog Integrated Circuit Design***   *Fall 2023*
· CMU course number: 18-623
· Lecturer: Marc P. Dandin

**TA in *Intro to ML for Engineers***   *Spring 2022*
· CMU course number: 18-661
· Lecturer: Carlee Joe-Wong

**Digital Circuit Design Intern**   *Summer 2021*
*Apple*
· Customized SRAM cell design and evaluation in schematic-level

**TA in *Embedded System Lab***   *Spring 2018*
*Major TA among 7 TAs*
· Undergraduate experiment course
· Lecturer: Jing-Jia Liou
· Design material for on-device computer vision

**TA in *Advanced Computer Architecture*** *Fall 2017*

· Graduate-level course
· Lecturer: Yarsun Hsu
· Design a project using C to simulate Tomasulo algorithm

**TA in *Embedded System Lab*** *Spring 2017*
*Undergraduate teaching assistant*

· Undergraduate experiment course
· Lecturer: Jing-Jia Liou

**TA in *Introduction of C Programming*** *Fall 2016*
*Undergraduate teaching assistant*

· Undergraduate-level introduction course
· Lecturer: Mi-Chang Chang

**Industrial Technology Research Institute of Taiwan (ITRI)** *Summer 2016*
*Software Engineer*

· 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

## EXTRA CURRICULAR

**Taiwanese Scholar Society** *2019-2022*

· President in 2019-2020
· Vice president in 2020-2021
· Vice president in 2021-2022

**NTHU Men's Tennis Team** *2015-2017*

**NTHU EE Tennis Team** *2013-2018*

· Team Leader in 2014-2015
· Team Officer in 2015-2018