CHING-YI LIN

EDUCATION

Ph.D. Candidate in Electrical Computer Engineering August 2018 - Present Carnegie Mellon University, Pittsburgh Advisor: Marc Dandin Expecting graduation on September 2024 Prospectus exam passed on January 2023 Qualifying exam passed on May 2021 GPA: 3.58/4.0 (until Spring 2024) M.S. in Electrical Computer Engineering Carnegie Mellon University, Pittsburgh GPA: 3.58/4.0

B.S. in Electrical Engineering

National Tsing Hua University (NTHU), Hsinchu, Taiwan **Class** Representative GPA: 3.82/4.3 (Overall) 4.02/4.3 (Major)

HONORS AND AWARDS

CMLH Translational Fellowship	2024
Towards Long-term Data-driven Assays with Non-Visual Sensors	
Sponsored by the Center for Machine Learning and Health (CMLH)	
Carnegie Institute of Technology Dean's Fellow	2018

BOOK AND BOOK CHAPTERS

Ching-Yi Lin, Md Sakibur Sajal, Yann Gilpin, Fahimeh Dehghandehnavi, Anna Batueva, Kai-Chun Lin, Nicole McFarlane, and Marc Dandin. "CMOS bioelectronics: Current and future trends." Bioelectronics (2022): 93-107.

CONFERENCE AND JOURNAL PAPERS

Ching-Yi Lin and Marc Dandin. "Machine Learning Identification and Classification of Cancer Cell Behaviors in a Lab-on-CMOS Capacitance Sensing Platform." TechRxiv. May 30, 2024. DOI: 10.36227/techrxiv.171710162.20881219/v1

Kyle Smith, Ching-Yi Lin, Yann Gilpin, Elizabeth Wayne, and Marc Dandin. "Measuring and modeling macrophage proliferation in a lab-on-CMOS capacitance sensing microsystem." Frontiers in Bioengineering and Biotechnology 11 (2023): 1159004.

Yuwei Qin, Ruben Purdy, Alec Probst, Ching-Yi Lin, and Jian-Gang Zhu. "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." IEEE Journal of Solid-State Circuits 58, no. 4 (2023): 1094-1105.

August 2018 - December 2022

August 2013 - June 2017

Yann Gilpin, **Ching-Yi Lin**, Mats Forssell, Siyang Zheng, Pulkit Grover, and Marc Dandin. "Tracking the effects of tumor treating fields on human breast cancer cells in vitro using a capacitance sensing lab-on-CMOS microsystem." In 2022 29th IEEE International Conference on Electronics, Circuits and Systems (ICECS), pp. 1-4. IEEE, 2022.

Yuwei Qin, Ruben Purdy, Alec Probst, **Ching-Yi Lin**, and Jian-Gang Zhu. "ASIC Implementation of Nonlinear CNN-Based Data Detector for TDMR System in 28 nm CMOS at 200 Mbits/s Throughput." IEEE Transactions on Magnetics 59, no. 3 (2022): 1-8.

Yuwei Qin, Ruben Purdy, Alec Probst, **Ching-Yi Lin**, and Jian-Gang Jimmy Zhu. "Non-linear CNNbased read channel for hard disk drive with 30% error rate reduction and sequential 200Mbits/second throughput in 28nm CMOS." In 2022 IEEE Symposium on VLSI Technology and Circuits (VLSI Technology and Circuits), pp. 206-207. IEEE, 2022.

Ching-Yi Lin, and Radu Marculescu. "Model personalization for human activity recognition." In 2020 IEEE international conference on pervasive computing and communications workshops (PerCom Workshops), pp. 1-7. IEEE, 2020.

Kartikeya Bhardwaj, **Ching-Yi Lin**, Anderson Sartor, and Radu Marculescu. "Memory-and communicationaware model compression for distributed deep learning inference on IoT." ACM Transactions on Embedded Computing Systems (TECS) 18, no. 5s (2019): 1-22.

PATENTS

Marc Dandin, and Ching-Yi Lin. "System and Method to Measure CAR-T cell quality," U.S. Patent #0366873, November 2023

ACADEMIC EXPERIENCE

Digital Circuit Design Intern Apple	Summer 2021
WORK EXPERIENCE	
• TA in Introduction of C Programming	Fall 2016
• TA in Embedded System Lab	Spring 2017
• TA in Advanced Computer Architecture	Fall 2017
\cdot TA in Embedded System Lab	Spring 2018
\cdot TA in Intro to ML for Engineers	Spring 2022
· TA in Analog Integrated Circuit Design	Fall 2023

Summer 2016

- · Customized SRAM cell design and evaluation in schematic-level
- $\cdot\,$ Transmission line modeling and optimization

Industrial Technology Research Institute of Taiwan (ITRI) Software Engineer

- \cdot Information and communications research laboratories
- · Installed Android 5.1 on Odroid-C2, a 64-bit quad-core SBC
- $\cdot\,$ Ported Secure Virtual Mobile Platform (SVMP) on Android 5.1

COMPETITION

IEEE SPCUP

Hardware Designer

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

Eurobot 2016

Software Team Leader

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

EXTRA CURRICULAR

 \cdot 2018 ELE Cup 4th place

Last updated: June 12, 2024 https://www.andrew.cmu.edu/user/chingyil/docs/cv_chingyi.pdf

March 2017

June 2016