

TING-WU (RUDY) CHIN

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RESEARCH INTERESTS

Resource-constrained Deep Neural Network Design, Computer Vision, and Machine Learning

EDUCATION

Carnegie Mellon University

August 2017 - Present

Ph.D., Electrical and Computer Engineering

Advisor: Diana Marculescu

National Chiao Tung University

2011-2017

M.S. in Computer Science, Advisor: Shiao-Li Tsao

B.S. in Computer Science

PUBLICATIONS

Preprint

- **T. Chin**, C. Zhang and D. Marculescu, “Layer-compensated Pruning for Resource-constrained Convolutional Neural Networks,” in arXiv preprint, 2018.

Conference

- D. Stamoulis, **T. Chin**, A. K. Prakash, H. Fang, S. Sajja, M. Boggar and D. Marculescu, “Designing Adaptive Neural Networks for Energy-Constrained Image Classification,” in Proceedings of the 37th International Conference on Computer-Aided Design (ICCAD), IEEE Press, 2018.

Journal

- **T. Chin**, C. Yu, M. Halpern, H. Genc, S. Tsao and V. J. Reddi, “Domain-Specific Approximation for Object Detection,” in IEEE Micro, vol. 38, no. 1, pp. 31-40, January/February 2018.
- H. Genc, Y. Zu, **T. Chin**, M. Halpern and V. J. Reddi, “Flying IoT: Toward Low-Power Vision in the Sky,” in IEEE Micro, vol. 37, no. 6, pp. 40-51, November/December 2017.

EXPERIENCE

Microsoft Research

May 2018 - August 2018

Research Intern (Mentor: Cha Zhang)

Redmond, WA

- Developed a novel algorithm for filter pruning in convolution neural networks that is **8x** faster in searching a better pruning solution compared to prior art.

AILabs.tw

May 2017 - August 2017

Software Engineering Intern (Mentor: Jie-Zhi Cheng)

Taipei, Taiwan

- Dockerized a face swapping open source project and contributing back to upstream by fixing bugs.
- Used deep learning to accelerate the face swapping application by 20x.

Trinity Lab, UT Austin

August 2016 - October 2016

Visiting Student (Mentor: Vijay Janapa Reddi)

Austin, TX

- Analyzed the trade-off brought by image resolution on both the accuracy and speed of object detectors.
- Analyzed the performance, power, and accuracy of UAV running object detectors with various hardware and software.

ACHIEVEMENTS

3 rd Place for Siemens FutureMakers Challenge at CMU	<i>Spring 2018</i>
2 nd Place Course Project for Energy-aware Computing (18743) at CMU	<i>Fall 2018</i>
MediaTek Domestic PhD Fellowship (One of five recipients)	<i>Fall 2016</i>
Award of Outstanding Teaching Assistant, NCTU	<i>Fall 2016</i>
Outstanding Award in Programming Language course, NCTU	<i>Spring 2012</i>

COURSE WORK

- Machine Learning •Convex Optimization •Deep Reinforcement Learning and Control
- Advanced Multimodal Machine Learning •Energy-aware Computing

TEACHING EXPERIENCE

Hardware Architecture for Machine Learning	Fall 2018
<i>Leading TA</i>	<i>Carnegie Mellon University</i>
– Bootstrapped the materials including slides and homework for the class that is offered for the first time.	
Operating System Design and Implementation	Fall 2015
<i>Leading TA</i>	<i>National Chiao Tung University</i>
– Helped design the homework and gave recitation lectures.	