

Rui LIN

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EDUCATION

The University of Hong Kong

Sept. 2018 - Sept. 2022

Ph.D. in the Dept. of Electrical and Electronic Engineering.

Supervised by Prof. Ngai Wong and Prof. Graziano Chesi.

Wuhan University

Sept. 2014 - Jun. 2018

B.S. in the School of Mathematics and Statistics.

GPA: 3.52/4.00.

PUBLICATIONS

JOURNAL

- Xiao, X., Wang, J., **Lin, R.**, Hill, D. J., & Kang, C. (2020). Large-scale aggregation of prosumers toward strategic bidding in joint energy and regulation markets. *Applied Energy*, 271, 115159. [\[PDF\]](#)
- Tao, C.*, **Lin, R.***, Chen, Q., Zhang, Z., Luo, P., & Wong, N. (2021). FAT: Learning Low-Bitwidth Parametric Representation via Frequency-Aware Transformation. *IEEE Transactions on Neural Networks and Learning Systems* (to be appeared). arXiv preprint arXiv: 2102.07444. [\[PDF\]](#) [\[Codes\]](#)
- Mao, R., Wen, B., Arman, K., Zhao Y., Ann Franchesca, L., **Lin, R.**, Wong, N., Michael, N., Hu, X., Sheng, X., Catherine, G., John Paul, S. & Li, C. (2022). Experimentally Realized Memristive Memory Augmented Neural Network. *Nature Communications*. [\[PDF\]](#)

CONFERENCE

- Ran, J., **Lin, R.**, Li, C., Zhou, J., Wong, N. (2023). PECAN: A Product-Quantized Content Addressable Memory Network. *Design, Automation and Test in Europe Conference (DATE'23)* [\[PDF\]](#)
- **Lin, R.***, Ran, J.*, Chiu, K.H., Chesi, G., Wong, N.* (2021). Deformable Butterfly: A Highly Structured and Sparse Linear Transform. *Proceedings of the Advances in Neural Information Processing Systems (NeurIPS'21)* [\[PDF\]](#)[\[Codes\]](#)[\[Slides\]](#)[\[Poster\]](#)
- **Lin, R.***, Ran, J.*, Wang, D., Chiu, K. H., & Wong, N. (2021). EZCrop: Energy-Zoned Channels for Robust Output Pruning. In proceeding of the Winter Conference on Applications of Computer Vision (WACV'22).[\[PDF\]](#)[\[Codes\]](#)[\[Slides\]](#)[\[Poster\]](#)
- Cheng, Y., **Lin, R.**, Zhen, P., Hou, T., ... & Wong, N. (2021). FASSST: Fast Attention Based Single-Stage Segmentation Net for Real-Time Instance Segmentation. In proceeding of the Winter Conference on Applications of Computer Vision (WACV'22).[\[PDF\]](#)[\[Slides\]](#)[\[Poster\]](#)
- **Lin, R.**, Cong, C., & Wong, N. (2022). Coarse to Fine: Image Restoration Boosted by Multi-Scale Low-Rank Tensor Completion. In 2022 26th International Conference on Pattern Recognition (ICPR'22), IEEE. [\[PDF\]](#)[\[Codes\]](#)
- Yuan, R.*, **Lin, R.***, Ran, J., Liu, C., Tao, C., Wang, Z., Li, C. & Wong, N*. (2021). BATMANN: A Binarized-All-Through Memory-Augmented Neural Network for Efficient In-Memory Computing. In proceeding of IEEE 14th International Conference on ASIC (ASICON'21). [\[PDF\]](#)[\[Codes\]](#)[\[Slides\]](#)
- Ran, J.*, **Lin, R.***, So, H. K., Chesi, G., & Wong, N. (2021). Exploiting Elasticity in Tensor Ranks for Compressing Neural Networks. In 2020 25th International Conference on Pattern Recognition (ICPR'20) (pp. 9866-9873). IEEE. [\[PDF\]](#)[\[Codes\]](#)[\[Slides\]](#)
- **Lin, R.**, Ko, C. Y., He, Z., Chen, C., Cheng, Y., Yu, H., ... & Wong, N. (2020). HOTCAKE: Higher Order Tucker Articulated Kernels for Deeper CNN Compression. In 2020 IEEE 15th Inter-

- national Conference on Solid-State & Integrated Circuit Technology (ICSICT'20) (pp. 1-4). IEEE. [\[PDF\]](#)[\[Codes\]](#)[\[Slides\]](#)
- o Ko, C. Y., **Lin, R.**, Li, S., & Wong, N. (2019). MiSC: mixed strategies crowdsourcing. Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence Main track (IJCAI'19) (pp. 1394-1400). [\[PDF\]](#)[\[Codes\]](#)[\[Slides\]](#)

* Equal Authorship Statement

PROFESSIONAL ACTIVITIES

TALKS

- IJCAI 2019 Workshop “Humanizing AI”** Aug. 2019
An invited lightning talk about crowdsourcing
- AI Chip Center for Emerging Smart Systems (ACCESS) Seminar** Feb. 2022
An invited talk about a newly proposed linear transform
- Tsinghua University “AI TIME”** Mar. 2022
An invited talk about a newly proposed linear transform

TEACHING

- The University of Hong Kong** Fall 2019, Fall 2020, Fall 2021
MATH1853: Linear Algebra, Probability and Statistics Course Tutor
Selected Materials: [Slides-1](#), [Slides-2](#), [Slides-3](#)
- Wuhan University** Spring 2018
Advanced Algebra and Analytic Geometry Course Tutor

DUTIES

- Part Time Research Assistant** 2022.6 - 2022.8
The University of Hong Kong
Help with additional projects including my regular research tasks
- Conference Reviewer** 2021
NeurIPS'22, ICML'22, CVPR'22, ICPR'22, CVPR'21, ICCV'21
- Contest Problem Designer & Judge** 2021
[EDAthon'21](#) Problem 2
EDAthon is a whole-day programming contest in Electronic Design Automation (EDA)

RESEARCH INTERESTS

- o Neural network compression.
- o Tensor applications for computation & memory cost reduction.
- o Transformer in computer vision field.
- o Model robustness analysis.

AWARDS AND SCHOLARSHIPS

- Postgraduate Scholarship (PGS)** 2018 - 2022
The University of Hong Kong
- French Learning Scholarship in the School of Mathematics and Statistics** 2015, 2016, 2017
Wuhan University
- Winter Exchange Program Scholarship to University of Cambridge** 2016

ADDITIONAL

- **Programming Languages:** Python, MATLAB, R.
- **Languages:** Mandarin (native), English (fluent), Cantonese (conversational), French (basic).