

Rui LIN

☎ +852-57492271 • ✉ ruilin0212@gmail.com • 🌐 rlin27.github.io

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

- Huang, B., Tao, C., **Lin, R.**, Wong, N. (2023). Frequency Regularization for Improving Adversarial Robustness. In proceedings of the 2nd International Workshop on Practical Deep Learning in the Wild at the AAAI Conference on Artificial Intelligence (Workshop at AAAI'23) [\[PDF\]](#)
- 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.**, 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. [\[PDF\]](#)[\[Codes\]](#)
- **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).[\[PDF\]](#)[\[Slides\]](#)[\[Poster\]](#)
- 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 International Conference on Solid-State & Integrated Circuit Technology (ICSICT'20) (pp. 1-4). IEEE. [\[PDF\]](#)[\[Codes\]](#)[\[Slides\]](#)
 - 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 |
| <i>An invited lightning talk about crowdsourcing</i> | |
| AI Chip Center for Emerging Smart Systems (ACCESS) Seminar | Feb. 2022 |
| <i>An invited talk about a newly proposed linear transform</i> | |
| Tsinghua University “AI TIME” | Mar. 2022 |
| <i>An invited talk about a newly proposed linear transform</i> | |

TEACHING.....

- | | |
|---|--|
| The University of Hong Kong | Fall 2019, Fall 2020, Fall 2021 |
| <i>MATH1853: Linear Algebra, Probability and Statistics</i> | |
| <i>Selected Materials: Slides-1, Slides-2, Slides-3</i> | |
| Wuhan University | Spring 2018 |
| <i>Advanced Algebra and Analytic Geometry</i> | |
| | <i>Course Tutor</i> |

DUTIES.....

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

RESEARCH INTERESTS

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

AWARDS AND SCHOLARSHIPS

- | | |
|---------------------------------------|--------------------|
| Postgraduate Scholarship (PGS) | 2018 - 2022 |
| <i>The University of Hong Kong</i> | |

French Learning Scholarship in the School of Mathematics and Statistics <i>Wuhan University</i>	2015, 2016, 2017
Winter Exchange Program Scholarship to University of Cambridge <i>Wuhan University</i>	2016
Third-class Scholarship for First-year Freshmen <i>Wuhan University</i>	2014

ADDITIONAL

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