

# Rui LIN

☎ +852-57492271 • ✉ [ruilin0212@gmail.com](mailto:ruilin0212@gmail.com) • 🌐 [rlin27.github.io](https://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) [\[PDF\]](#)[\[Codes\]](#)
- 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.....

- |   |                  |
|---|------------------|
| <b>IJCAI 2019 Workshop “Humanizing AI”</b>  | <b>Aug. 2019</b> |
| <i>An invited lightning talk about crowdsourcing</i>                              |                  |
| <b>AI Chip Center for Emerging Smart Systems (<a href="#">ACCESS</a>) Seminar</b> | <b>Feb. 2022</b> |
| <i>An invited talk about a newly proposed linear transform</i>                    |                  |
| <b>Tsinghua University “AI TIME”</b>  | <b>Mar. 2022</b> |
| <i>An invited talk about a newly proposed linear transform</i>                    |                  |

### TEACHING.....

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

### DUTIES.....

- |   |                        |
|---|------------------------|
| <b>Part Time Research Assistant</b>   | <b>2022.6 - 2022.8</b> |
| <i>The University of Hong Kong</i>  |                        |
| <i>Help with additional projects including my regular research tasks</i>                |                        |
| <b>Conference Reviewer</b>  | <b>2021</b>            |
| <i>NeurIPS'22, ICML'22, CVPR'22, ICPR'22, CVPR'21, ICCV'21</i>                          |                        |
| <b>Contest Problem Designer &amp; Judge</b>   | <b>2021</b>            |
| <a href="#">EDAthon'21</a>  | <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

---

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

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

## ADDITIONAL

---

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