

# 林 睿

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## 教育经历

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### 香港大学

2018.9 - 2022.9

于 电子电气工程学院 攻读 博士学位

导师: [Prof. Ngai Wong](#) 与 [Prof. Graziano Chesi](#).

### 武汉大学

2014.9 - 2018.6

于 数学与统计学院 获得 理学学士学位

绩点: 3.52/4.00.

## 出版物

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### 期刊

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- 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*. [\[PDF\]](#)

### 会议

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- 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

## 学术活动

### 讲座

- |   |               |
|---|---------------|
| <b>IJCAI 2019 研讨会 “Humanizing AI”</b>                         | <b>2019.8</b> |
| 一个关于众包的特邀讲座   |               |
| <b>AI Chip Center for Emerging Smart Systems (ACCESS) 研讨会</b> | <b>2022.2</b> |
| 一个关于新提出的线性变换的特邀演讲   |               |
| <b>清华大学 “AI TIME”</b>   | <b>2022.5</b> |
| 一个关于新提出的线性变换的特邀演讲   |               |

### 教学

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| <b>香港大学</b>  | <b>2019 秋季学期, 2020 秋季学期, 2021 秋季学期</b> |
| MATH1853: Linear Algebra, Probability and Statistics                                 | 课程助教                                   |
| 部分材料: <a href="#">Slides-1</a> , <a href="#">Slides-2</a> , <a href="#">Slides-3</a> |  |
| <b>武汉大学</b>  | <b>2018 春季学期</b>                       |
| 线性代数与解析几何  | 课程助教                                   |

### 担任职务

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|---------------|------------------------|
| <b>兼职研究助理</b> | <b>2022.6 - 2022.8</b> |
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香港大学

完成常规研究任务以外的项目

会议审稿人

2021 - 至今

NeurIPS'22, ICML'22, CVPR'22, ICPR'22, CVPR'21, ICCV'21

竞赛题目设计与裁判

2021

[EDAthon'21](#)

Problem 2

EDAthon 是电子设计自动化 (Electronic Design Automation (EDA)) 领域的一项全天编程竞赛

## 研究兴趣

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- 神经网络压缩 (Neural network compression)
- 计算和内存成本降低的张量应用 (Tensor applications for computation & memory cost reduction)
- 计算机视觉领域的 Transformer (Transformer in computer vision field)
- 模型的鲁棒性分析 (Model robustness analysis)

## 奖项与奖学金

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研究生奖学金 (Postgraduate Scholarship (PGS))

2018 - 至今

香港大学

数学与统计学院中法班奖学金

2015, 2016, 2017

武汉大学

英国剑桥大学冬季交换项目奖学金

2016

武汉大学

新生三等奖学金

2014

武汉大学

## 其他

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- 编程语言: Python, MATLAB, R.
- 语言能力: 普通话 (母语), 英语 (流利), 粤语 (日常交流), 法语 (基础).