

YAU, Chung Yiu

4th Year Ph.D. student, The Chinese University of Hong Kong
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RESEARCH INTERESTS

- ◇ Decentralized / distributed optimization for machine learning.
- ◇ Study optimization problems in modern deep learning such as large language models.

WORK EXPERIENCE

Applied Scientist Intern **June - Sep 2024**
Amazon Web Services, Santa Clara, California

- ◇ Research on large language model quantization, especially quantization aware training in the fine-tuning stage.

Applied Scientist Intern **June - August 2023**
Amazon Web Services, Shanghai

- ◇ Study the large batch dependence in contrastive learning for multi-modal training.
- ◇ Proposed a small batch sampling algorithm with [paper](#) presented at ICML 2024.

EDUCATION

Ph.D. Systems Engineering & Engineering Management **2021 - July 2025**
[The Chinese University of Hong Kong](#), Hong Kong

- ◇ Research in decentralized optimization with [Prof. Hoi-To Wai](#).
- ◇ Analyze the convergence of novel decentralized optimization algorithms, especially algorithms with communication compression.

B.Sc. Computer Science (First Class Honour, ELITE Stream) **2017 - 2021**
The Chinese University of Hong Kong, Hong Kong

- ◇ ELITE Stream Student Scholarship 2020-21, 2019-20, 2017-18, Faculty of Engineering
- ◇ College Head's List 2020/21, Shaw College
- ◇ Dean's List 2019/20, Faculty of Engineering
- ◇ Ms. Wong Wai-ling Scholarships 2017/18, Shaw College

ACADEMIC

Visiting Prof. Mingyi Hong's Research Group **Sep 2024**
Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota

Teaching Assistant in Undergraduate Courses **2021 - Present**
Department of Systems Engineering and Engineering Management, Faculty of Engineering, The Chinese University of Hong Kong

- ◇ ENGG2440 Discrete Mathematics for Engineers
- ◇ FTEC2101 Optimization Methods

Voluntary Reviewer at Conferences and Journals
ICLR 2025, TMLR, IEEE TAC, IEEE TSP

**RESEARCH
PUBLICATION**

- [1] Chung-Yiu Yau, Haoming Liu, and Hoi-To Wai. Fully stochastic primal-dual gradient algorithm for non-convex optimization on random graphs. *arXiv preprint arXiv:2410.18774*, 2024.
- [2] Chung-Yiu Yau, Hoi-To Wai, Parameswaran Raman, Soumajyoti Sarkar, and Mingyi Hong. EMC²: Efficient MCMC negative sampling for contrastive learning with global convergence. In *Proceedings of the 41st International Conference on Machine Learning*, pages 56966–56981. PMLR, 2024.
- [3] Chung-Yiu Yau and Hoi-To Wai. Fully stochastic distributed convex optimization on time-varying graph with compression. In *2023 62nd IEEE Conference on Decision and Control (CDC)*, pages 145–150. IEEE, 2023.
- [4] Xiaolu Wang, Chung-Yiu Yau, and Hoi-To Wai. Network effects in performative prediction games. In *International Conference on Machine Learning*, pages 36514–36540. PMLR, 2023.
- [5] Chung-Yiu Yau and Hoi-To Wai. Docom: Compressed decentralized optimization with near-optimal sample complexity. *Transactions on Machine Learning Research*, 2023.
- [6] Bingqing Song, Ioannis Tsaknakis, Chung-Yiu Yau, Hoi-To Wai, and Mingyi Hong. Distributed Optimization for Overparameterized Problems: Achieving Optimal Dimension Independent Communication Complexity. *Advances in Neural Information Processing Systems*, 2022.
- [7] Qiang Li, Chung-Yiu Yau, and Hoi-To Wai. Multi-agent Performative Prediction with Greedy Deployment and Consensus Seeking Agents. *Advances in Neural Information Processing Systems*, 2022.
- [8] Chung-Yiu Yau, Haoli Bai, Irwin King, and Michael R Lyu. DAP-BERT: Differentiable Architecture Pruning of BERT. In *International Conference on Neural Information Processing*, pages 367–378. Springer, 2021.