Chung-Yiu Yau

3rd Year Ph.D. student, The Chinese University of Hong Kong
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RESEARCH INTERESTS

My Ph.D. research focuses on distributed and decentralized optimization in machine learning and deep learning.

EDUCATION

Ph.D. System Engineering & Engineering Management   2021 - Present
The Chinese University of Hong Kong, Hong Kong

- Research in Distributed Optimization under supervision of Prof. Hoi-To Wai.
- Analyze the convergence of novel decentralized optimization algorithms, such as gradient tracking algorithm with compressed communication [1,3] and time-varying graph [1].
- Study the communication dependence of distributed optimization algorithms in overparameterized problems [4].
- Investigate the effect of distribution shift in decentralized optimization [2,5].

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

- Experience with deep learning and empirical study on neural network pruning during final year project [6].
- Cumulative GPA: 3.533/4.000;   Major GPA: 3.713/4.000

RESEARCH PUBLICATION

[1] 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.

[2] 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.

[3] Chung-Yiu Yau and Hoi To Wai. Docom: Compressed decentralized optimization with near-optimal sample complexity. *Transactions on Machine Learning Research*, 2023.

[4] 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.

[5] 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.

[6] 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.

SELECTED AWARDS

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

TEACHING ASSISTANT

Faculty of Engineering, The Chinese University of Hong Kong

- ENGG2440 Discrete Mathematics for Engineers
- FTEC2101 Optimization Methods