Jiaojiao Zhang

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Address: Room 905, ERB, The Chinese University of Hong Kong, Shatin, Hong Kong.

Research Interests

My research mainly focuses on the optimization theory and the development of provably efficient algorithms for distributed optimization.

Academic Experience

The Chinese University of Hong Kong (CUHK) Aug 2018 - Present
Ph.D. in Systems Engineering and Engineering Management
Advisor: Prof. Anthony Man-Cho So

Sun Yat-sen University (SYSU) Nov 2020 - Dec 2020
Visiting Ph.D. Student
Host Advisor: Prof. Qing Ling
Project: Stochastic quasi-Newton methods for decentralized learning

University of Science and Technology of China (USTC) Sep 2015 - Jun 2018
M.S. in Automation
Advisor: Prof. Shuang Cong

Harbin Engineering University Sep 2011 - Jun 2015
B.E. in Automation (**with honor**)

Publications (Google scholar)

1. **Jiaojiao Zhang**, Huikang Liu, Anthony Man-Cho So and Qing Ling. "A Penalty Alternating Direction Method of Multipliers for Convex Composite Optimization over Decentralized Networks." *IEEE Transactions on Signal Processing* (2021).
2. **Jiaojiao Zhang**, Qing Ling, and Anthony Man-Cho So. "A Newton Tracking Algorithm with Exact Linear Convergence for Decentralized Consensus Optimization." *IEEE Transactions on Signal and Information Processing over Networks* (2021).
3. **Jiaojiao Zhang**, Shuang Cong, Qing Ling, Kezhi Li and Herschel Rabitz. "Quantum State Filter with Disturbance and Noise." *IEEE Transactions on Automatic Control* (2019).
4. **Jiaojiao Zhang**, Shuang Cong, Qing Ling and Kezhi Li. "An Efficient and Fast Quantum State Estimator with Sparse Disturbance." *IEEE Transactions on Cybernetics* (2018).
5. **Jiaojiao Zhang**, Kezhi Li and Shuang Cong. "Efficient Reconstruction of Density Matrices for High Dimensional Quantum State Tomography." *Signal Processing* (2017).
6. Kezhi Li, **Jiaojiao Zhang**, and Shuang Cong. "Fast Reconstruction of High-qubit-number Quantum States via Low-rate Measurements." *Physical Review A* (2017).

Working Papers

1. **Jiaojiao Zhang**, Huikang Liu, Anthony Man-Cho So, and Qing Ling. "Variance-Reduced Stochastic Quasi-Newton Methods for Decentralized Learning: Part I." In preparation for submission to IEEE Transactions on Signal Processing.

2. **Jiaojiao Zhang**, Huikang Liu, Anthony Man-Cho So, and Qing Ling. "Variance-Reduced Stochastic Quasi-Newton Methods for Decentralized Learning: Part II." In preparation for submission to IEEE Transactions on Signal Processing.

Presentations

1. Variance-Reduced Stochastic Quasi-Newton Methods for Decentralized Learning
   — SIAM Conference on Optimization (OP2021)

2. A Penalty Alternating Direction Method of Multipliers for Decentralized Composite Optimization
   — 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)

3. A Newton tracking algorithm with exact linear convergence rate for decentralized consensus optimization
   — 2020 IEEE Conference on Decision and Control (CDC)

Professional Services

Reviewer for

- 2021 IEEE Conference on Decision and Control
- Systems and Control Letters
- IEEE Signal Processing Letters

Awards and Honors

Hong Kong Ph.D. Fellowship Scheme (*HKPFS*), CUHK	2018-2021
China National Scholarship, USTC	2017
Kwang-Huan Scholarship, USTC	2016
Outstanding Graduate Student, HEU	2015
First Prize Scholarship, HEU	2011-2015

Teaching Assistants in CUHK

ENGG 5501: Foundation of Optimization *given by Prof. Anthony Man-Cho So*	Fall 2019, 2020
FTEC 2101: Optimization Methods *given by Prof. Hoi To Wai*	Spring 2019
SEEM 2440: Engineering Economics *given by Prof. Dohyun Ahn*	Fall 2018, 2019, 2020

List of Referees

1. Prof. Anthony Man-Cho So (manchoso@se.cuhk.edu.hk)
   Professor, Department of Systems Engineering and Engineering Management
   The Chinese University of Hong Kong

2. Prof. Qing Ling (lingqing556@mail.sysu.edu.cn)
   Professor, School of Computer Science and Engineering
   Sun Yat-sen University