Jiadong Liang

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ACADEMIC POSITION

Peking University — Sep. 2019 -
Ph.D. Candidate of School of Mathematical Sciences — *Advisor: Prof. Zhihua Zhang*

EDUCATION

Peking University — Sep. 2015 - Jun. 2019
Bachelor of Statistics in School of Mathematical Sciences

RESEARCH INTERESTS

Stochastic Optimization
- Design provably efficient online stochastic algorithms for (non)-convex optimization problems with various types of random oracles.

Computational Efficient Statistics
- Discover techniques for efficiently handling statistical estimation and inference tasks with minimal computational overhead.

High Dimensional Statistics
- Develop reliable methodologies for addressing high-dimensional statistical problems under various constraints, including but not limited to differential privacy preservation, distributed data sources, and heavy-tailed random noise.

Diffusion Approximation
- Connect online stochastic methods (e.g., stochastic approximation and stochastic log-concave sampling algorithms) with continuous-time stochastic dynamics to aid in downstream tasks, such as characterizing asymptotic behavior and proposing optimal control mechanisms.

PUBLICATIONS

* indicates equal contribution.

A Statistical Analysis of Polyak-Ruppert Averaged Q-learning — 2023
Xiang Li, Wenhao Yang, **Jiadong Liang**, Zhihua Zhang, Michel I. Jordan
International Conference on Artificial Intelligence and Statistics (AISTATS)

Asymptotic Behaviors of Projected Stochastic Approximation: A Jump Diffusion Perspective — 2022
Jiadong Liang, Yuze Han, Xiang Li, Zhihua Zhang
Neural Information Processing Systems (NeurIPS), Oral presentation (top 1.5%)

Statistical Estimation and Inference via Local SGD — 2022
Xiang Li, **Jiadong Liang**, Xiangyu Chang, Zhihua Zhang
Conference on Learning Theory (COLT)

Lipschitz Generative Adversarial Nets — 2019
Zhiming Zhou, **Jiadong Liang**, Yuxuan Song, Lantao Yu, Hongwei Wang, Weinan Zhang, Yong Yu, Zhihua Zhang
International Conference on Machine Learning (ICML)

Preprints and Working Papers

* indicates equal contribution.

Gradient Tracking for High-Dimensional Federated Optimization
Jiadong Liang, Yang Peng, Zhihua Zhang
In Progress

Estimation and Inference in Distributional Reinforcement Learning   2023
Liangyu Zhang, Yang Peng, **Jiadong Liang**, Zhihua Zhang
Submitted

Stochastic Approximation MCMC, Online Inference, and Applications in Optimization of Queueing Systems   2023
Xiang Li*, **Jiadong Liang***, Xinyun Chen, Zhihua Zhang
Submitted

Online Statistical Inference for Nonlinear Stochastic Approximation with Markovian Data   2023
Xiang Li, **Jiadong Liang**, Zhihua Zhang
Submitted

Asymptotic Behaviors and Phase Transitions in Projected Stochastic Approximation: a Jump Diffusion Approach   2023
Jiadong Liang, Yuze Han, Xiang Li, Zhihua Zhang
Submitted

Intervention Generative Adversarial Networks   2020
Jiadong Liang*, Liangyu Zhang*, Cheng Zhang, Zhihua Zhang
Preprint

Presentations and Talks

Stochastic Approximation MCMC And Online Inference For Dynamic Pricing And Capacity Sizing In Queues
INFORMS Annual Meeting, *Phoenix, AZ, USA*   Oct 2023

Asymptotic Behaviors of Projected Stochastic Approximation: A Jump Diffusion Perspective
NeurIPS Deep-dive Paper Panels, *Virtual*   Dec 2022

Professional Services

Journal Reviewer for:
- Journal of Machine Learning Research

Conference Reviewer for:
- ICML [2023], Neurips [2022, 2023], ICLR [2022], UAI [2020]

Selected Awards

Qian Minping Scholarship | *Peking University*   2023

May Forth Scholarship | *Peking University*   2017

The 30th China Mathematical Olympiad Gold Medalist | *Chinese Mathematical Society*   2014

Skills

Languages: Chinese, English
Coding: Python, LaTeX