

Xingtū Liu

Contact

Email: rltheory@outlook.com

Personal Website: www.rltheory.com

Education

Simon Fraser University

December 2025

Master of Science (Computing Science, Thesis-Based)

Supervisor: Sharan Vaswani

University of Waterloo

August 2022

Bachelor of Mathematics (Honours Mathematical Studies)

Supervisor: Gautam Kamath

Research Interests

- Developing statistical theories for reinforcement learning and machine learning
- Designing provably efficient learning algorithms
- High-dimensional statistics

Preprints

Linear Scalarizations are Enough for Risk-Neutral Multi-Objective Reinforcement Learning

Valentin Tiriāc*, Xingtū Liu*, Lin F. Yang, Csaba Szepesvari, Sharan Vaswani

In Preparation

An Information-Theoretic Analysis of Out-of-Distribution Generalization in Meta-Learning with Applications to Meta-RL

Xingtū Liu

Submitted to L4DC 2026 (available on arXiv:2510.23448)

Central Limit Theorems for Asynchronous Averaged Q-Learning

Xingtū Liu

Submitted to L4DC 2026 (available on arXiv:2509.18964)

NeurIPS 2025 Workshop on Optimization for Machine Learning

Publications

Sample Complexity Bounds for Linear Constrained MDPs with a Generative Model

Xingtū Liu, Lin F. Yang, Sharan Vaswani

International Conference on Algorithmic Learning Theory (ALT) 2026

NeurIPS 2025 Workshop on Constrained Optimization for Machine Learning

A Note on Arithmetic–Geometric Mean Inequality for Well-Conditioned Matrices

Xingtū Liu

Conference on Information Sciences and Systems (CISS) 2025

A Short Note Partially Resolving a COLT 2021 Open Problem

Neural Networks with Complex-Valued Weights Have No Spurious Local Minima

Xingtū Liu

Conference on Information Sciences and Systems (CISS) 2025

NeurIPS 2024 Workshop on Optimization for Machine Learning

Information-Theoretic Generalization Bounds for Batch Reinforcement Learning

Xingtū Liu

Entropy 2024

NeurIPS 2024 Workshop on Mathematics of Modern Machine Learning

Landscape Analysis of Stochastic Policy Gradient Methods

Xingtū Liu

European Conference on Machine Learning (ECML) 2024

Oral Presentation (2.1% Acceptance Rate)

Languages	Chinese (Native), English (Fluent)
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