

Jianfei Ma



RESEARCH INTERESTS

Deep Reinforcement Learning, Optimization, Bayesian Inference, MCMC

EDUCATION

Northwestern Polytechnical University

Shaanxi, Xi'an

Candidate for B.S. in Statistics

Aug. 2019 – May 2023

- Overall GPA: 3.74/4.1 (90.36/100)
- Rank: 1/24
- Major Courses: Mathematical Analysis, Linear Algebra, Real Analysis, Functional Analysis, Abstract Algebra, Probability, Mathematical Statistics, Stochastic Process, Optimization, Differential Geometry
- Other Courses: Reinforcement Learning, Statistical Learning, Machine Learning, Data Structures

PREPRINT

- Ma, J. Entropy Augmented Reinforcement Learning. (arXiv,2022), <https://arxiv.org/pdf/2208.09322.pdf>

EXPERIENCE

Average-Reward Least Squares Temporal Difference Methods

Sep. 2022 – Dec. 2022

Research Intern with Shangdong Zhang

University of Virginia

- Extended average-reward off-policy LSTD(λ) based on MSPBE objectives
- Conducted convergence analysis of the algorithm

Meta Reinforcement Learning

Jan. 2022 – Jun. 2022

Research Intern with Yaodong Yang

Peking University

- Reproduced Bootstrapped Meta-Learning paper
- Extended BMG to different meta-learning frames – TorchOpt and MetaOptim

Combinatorial Optimization with Reinforcement Learning

Jan. 2022 – Apr. 2022

Student Researcher

Northwestern Polytechnical University

- Combined RL methods tackling shortest path problem
- Developed multi-agent model for sequential dispatch problem

Deep Learning for Thermodynamic Prediction

Oct. 2021 – Present

Main Contributor

Northwestern Polytechnical University

- Trained convolutional neural network predicting thermodynamic properties of materials
- Achieved speedup of the training process by dimensionality reduction method
- Utilized Von Neumann entropy for information quantification and interpretability

PROJECTS

MagiOPT

Jun. 2022 – Jul. 2022

- A Unified Pytorch Optimizer for Numerical Optimization

AWARDS

ASC Student Supercomputer Challenge

Jan. 2022 – Mar. 2022

- Second Class Prize

Mathematical Contest In Modeling

Feb. 2021

- Honorable Mention

SKILLS

Programming Language: Python, C/C++, R, Matlab, Cuda

Framework & Tools: Git, LaTeX, Emacs, Pytorch, Tensorflow