Jianfei Ma

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RESEARCH INTERESTS

SWIRL: **S**ample Efficiency, **W**orld Models and **I**ntrinsic Motivation for **R**einforcement **L**earning

EDUCATION

National University of Singapore — Singapore
Doctor of Philosophy in Computer Science — *Aug. 2024 – Present*
Advisor: Prof. Wee Sun Lee

Northwestern Polytechnical University — Xi'an, Shaanxi
Bachelor of Science in Statistics — *Aug. 2019 – Jul. 2023*

PUBLICATION

- Ma, J. Discerning Temporal Difference Learning. (AAAI, 2024)
- Ma, J. Generative Intrinsic Optimization: Intrinsic Control with Model Learning. (NeurIPS Workshop IMOL, 2023)
- Ma, J. The Point to Which Soft Actor-Critic Converges. (ICLR Tiny Papers, 2023)

PREPRINT

- Ma, J. Distillation Policy Optimization. (arXiv, 2023)
- Ma, J. Entropy Augmented Reinforcement Learning. (arXiv, 2022)

EXPERIENCE

Distributional Model-based RL via Variational Inference — Jun. 2023 – May 2024
Research Intern with **Huazhe Xu** — *Tsinghua University*
- Developing a distributional control method through probabilistic inference.
- Unifying joint evaluation & control with a world model.

Average-Reward Least Squares Temporal Difference Methods — Sep. 2022 – Dec. 2022
Research Intern with **Shangtong 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

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++, Bash, R, Matlab, Elisp
Framework & Tools: Git, LaTeX, Emacs, Pytorch, Tensorflow, JAX, Flax