DUOHAN ZHANG

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Department of Statistics, University of Wisconsin Madison

EDUCATION

University of Wisconsin Madison *Madison, Wisconsin*
Department of Statistics, master in Statistics and Data Science *2021/9 - 2023/5*
GPA: 3.82/4.0

University of Science and Technology of China *Hefei, China*
Department of Statistics, bachelor in statistics *2018/9 - 2022/6*
GPA: 86.47/100 Courses related to my research interests:
Statistical Learning: (100, Top 1); Theory of Probability I: (94, Top 1), a PhD level course; Theory of Probability II:(Top 1), a PhD level course; Introduction to Statistical Learning Inference: (93, Top 1); Real Analysis: (100); Functional Analysis: (93).

RESEARCH INTERESTS

Machine Learning, especially (deep) reinforcement Learning; Optimization.

PUBLICATION

Robust On-Policy Sampling for Data-efficient Policy Evaluation.
Rujie Zhong, **Duohan Zhang**, Lukas Schäfer, Stefano V Albrecht, Josiah P. Hanna.
NeurIPS-2022

RESEARCH EXPERIENCE

Robust On-Policy Sampling(ROS)- Proximal Policy Optimization(PPO) *2022/7 - current*
University of Wisconsin Madison
Advisor: Prof. Josiah Hanna

- Proposed an off-policy algorithm(ROS-PPO) that may be more data-efficient than vanilla PPO.
- Trying to improve the poor behavior of previously proposed algorithm(ROS) on function approximation.
- Trying to do experiments to show that ROS-PPO outperforms PPO in terms of data efficiency.

Robust On-Policy Sampling(ROS) *2021/12 - 2022/5*
University of Wisconsin Madison
Advisor: Prof. Josiah Hanna

- Proposed an off-policy sampling algorithm(ROS) that can produce data that more closely matches the expected on-policy data distribution.
- Proved theoretically that ROS can produce data that converges faster to the expected on-policy distribution compared to on-policy sampling.
- Showed empirically that the faster convergence leads to lower mean squared error policy value estimates.

Online forgetting process for moderate linear regression *2021/6 - 2021/8*
University of Science and Technology of China
Advisor: Prof. Xiao Guo

- Proposed a moderate dimensional regression model in which past data has to be deleted required by privacy protection, while the number of features is increasing at the same time.

- Tried to prove asymptotic behavior of OLS in the setting by applying Martingale Central Limit Theorem.
- Tried to do experiments to show that the empirical results match the theoretical expectation.

AWARDS

Student scholarship from USTC *2019,2020*
School of Management, University of Science and Technology of China

SKILLS

Programming Languages and Tools
Python, Pytorch, Open AI gym, C, R, LaTeX.

Language
TOEFL iBT 100(Reading 26, Listening 23, Speaking 23, Writing 28).
GRE: GRE Verbal 153(58%), Quantitative 170(96%), Analytical Writing 4.0(54%).