

Zhiyu Zhang

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RESEARCH INTEREST

Adaptive online learning, with applications in system control and robotics. The goal is to design theoretically sound and practically useful sequential decision making algorithms that Bayes-optimally exploit offline knowledge, such as domain structures, physical models and deep learning.

EMPLOYMENT

Harvard University 09/2023 – Present
Postdoctoral Fellow Advisor: Heng Yang

EDUCATION

Boston University 09/2018 – 08/2023
PhD, Systems Engineering Advisor: Ioannis Paschalidis, Ashok Cutkosky

Tsinghua University 09/2014 – 06/2018
BEng, Mechanical Engineering

Delft University of Technology 09/2016 – 02/2017
Exchange Student, Control Engineering

PUBLICATION

Discounted Adaptive Online Prediction [Preprint](#)
Zhiyu Zhang, David Bombara, Heng Yang

Understanding Adam Optimizer via Online Learning of Updates: Adam is FTRL in Disguise [Preprint](#)
Kwangjun Ahn, Zhiyu Zhang, Yunbum Kook, Yan Dai

Improving Adaptive Online Learning Using Refined Discretization [ALT'24](#)
Zhiyu Zhang, Heng Yang, Ashok Cutkosky, Ioannis Paschalidis

Unconstrained Dynamic Regret via Sparse Coding [NeurIPS'23](#)
Zhiyu Zhang, Ashok Cutkosky, Ioannis Paschalidis

Optimal Comparator Adaptive Online Learning with Switching Cost [NeurIPS'22](#)
Zhiyu Zhang, Ashok Cutkosky, Ioannis Paschalidis

PDE-Based Optimal Strategy for Unconstrained Online Learning [ICML'22](#)
Zhiyu Zhang, Ashok Cutkosky, Ioannis Paschalidis

Adversarial Tracking Control via Strongly Adaptive Online Learning with Memory [AISTATS'22](#)
Zhiyu Zhang, Ashok Cutkosky, Ioannis Paschalidis

Provable Hierarchical Imitation Learning via EM [AISTATS'21](#)
Zhiyu Zhang, Ioannis Paschalidis

AWARD

NeurIPS Scholar (Travel Award) 2023

Multiple Top Reviewer Awards (~10%)
AISTATS'22, ICML'22, NeurIPS'22 and '23

Dean's Fellowship 2018 – 2019
College of Engineering, Boston University

Scholarship for Distinction in Academics 2014 – 2017
Tsinghua University

Scholarship for Outstanding Exchange Students 2016
China Scholarship Council

SERVICE

Action Editor:

TMLR, 2024-Present (Transactions on Machine Learning Research)

Conference Reviewer:

AISTATS 2021-2024 (Artificial Intelligence and Statistics)

ICML 2022-2023 (International Conference on Machine Learning)

NeurIPS 2022-2023 (Conference on Neural Information Processing Systems)

ALT 2023 (International Conference on Algorithmic Learning Theory)

COLT 2024 (Conference on Learning Theory)

Subreviewer:

NeurIPS 2020

L4DC 2020 (Learning for Dynamics & Control Conference)

Journal Reviewer:

IEEE Transactions on Robotics

Journal of Machine Learning Research

Foundations and Trends in Machine Learning

RESEARCH TALK

Prof. Na Li's group, Harvard University	02/2024
Prof. Na Li's group, Harvard University	10/2023
SIAM Student Chapter, Boston University	10/2023
Prof. Chuchu Fan's group, MIT	02/2023
CISE Graduate Student Workshop, Boston University	01/2023
Prof. Christos Cassandras' group, Boston University	12/2021

TEACHING AND MENTORING

Teaching Assistant

2020 – 2021

Boston University

- EK 381: Probability, Statistics, and Data Science for Engineers
- ME 366: Probability and Statistics for Mechanical Engineers
- ME 404: Dynamics and Control of Mechanical Systems

BU RISE program mentor

Summer 2019

Boston University

- Summer research program for high school students.