Ethan Blaser

PHD CANDIDATE · COMPUTER SCIENCE

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Research Interest

The goal of my research is to enhance both the performance and understanding of sequential decision-making systems, with a specific emphasis on reinforcement learning (RL). My current work focuses on proving the almost sure convergence and finite sample analysis of RL algorithms using techniques from stochastic approximation theory. Additionally, I explore both the theoretical and empirical aspects of in-context RL, where agents learn to solve new (possibly out-of-distribution tasks) based on past experiences during inference, without updating their parameters.

Education

University of Virginia *Charlottesville, VA USA*
PHD CANDIDATE IN COMPUTER SCIENCE *August 2021 - Present*
- Advisor: Professor Shangtong Zhang
- NSF Graduate Research Fellow

University of Virginia *Charlottesville, VA USA*
MASTERS IN CS (MCS) *June 2023*
- Advisor: Professor Hongning Wang

University of Virginia *Charlottesville, VA USA*
BA PHYSICS AND COMPUTER SCIENCE WITH HIGHEST DISTINCTION *2017-2021*
- Distinguished Major Thesis Advisor: Professor Hongning Wang
- Phi Beta Kappa

Academic Employments

2021-Present	**Graduate Research Assistant**, University of Virginia
Summer 2022	**Intern**, Space Exploration Technologies Corp. (SpaceX)
Summer 2020	**Intern**, Millennium Space Systems
Summer 2019	**Intern**, NASA Jet Propulsion Laboratory (JPL)
Summer 2018	**Intern**, NASA Jet Propulsion Laboratory (JPL)
2020-2021	**Undergraduate Research Assistant**, Dept. of Computer Science, University of Virginia

Publications

*** indicates equal contribution, author order determined by a coin-toss*

PREPRINTS

A. Moeini, J. Wang, J. Beck, **E. Blaser**, S. Whiteson, R. Chandra, S Zhang. A Survey of In-Context Reinforcement Learning *arxiv:2502.07978*, 2025.

PUBLISHED

E. Blaser, J. Wang, and S. Zhang. Almost Sure Convergence of Differential Temporal Difference Learning for Average Reward Markov Decision Processes. *AISTATS*, 2026.

E. Blaser, S. Zhang. Asymptotic and Finite Sample Analysis of Nonexpansive Stochastic Approximations with Markovian Noise. *AAAI*, 2026.

J. Wang*, **E. Blaser***, and S. Zhang. Transformers Can Learn Temporal Difference Methods for In-Context Reinforcement Learning. *Proceedings of the 30th International Conference on Learning Representations (ICLR)*, 2025.

- **Best Paper Award** at the ICML Workshop on In-Context Learning, 2024.

- **Oral Spotlight** at the RLC Workshop on Training Agents with Foundation Models, 2024.

E. Blaser, C. Li, H. Wang. Federated Linear Contextual Bandits with Heterogeneous Clients. *Proceedings of the 27th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2024.

L. Lin, **E. Blaser**, H. Wang. Graph Structural Attack by Spectral Distance. *Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 989-998, 2022.

L. Lin, **E. Blaser**, H. Wang. Graph Embedding with Hierarchical Attentive Membership. *Proceedings of the 15th International Conference on Web Search and Data Mining (WSDM)*, 582-590, 2022.

R. T. Zellem, K. A. Pearson, **E. Blaser**, et. al. Utilizing Small Telescopes Operated by Citizen Scientists for Transiting Exoplanet Follow-up: Providing the Professional Community Accurate Ephemerides, Higher Spatial Resolution, Long-orbit Planet Confirmation, and Transit Timing Variation Measurements. *Publications of the Astronomical Society of the Pacific (PASP)*, 132:1011, 2020.

Awards, Fellowships, & Grants

2024	**Best Paper Award**, ICML Workshop on In-Context Learning
	Oral Spotlight, Reinforcement Learning Conference (RLC)
2023	**Outstanding Graduate Teaching Award**, UVA Dept. of Computer Science
	All University Graduate Teaching Award Nominee, University of Virginia
	AISTATS Travel Award, AISTATS Conference
2022	**NSF Graduate Research Fellowship**, US National Science Foundation
2022	**UVA Engineering Distinguished Fellowship**, UVA School of Engineering
2021	**Louis T. Rader Award for Undergraduate Research in CS**, UVA Dept. of Computer Science
	Phi Beta Kappa, University of Virginia
	Graduated with Highest Distinction, University of Virginia
2020	**Alan J. Silverman Scholarship**, Pi Lambda Phi
2019	**Runner-Up at UVA Physics Research Symposium**, UVA Physics Dept.
2017	**Echols Scholar**, UVA Honors Program

Teaching Experience

Fall 2024	**Reinforcement Learning**, Head Teaching Assistant
Spring 2024	**Machine Learning**, Head Teaching Assistant
Spring 2023	**Data Structures and Algorithms II**, Head Teaching Assistant
Fall 2022	**Data Structures and Algorithms II**, Head Teaching Assistant
Fall 2018	**Discrete Mathematics**, Teaching Assistant

Mentoring

Spring 2024 - Spring 2025	**Vikram Ostander**, Undergraduate Student, University of Virginia

Outreach & Professional Development

SERVICE AND OUTREACH

Summer 2024 - Present	**Charlottesville High School / UVA Link Lab Mentorship Program**, Volunteer Mentor
2023-Present	**UVA CS Undergraduate Experience Committee**, Member
2019-2021	**Outreach Chair**, UVA Society of Physics Students

Reviewing

ICLR 2025
RLC 2024, 2025
AAAI 2026
AAMAS 2025, 2026
AISTATS 2024, 2026
IEEE TSIT 2023
ICML Workshop on In Context Learning 2024