

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

PHD CANDIDATE IN COMPUTER SCIENCE

- Advisor: Professor Shangdong Zhang
- NSF Graduate Research Fellow

Charlottesville, VA USA

August 2021 - Present

University of Virginia

MASTERS IN CS (MCS)

- Advisor: Professor Hongning Wang

Charlottesville, VA USA

June 2023

University of Virginia

BS PHYSICS AND COMPUTER SCIENCE

- Distinguished Major Thesis Advisor: Professor Hongning Wang
- Phi Beta Kappa

Charlottesville, VA USA

2017-2021

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

E. Blaser, S. Zhang. The Almost Sure Convergence of Average Reward Temporal Difference Learning. *arXiv:2409.19546*, 2024.

J. Wang*, **E. Blaser***, and S. Zhang. Transformers Learn Temporal Difference Methods for In-Context Reinforcement Learning. *arXiv:2405.13861*, 2024.

- **Spotlight Award** at the ICML Workshop on In-Context Learning, 2024.
- Contributed talk at the RLC Workshop on Training Agents with Foundation Models, 2024.

PUBLISHED

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. Zelle, 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

- 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**, 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 - Present **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
 AAMAS 2025

AISTATS 2024
IEEE TSIT 2023
ICML Workshop on In Context Learning 2024