NICHOLAS E. CORRADO

ncorrado@wisc.edu (412) 417-1383 nicholascorrado.github.io

EDUCATION

University of Wisconsin – Madison, Madison, WI — Present
Ph.D., Computer Sciences
Advisor: Josiah Hanna

University of Pittsburgh, Pittsburgh, PA — 2019
B.S. in Physics, Mathematics; Minor in Computer Science
Thesis: A Search for W_{bJ} in Decays of $\Upsilon(5S)$: An Analysis Design Study
Advisor: Vladimir Savinov

EXPERIENCE

University of Wisconsin–Madison | Graduate Research Assistant — Jan. 2021 – Present
Advisor: Josiah Hanna

- My research focuses on data collection and data quality in reinforcement learning.

Amazon | Applied Scientist Intern — July 2024 – Nov. 2024
Advisors: Julian Katz-Samuels, Hyokun Yun, Yi Xu

- Multi-task alignment for LLMs with the Rufus Team.

Sandia National Laboratories | Graduate Research Intern — May 2021 – Nov. 2023
Advisor: Drew Levin

- Reinforcement learning for power systems management. From May 2022 - Nov 2023, I served as a consultant.

University of Wisconsin – Madison | Graduate Research Assistant — Sept. 2019 – Sept. 2020
Advisor: Jignesh Patel

- Focused on query execution algorithms. I built the query execution and storage engines for Hustle.

University of Pittsburgh | Undergraduate Research Assistant — Oct. 2016 - Aug. 2019
Advisor: Vladimir Savinov

- Designed the first search for W_{bJ} states in data collected by the Belle experiment.

PAPERS

Manuscripts Under Review .....

[M1] **When Can Model-Free Reinforcement Learning be Enough for Thinking?**
Josiah P. Hanna, Nicholas E. Corrado
arXiv preprint arXiv:2506.17124, 2025.

[M2] **Centralized Adaptive Sampling for Reliable Co-training of Independent Multi-Agent Policies**
Nicholas E. Corrado, Josiah P. Hanna
Under Review, 2025.

[M3] **On-Policy Policy Gradient Reinforcement Learning Without On-Policy Sampling**
Nicholas E. Corrado, Josiah P. Hanna
arXiv preprint arXiv:2311.08290, 2023.

Conference Publications

[C1] **AutoMixAlign: Adaptive Data Mixing for Multi-Task Preference Optimization in LLMs**
Nicholas E. Corrado, Julian Katz-Samuels, Adithya M Devraj, Hyokun Yun, Chao Zhang, Yi Xu, Yi Pan, Bing Yin, Trishul Chilimbi
Association for Computational Linguistics (ACL), 2025. (Acceptance Rate: 20.3%)
+ Amazon Machine Learning Conference (AMLC), 2025 (**Oral**).

[C2] **Guided Data Augmentation for Offline Reinforcement Learning and Imitation Learning**
Nicholas E. Corrado, Yuxiao Qu, John U. Balis, Adam Labiosa, Josiah P. Hanna
Reinforcement Learning Conference (RLC), 2024.

[C3] **Understanding when Dynamics-Invariant Data Augmentations Benefit Model-Free Reinforcement Learning Updates**
Nicholas E. Corrado, Josiah P. Hanna
International Conference on Learning Representations (ICLR), 2024. (Acceptance Rate: 30.8%)

[C4] **Deep Reinforcement Learning for Distribution Power System Cyber-Resilience via Distributed Energy Resource Control**
Nicholas E. Corrado, Michael Livesay, Jay Johnson, Drew Levin
IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (IEEE SmartGridComm), 2023.

[C5] **Simulation-Acquired Latent Action Spaces for Dynamics Generalization**
Nicholas E. Corrado, Yuxiao Qu, Josiah P. Hanna
Conference on Lifelong Learning Agents (CoLLAs), 2022.

Workshop Papers

[W1] **Thinking is Another Form of Control**
Josiah P. Hanna, Nicholas E. Corrado
Finding the Frame Workshop at the Reinforcement Learning Conference (RLC), 2025. **(Oral)**.
🏆 **Awarded "Most-Thought-Provoking Paper"**

[W2] **On-Policy Policy Gradient Reinforcement Learning Without On-Policy Sampling**
Nicholas E. Corrado, Josiah P. Hanna
Finding the Frame Workshop at the Reinforcement Learning Conference (RLC), 2025.

HONORS & AWARDS

- **Top Reviewer Award, NeurIPS 2024 (Top 8%)** 2024
- **Sandia Employee Recognition Award.** Awarded to < 10% of the Sandia workforce 2023
- **UW-Madison CS Department Scholarship ($3000).** Awarded to top graduate applicants. 2019
- **John O. Blumberg Memorial Scholarship ($1000).** Awarded to the top math major. 2019
- Pennsylvania Space Grant Consortium Scholarship (third time, $1500). Research funding. 2019
- Emil Sanielevici Scholarship ($4000). Research funding. 2018
- Pennsylvania Space Grant Consortium Scholarship (second time, $1500). Research funding. 2018
- J&M Bigos Memorial Scholarship ($10,000). Awarded for academic excellence. 2018
- Sigma Pi Sigma Physics Honor Society 2018
- American Physical Society DPF Travel Award ($200) 2017
- **Peter F.M. Koehler Award ($500).** Awarded to the top physics major. 2017
- Brackenridge Summer Research Fellowship ($3500). Research funding. 2017.
- Rebecca Dytman Scholarship ($10,000). Awarded for academic excellence in physics and astronomy. 2017
- Pennsylvania Space Grant Consortium Scholarship (first time, $1500). Research funding. 2017

TALKS

- **On-Policy Policy Gradient Reinforcement Learning Without On-Policy Sampling** 2023
University of Edinburgh RL Reading Group [video]

ADVISING

- Harry Huang (Undergraduate, University of Wisconsin-Madison, WISCERS program) 2025
- Nora Tseng (Undergraduate, University of Wisconsin-Madison, WISCERS program) 2024
  Next: MS @ UC San Diego
- Yuxiao Qu (Undergraduate, University of Wisconsin-Madison) 2021-2023
  Next: PhD @ Carnegie Mellon University

TEACHING EXPERIENCE

University of Wisconsin–Madison

- Research Mentor Program (Part of the Delta Program) Fall 2023
- Teaching Assistant for *Mathematical Foundations of Machine Learning (CS 761)* Fall 2021
- Head Teaching Assistant for *Intro to Computer Systems (CS 354)* Fall 2021
- Teaching Assistant for *Problem Solving for Engineers (CS 310)* Spring 2021
- Teaching Assistant for *Discrete Mathematics (CS 240)* Fall 2020

University of Pittsburgh

- Teaching Assistant for *Quantum Mechanics (PHYS 1370)* Fall 2018

SERVICE

- Reinforcement Learning Reading Group Coordinator (University of Wisconsin-Madison) 2025
- Graduate Student Mentor for Wisconsin Science and Computing Emerging Research Stars (WISCERS) 2024, 2025
- Graduate Student Mentor for Fall 2025 graduate cohort (University of Wisconsin-Madison) Fall 2025
- Invited Panelist, Demystifying Graduate School (University of Wisconsin-Madison) 2024, 2025
- Sandia Machine Learning and Deep Learning (MLDL) Workshop. Designed a new RL competition. 2022

Reviewing

- Reviewer, TMLR 2025
- Reviewer, NeurIPS 2023, 2024, 2025
- Reviewer, ICML 2024, 2025
- Reviewer, ICLR 2024, 2025
- Senior Reviewer, RLC (Reinforcement Learning Conference) 2024, 2025
- Program Committee, AAAI 2024, 2025, 2026
- Program Committee, AAAI Alignment Track 2026
- Reviewer, RA-L (Robotics and Automation Letters) 2024
- Reviewer, ICRA 2024

MEDIA

- Training a dog and training a robot aren't so different 2023

TECHNICAL SKILLS

Machine Learning & Data Science: Python ○ PyTorch ○ NumPy ○ Pandas ○ Matplotlib ○ Jupyter ○ Anaconda
Software Engineering: C++ ○ C ○ Git ○ Bash