NICHOLAS E. CORRADO

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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-objective 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.

PAPERS

Manuscripts Under Review...

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

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

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

Conference Publications...

[C1] **AutoMixAlign: Adaptive Data Mixing for Multi-Task Preference Optimization in LLMs**
<u>Nicholas E. Corrado</u>, Julian Katz-Samuels, Adithya M Devraj, Hyokun Yun, Chao Zhang, Yi Xu, Yi Pan, Bing Yin, Trishul Chilimbi
Association for Computational Linguistics (ACL), 2025.

[C2] **Guided Data Augmentation for Offline Reinforcement Learning and Imitation Learning**
<u>Nicholas E. Corrado</u>, 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.

[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.

[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 reinforcement learning 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
- ▸ 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