

Xiangqi (Shawn) Wang

+1 (574) 323 0940 - [Webpage: https://xiangqiwang77.github.io/](https://xiangqiwang77.github.io/) - xwang76@nd.edu - [LinkedIn](#)

SUMMARY

PhD student in Computer Science at the University of Notre Dame, focusing on reinforcement learning and trustworthy reasoning of large language models. Experienced in causal inference, bandit algorithms, and large-scale multi-agent simulation, with multiple first-author publications (NeurIPS Spotlight, TMLR, WSDM, etc).

EDUCATION & EXPERIENCES

University of Notre Dame

South Bend, IN, USA

PhD Student in CSE under mentorship of [Dr. Xiangliang Zhang](#).

Sep. 2024 - Present

University of Science and Technology of China

Hefei, China

B.Sc in CS major graduated with first class honor from [School of the Gifted Young](#)

Sep. 2020 - June 2024

Previously, I was fortunate to be advised by [Prof. Qi Liu \(USTC\)](#), remotely supervised by [Prof. Huazheng Wang](#) and [Prof. Jian Kang](#), and conducted causal inference research mentored by [Prof. Zhuoran Yang](#).

TECHNICAL SKILLS & RESEARCH INTERESTS

Research Interest: Reinforcement Learning, Trustworthy LLM Reasoning, Causal Inference, Bandit Algorithm

Libraries and Tools: Verl, PyTorch, Llamafactory, transformer, Git, Docker, contextual bandit

FIRST AUTHOR PUBLICATIONS

Causally-Enhanced Reinforcement Policy Optimization

X. Wang, Y. Huang, Y. Zhou, X. Luo, K. Guo, X. Zhang

Under review; [arXiv](#)

- Proposed CE-RPO/CE-GRPO to address shortcut learning and reward-hacking in RL for LLMs by fusing task accuracy with causal-coherence signals; introduced Jacobian-based influence with counterfactual hardening and a Minkowski power-mean combiner.
- Built the PPO/GRPO training stack end-to-end, and led large-scale evaluations showing consistent accuracy and robustness gains.

AdaReasoner: Adaptive Reasoning Enables More Flexible Thinking of Large Language Models

X. Wang, Y. Huang, Y. Wang, X. Luo, K. Guo, Y. Zhou, X. Zhang

[NeurIPS 2025 Spotlight](#); [arXiv](#)

- Introduced an few-shot adaptive controller that tunes temperature and reasoning prompt by task features; trained via RL with a factorized action space and Boltzmann exploration.
- Delivered theory-backed fast convergence with a sublinear policy gap and consistent gains across six LLMs on diverse reasoning suites; improved OOD robustness with an LLM-agnostic, plug-and-play controller.

Fair Online Influence Maximization

X. Wang, S. Zhang, J. Escamilla, Q. Wu, X. Zhang, J. Kang, H. Wang

Transactions on Machine Learning Research (TMLR), 2025 [OpenReview](#)

- Designed fairness-aware combinatorial multi-arm contextual bandits for online influence maximization with demographic coverage constraints; proved sublinear regret.
- Built scalable solvers and validated on public graphs (e.g., Pokec); contributed extensive online RL experiments.

WildlifeLookup: A Chatbot Facilitating Wildlife Management with Accessible Data and Insights

X. Wang, T. Yang, J. Rohr, B. Scheffers, N. Chawla, X. Zhang

ACM International Conference on Web Search and Data Mining (WSDM) 2025 [DOI](#)

- Constructed a national wildlife observation knowledge graph and a natural-language chatbot for species-habitat-policy queries using multimodal graph RAG technique. Chatbot exhibits expert level performance on AI4Science specific questions.
- Working as major contributor under NSF funded project.

PUBLICATIONS INVOLVED

- Y. Huang, J. Ye, Z. Liu, Y. Li, **X. Wang**, Y. Hao, Y. Zhou, K. Guo, X. Chen, Y. Zhao, X. Zhang. “ValueLence: A Dashboard for In-Depth Value Probing of LLMs,” *Under review* — Contributed in pipeline. [Link](#)
- Y. Wang, Z. Xu, Y. Huang, **X. Wang**, Z. Song, L. Gao, C. Wang, X. Tang, Y. Zhao, A. Cohan, X. Zhang, X. Chen. “DyFlow: Dynamic Workflow Framework for Agentic Reasoning,” *NeurIPS*, 2025 — Co-developed dynamic workflow for tool/agent reasoning with theoretical guarantee [Link](#)
- C. Gao, Y. Huang, **X. Wang**, S. Wu, N. Chawla, X. Zhang. “Think it Image by Image: Multi-Image Moral Reasoning of Large Vision–Language Models,” *ACM CIKM*, 2025 — Contributed to manuscript writing. [Link](#)
- Y. Huang, Z. Yuan, Y. Zhou, K. Guo, **X. Wang**, H. Zhuang, W. Sun, L. Sun, *et al.* “Social Science Meets NLP: Assessing Reliability of Language Processing Models in Social Simulations,” *COLM*, 2025 — Designed simulation scenarios (Python), built reliability metrics, drafted results analysis. [Link](#)
- Y. Huang, C. Gao, S. Wu, H. Wang, **X. Wang**, Y. Zhou, Y. Wang, J. Ye, J. Shi, *et al.* “Trustworthiness of Generative Models for Natural Language Processing: Guidelines, Assessment, and Perspective,” *arXiv:2502.14296*, 2025 Co-developed assessment framework, ran large-scale experiments, co-wrote methodology & discussion. [Link](#)
- H. Bao, Y. Huang, Y. Wang, J. Ye, **X. Wang**, X. Chen, Y. Zhao, T. Zhou, *et al.* “AutoBench-V: Self-Evaluation Framework for Vision–Language Processing,” *arXiv:2410.21259*, 2024 — Implemented automated test-generation pipeline, integrated metrics, authored system architecture. [Link](#)
- T. Yang, L. Dai, Z. Liu, **X. Wang**, M. Jiang, Y. Tian, X. Zhang. “CLIPerase: Efficient Unlearning of Visual–Textual Associations in CLIP,” *ACL*, 2025 — Contributed in figure plotting and code construction. [Link](#)

ACADEMIC PARTICIPATION

- **Journal Reviewer** TMLR 2025, IEEE Transactions on Computational Social Systems, IEEE NASC Competition holder.
- **Conference Reviewer** ICLR 2026, NeurIPS 2025, WWW 2025, KDD 2024

HONORS & AWARDS

NSF DISCOVER ACCESS Project (2025); OpenAI Researcher Access Program (2025); Chinese Mathematics Competition — Provincial First Prize (2022); ICPC China Regional — Prize Award (2021). Yearly Outstanding Student of USTC; Nominated for SGY 87–00 Scholarship.

TOOLKITS & PROJECTS

Knowledge Network of Wildlife — Query Website kn-wildlife.crc.nd.edu: Contributor; built the searchable web interface for the wildlife knowledge network and integrated curated resources.

CausalRL (Verl modification) github.com/XiangqiWang77/causalrl: Modified VERL with *Jacobian Causal Scores* and a parallel-thread reward background to accelerate policy/reward updates.

AdaReasoner — official implementation github.com/XiangqiWang77/officialadareasoner: Implementation of *AdaReasoner*; modular small weight reasoning pipeline and reproducible training/inference scripts.

Combinatorial bandit codebase github.com/wangxiangqi/Fair_IM_new: FOIM project codebase; cleaned bandit implementation with experiments, and evaluation pipeline.

NSF Projects : [Proto-OKN](#) and [NSF GPU Access](#): Project participant; contributed to data/knowledge integration and applications. NSF DISCOVER ACCESS provides GPU accesses.

TALKS & PRESENTATION

Attended: NSF Proto-OKN Annual Meeting; SASC Symposium (ecologists feedback collection, cross-domain collaboration); ACM WSDM Tutorial; EMNLP 2024; the third Reinforcement Learning Conference (remote).

TEACHING & MENTORSHIP

Teaching Assistant: Machine Learning (Graduate), University of Notre Dame; Computer Programming A (USTC, Prof. Xuefei Bai); Data Analysis and Practice (USTC, Prof. Qi Liu).