Zhaoyue Wang

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Education

University of Toronto, Toronto, Canada *Sept. 2023 - Present*

- Visiting researcher
  Selected Coursework: Topics in Knowledge Representation and Reasoning

McGill University, Montreal, Canada *Sept. 2022 - Present*

M.S. in Computer Science , Affiliation: Mila Quebec

- Advisors: Prof. Xujie Si, Prof. Clark Verbrugge
  Selected Coursework: Reinforcement Learning, Probabilistic Analysis of Algorithms and Data Structures.

McGill University, Montreal, Canada *Sept. 2017 - May. 2022*

- B.Arts in Computer Science and Philosophy
  Selected Coursework: Moral Philosophy, Philosophy of Law, Philosophy of AI

Publications

Conference Publications

- Chuqin Geng, Nham Le, Xiaojie Xu, **Zhaoyue Wang**, Arie Gurfinkel, Xujie Si.
  Towards Reliable Neural Specifications. *International Conference on Machine Learning (**ICML**)* Oral (*3% acceptance*), 2023.

Workshop Publications

- Ziyan Luo, Yijie Zhang, **Zhaoyue Wang**. Does Hierarchical Reinforcement Learning Outperform Standard Reinforcement Learning in Goal-Oriented Environments?
  *Conference on Neural Information Processing Systems (**NeurIPS**) Goal Conditional Reinforcement Learning Workshop*, 2023.

Research Projects

- Towards socially aware RL agent with Reward Design using Large Language Models, ArXiv, 2023. Advisors: Prof. Sheila McIlraith, Prof. Toryn Qwyllyn Klassen
  Leverages LLM's social and moral understanding in reward design to guide RL agents toward trajectories that align with human values. Propose precaution augmented exploration to achieve safer exploration.
- (Ongoing) Deep Learning Assisted Efficient Web-Assembly Sparse Matrix Multiplication Optimization. Advisors: Prof. Xujie Si, Prof. Clark Verbrugge
  Predict and select optimal sparse matrix storage format in Web-Assembly (wasm) sparse matrix operations with CNN and transformers. Learn the optimal wasm optimization combination with Reinforcement Learning techniques.
- Interpretable-AI. Advisor: Prof. Jocelyn Maclure
  Surveys and critically analyze existing methods and theories towards building interpretable-AI. The paper employ discussion in philosophy such as the value of understanding, freedom of choice and formation of language that may shed light to directions for future work of interpretable-AI.

Teaching

- Teaching Assistant at McGill University Winter 2023
  Course: COMP206 Introduction to Software Systems

Skills

(Proficient) Python, C, Java; (Familiar) JavaScript, WebAssembly, MATLAB

Community Service

- Pensees Canadiennes philosophy undergraduate journal Editor-in-Chief *2021- 2022*