

Ruo Yu (David) Tao

Education

- 2022– **Ph.D. in Computer Science, Brown University**
Advisor: George Konidaris
- 2020–2022 **M.Sc. in Computer Science, University of Alberta**
Advisors: Marlos C. Machado, Adam White
- 2016–2020 **Hon. B.Sc. in Computer Science, McGill University**
Undergraduate Research Advisor: Joelle Pineau
GPA: 3.96/4.00, Dean's Honour List, First Class Honours

Publications

- 2025 **Benchmarking Partial Observability in RL with a Suite of Memory-Improvable Domains**
R. Y. Tao*, K. Guo*, C. Allen, G. Konidaris
To appear in *The Second Annual Reinforcement Learning Conference (RLC)*, August 2025 [\[paper\]](#)
- 2024 **Mitigating Partial Observability in Sequential Decision Processes via the Lambda Discrepancy**
C. Allen*, A. Kirtland*, R. Y. Tao*, S. Lobel, D. Scott, N. Petrocelli, O. Gottesman, R. Parr, M. L. Littman, G. Konidaris
In *The Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS)*, December 2024 [\[paper\]](#) [\[code\]](#)
- 2023 **Auxiliary Inputs for Agent-State Construction**
R. Y. Tao, A. White, M. C. Machado
In *Transactions on Machine Learning Research (TMLR)*, December 2023 [\[paper\]](#) [\[code\]](#)
- 2023 **Measuring and Mitigating Interference in Reinforcement Learning**
V. Liu, H. Wang, R. Y. Tao, K. Javed, A. White, M. White
In *Conference on Lifelong Learning Agents (CoLLAs)*, May 2023 [\[paper\]](#)
- 2020 **Novelty Search in Representational Space for Sample Efficient Exploration**
R. Y. Tao, V. François-Lavet, J. Pineau
Selected for oral presentation. In *Advances in Neural Information Processing Systems (NeurIPS)*, December 2020 [\[paper\]](#) [\[code\]](#) [\[oral\]](#)
- 2018 **Towards Solving Text-Based Games by Producing Adaptive Action Spaces**
R. Y. Tao, M. Côté, X. Yuan, L. E. Asri
Presented at the *WordPlay Workshop at Neural Information Processing Systems (NeurIPS)*, December 2018 [\[paper\]](#) [\[code\]](#)

2018 **TextWorld: A Learning Environment for Text-Based Games**

M. Côté, Á. Kádár, X. Yuan, B. Kybartas, T. Barnes, E. Fine, J. Moore, [R. Y. Tao](#), M. Hausknecht, L. E. Asri, M. Adada, W. Tay, A. Trischler

Presented at the *Computer Games Workshop at International Joint Conferences on Artificial Intelligence (IJCAI)*, July 2018 [\[paper\]](#) [\[code\]](#)

Teaching Experience

2023 **Teaching Assistant**, *Learning and Sequential Decision Making (CSCI 2951-F)*, Brown University

Spring 2023. 65 students

2023 **Guest Lecturer**, *Learning and Sequential Decision Making (CSCI 2951-F)*, Brown University

1 lecture. Spring 2023. 65 students

2022 **Guest Lecturer**, *Reintegrating AI (CSCI 2951-X)*, Brown University

1 lecture. Spring 2022. 30 students

Professional Experience

May–Aug. 2020 **Research Assistant**, *National University of Singapore*, Singapore

Advisor: Lee Wee Sun

Research on neural latent mapping for reinforcement learning and SLAM.

Jan 2019–Apr. 2020 **Student Intern**, *Mila (Quebec Artificial Intelligence Institute)*, Montreal, QC

Advisor: Joelle Pineau

Conducted research on model-based exploration for reinforcement learning.

May–Dec. 2018 **Research Software Development Engineering Intern**, *Microsoft Research*, Montreal, QC

Advisor: Marc-Alexandre Côté

Research in language modelling and generation, and reinforcement learning for text-based games. Contributor to the TextWorld framework.

Invited Talks

Aug. 2022 **Amii, University of Alberta**, *Tea Time Talk*

Agent-State Construction with Auxiliary Inputs

Dec. 2020 **NeurIPS**, *Oral presentation*

Novelty Search in Representational Space for Sample Efficient Exploration [\[recording\]](#)

Dec. 2018 **NeurIPS WordPlay Workshop**, *Oral presentation*

Towards Solving Text-based Games by Producing Adaptive Action Spaces

Professional Service

Conference Reviewing
NeurIPS 2021-2023; RLC 2024-2025

Miscellaneous Articles

May 2022 *How to: apply to and decide on (CS) PhD programs* [\[link\]](#)

Oct. 2018 *The dangers of reshaping and other fun mistakes I've learnt from PyTorch* [\[link\]](#)