

Harsh Satija

School of Computer Science
McGill University

harsh.satija@mail.mcgill.ca
🏠 hercky.github.io

Education

Ph.D., Computer Science McGill University Advisor: Joelle Pineau	2018 – Present
Master of Science, Computer Science McGill University Advisor: Joelle Pineau Thesis: Using Deep Reinforcement Learning for Online Machine Translation	2015 – 2017
B.Tech., Computer Science and Engineering International Institute of Information Technology (IIIT) - Hyderabad, India	2009 – 2013

Employment

Research Assistant, PhD Facebook AI Research, Montreal Worked on fundamental Reinforcement Learning research problems including exploration, transfer learning and building algorithms with safety guarantees.	2018 – 2019
Research Intern Google Research, Mountain View Worked on latent variable generative models for computer system optimization.	2017-2017
Data Scientist Sokrati, India Built real-time bidding agents and recommender systems at a digital advertising start-up.	2014–2015
Software Engineer Amazon, India Built management and monitoring web services for Amazon.com’s merchants.	2013–2014

Scientific works

CONFERENCE ARTICLES

1. **H. Satija**, A. Lazaric, M. Pirotta, and J. Pineau. Group Fairness in Reinforcement Learning. In *Transactions of Machine Learning (TMLR)*, 2023.
2. **H. Satija**, P. S. Thomas, J. Pineau, and R. Laroché. Multi-Objective SPIBB: Seldonian Offline Policy Improvement with Safety Constraints in Finite MDPs. In *Advances in Neural Information Processing*

Systems (NeurIPS), 2021.

3. S. Amin, M. Gomrokchi, H. Aboutaleb, **H. Satija** and D. Precup. Locally Persistent Exploration in Continuous Control Tasks with Sparse Rewards. In *International Conference for Machine Learning (ICML)*, 2021.
4. **H. Satija**, P. Amortila, and J. Pineau. Constrained Markov Decision Processes via Backward Value Functions. In *International Conference for Machine Learning (ICML)*, 2020.
5. A. Touati, **H. Satija**, J. Romoff, J. Pineau, and P. Vincent. Randomized value functions via multiplicative normalizing flows. In *Conference on Uncertainty in Artificial Intelligence (UAI)*, 2019.
6. **H. Satija**, and J. Pineau. Fictitious Play for learning Generative Adversarial Networks. In *Reinforcement Learning and Decision Making (RLDM)*, 2017.

PATENTS

1. US Patent 10,650,001 B2: Disaggregating Latent Causes for Computer System Optimization, 2020. M. Hashemi, P. Ranganathan, **H. Satija**.

PRE-PRINTS

1. S. Amin, **H. Satija**, M. Gomrokchi, H. van Hoof, D. Precup. A Survey of Exploration Methods in Reinforcement Learning [arXiv:2109.00157](https://arxiv.org/abs/2109.00157)
2. **H. Satija***, A. Zhang*, J. Pineau. Decoupling dynamics and reward for transfer learning. [arXiv:1804.10689](https://arxiv.org/abs/1804.10689)
3. **H. Satija***, J. Pineau. Simultaneous machine translation using deep reinforcement learning. In *ICML Workshop on Abstraction in Reinforcement Learning*, 2016.

Awards

IVADO Doctoral Excellence Scholarship

2021-2023

Teaching

I have been a Teaching Assistant at McGill University for:

- Reinforcement Learning, COMP-767 : Winter 2019
- Probabilistic Graphical Models, COMP-767 : Fall 2019
- Applied Machine Learning, COMP-551 : Fall 2016, Fall 2017, Winter 2018
- Artificial Intelligence, COMP 424 : Fall 2017, Winter 2017