ARUSHI JAIN

Mila, McGill University, Montreal, Canada

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RESEARCH INTERESTS

Reinforcement Learning (RL), AI for Life Science, Safety in RL, Exploration & Representation Learning.

EDUCATION

McGill University & **Mila**, Montreal, Canada
    Ph.D., Computer Science   GPA: 4.00/4.00   *Sept 2019 - Aug 2025*
    MSc, Computer Science   GPA: 4.00/4.00   *Sept 2017 - Sept 2019*
Supervisor: *Doina Precup*

Indraprastha Institute of Information Technology Delhi (IIIT-D), India
    Bachelor of Technology, Computer Science and Engineering   GPA: 9.42/10.00   *Aug 2012 - May 2016*

AWARDS

- **Borealis AI Fellowship** Graduate scholarship awarded to 10 students all over the Canada. Press coverage by McGill reporter, 2022
- **CRIM Scholarship** Awarded to two students annually by Bourse du Centre de Recherche Informatique de Montréal, 2018

SELECTED PUBLICATIONS

For full list, check out website and google scholar page.

1. **Adaptive Exploration for Data-Efficient General Value Function Evaluations**[Paper]
   Arushi Jain, Josiah Hanna, Doina Precup
   NeurIPS 2024, *EWRL 2024*

2. **Towards Painless Policy Optimization for Constrained MDPs**[Paper][Poster][Slides]
   Arushi Jain, Sharan Vaswani, Reza Babanezhad, Csaba Szepesvari, Doina Precup
   UAI 2022, *RLDM 2022* [**Paper**]

3. **Variance Penalized On-Policy and Off-Policy Actor-Critic**[Paper][Poster][Slide]
   Arushi Jain, Gandharv Patil, Ayush Jain, Khimya Khetarpal, Doina Precup
   AAAI 2021

4. **Safe Option-Critic: Learning Safety in the Option-Critic Architecture**[Paper][Poster][Slide]
   Arushi Jain, Khimya Khetarpal, and Doina Precup
   KER Journal 2021, *ICML Workshop 2018, NeurIPS Workshop 2019;*

RESEARCH & WORK EXPERIENCE

Lila Sciences, **Boston**   Sept 2026 - Present
ML Research Scientist

Designing reinforcement learning driven training for LLMs in life sciences, focusing on scalable multi-task learning and data efficiency.

[Microsoft Research](), **Amsterdam**   October 2024 - Jan 2025
Research Intern hosted by [Elise Van Der Pol]()

Designing reinforcement learning methods to optimize molecular synthesis pathways for drug discovery, leveraging exploration methods in RL to identify novel, stable molecular structures.

[Meta AI / Facebook AI Research (FAIR)](), **Paris**   October 2022 - Jan 2023
Research Intern hosted by [Alessandro Lazaric]()

Developed theoretical and practical unsupervised representation learning(successor features) and exploration strategies for zero-shot RL.

[Amazon](), **Montreal**   July 2022 - Sept 2022
Research Intern hosted by Abhijit Joshi

Developed batch off-policy RL solution to enhance recommender systems for long-term user satisfaction.

[SPORTLOGiQ](), **Montreal**   June 2019 - Sept 2019
Research Intern hosted by [Norm Ferns]()

Worked on formally contrasting agents in Markov Decision Process by developing behavioral pseudo-metrics using [lax-bisimulation]().

[Borealis AI](), **Edmonton**   May 2018 - Aug 2018
Research Intern hosted by [Nidhi Hedge]()

Designed safe and robust RL-based recommender systems for financial applications.

[Microsoft Research (MSR)](), **India**   June 2016 - July 2017
Research Fellow mentored by [Sundararajan Sellamanickam, Arun Iyer]()

Developed a [unsupervised hierarchical monitoring tool]() for service diagnostics.

COMMITTEE & REVIEWER

Committee Roles: Mila Admission Committee (2021), Mila Lab Representative (2021-2022), McGill University Representative, Computer Science Graduate Society (2021-2022)

Reviewer: RLC 2024, ICML 2024, NeurIPS 2023, AAAI 2022, AISTATS 2022, Decision Awareness in RL Workshop (ICML 2022), ML Standards Workshop (ICLR 2022), WiML Workshop (NeurIPS 2018)

TECHNICAL SKILLS & COURSEWORK

Programming Languages: Python, Tensorflow, Pytorch

Coursework: Reinforcement Learning, Probabilistic Analysis of Algorithms, Applied ML, Theoretical ML, Probabilistic Graphical Modeling, Matrix Computation, Mathematical Foundation of ML, Reinforcement Learning and Optimal Control.