ARUSHI JAIN

Mila, McGill University, Montreal, Canada
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RESEARCH INTERESTS

Reinforcement Learning (RL), Safe RL, Off-Policy RL, Constrained MDPs, RL for Recommender Systems.

EDUCATION

McGill University, Montreal, Canada
Ph.D., Computer Science GPA: 4.00/4.00 *Sept 2019 - Present*
MSc, Computer Science GPA: 4.00/4.00 *Sept 2017 - Sept 2019*
Mila
Supervisor: *Doina Precup*, *Pierre-Luc Bacon*

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 provided to 10 students all over the Canada. Press coverage by McGill reporter, 2022
- **Bourse du Centre de Recherche Informatique de Montréal (CRIM) pour Études Supérieures** Graduate scholarship offered to two students per year, 2018

SELECTED PUBLICATIONS

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

1. **Towards Painless Policy Optimization for Constrained MDPs**[Paper][Poster][Slides]
   Arushi Jain, Sharan Vaswani, Reza Babanezhad, Csaba Szepesvari, Doina Precup
   Uncertainty in Artificial Intelligence (UAI), 2022
   RLDM, 2022 [Paper]
2. **Variance Penalized On-Policy and Off-Policy Actor-Critic**[Paper][Poster][Slide]
   Arushi Jain, Gandharv Patil, Ayush Jain, Khimya Khetarpal, Doina Precup
   AAAI Conference on Artificial Intelligence (AAAI), 2021
3. **Safe Option-Critic: Learning Safety in the Option-Critic Architecture**[Paper][Poster][Slide]
   Arushi Jain, Khimya Khetarpal, and Doina Precup
   Published in special issue of The Knowledge Engineering Review (KER) Journal, 2021
   *ICML workshop, 2018; NeurIPS workshop, 2019; Springer Verlag **LNAI** Series*

RESEARCH & WORK EXPERIENCE

Meta AI / Facebook AI Research (FAIR), Paris October 2022 - Present
Research Intern hosted by Alessandro Lazaric

Developing theoretical and practical exploration and representation learning strategy that helps learn good representation (successor features) and explore the problem space in an unsupervised manner.

Mila, McGill University September 2017 - Present
Graduate Student advised by Doina Precup, Pierre-Luc Bacon

Developing smart exploration strategies by learning sampling policy which reduces the variance using Importance Sampling. This research can be used to evaluate multiple general value functions (GVFs) using a single exploration policy.

Amazon, California July 2022 - Present
Research Intern hosted by Abhijit Joshi

Focused on batch off-policy reinforcement learning solution to build recommender systems for long-term user satisfaction

SPORTLOGiQ, Montreal June 2019 - Sept 2019
Research Intern hosted by Norm Ferns

Worked on formally comparing and contrasting the agents in a given Markov Decision Process by coming up with behavioral pseudo-metrics following the work on *lax-bisimulation*.

Borealis AI, Edmonton May 2018 - Aug 2018
Research Intern hosted by Nidhi Hedge

Worked on safe reinforcement learning based recommender systems which maximizes the long-term goal and provides consistent recommendations with applicability in financial applications.

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

Developed a service monitoring and diagnostic tool for unsupervised hierarchical monitoring of services which replaced a heuristic-based system failing to jointly model multivariate time-series.

COMMITTEE & REVIEWER

Mila Admission Committee
Mila, 2021

Mila Lab Representative
Mila, 2021-2022

McGill University Representative
Computer Science Graduate Society, 2021-2022

Reviewer
AAAI, 2022
AISTATS, 2022
Decision Awareness in Reinforcement Learning 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.