Rupali Bhati

Education	Northeastern University (Supervisor: Christopher Amato) Ph.D., Computer Science GPA: 3.83/4.0	Boston, U.S.A. Sep 2023 - Present	
	Université Laval/ Mila (Supervisor: Audrey Durand) Masters, Computer Science (with thesis) GPA: 4.2/4.3	Quebec, Canada Sep 2020 - Aug 2023	
	Delhi Technological University (Supervisor: Indu Sreedevi) Bachelors, Electronics and Communication Engineering Aggregate percentage: 72.29% (WES equivalent 3.55/4.0)	New Delhi, India Aug 2012 - May 2016	
PUBLICATIONS	8. On Stateful Value Factorization in Multi-Agent Reinforcement Lear Enrico Marchesini, Andrea Baisero, Rupali Bhati , Christopher Amat	ning [link] o	
	7. Scalable Approaches for a Theory of Many Minds [link] Maximilian Puelma Touzel, Amin Memarian, Matthew Riemer, Andrei Mircea Romascanu, An- drew Williams, Elin Ahlstrand, Lucas Lehnert, Rupali Bhati , Guillaume Dumas, Irina Rish <i>ICML 2024 Agentic Markets Workshop</i>		
	6. Curriculum Learning for Cooperation in Multi-Agent Reinforcement Learning [link] Rupali Bhati , SaiKrishna Gottipati, Clodéric Mars, Matthew E. Taylor <i>NeurIPS 2023 Agent Learning in Open-Endedness Workshop</i>		
	5. Performative Prediction in Time Series: A Case Study [link] Rupali Bhati , Jennifer Jones, Kristin Campbell, David Langelier, Anthony Reiman, Jonathan Greenland, Audrey Durand <i>NeurIPS 2022 Workshop on Learning from Time Series for Health</i>		
	4. Summarizing Societies: Agent Abstraction in Multi-Agent Reinforcement Learning [link] Amin Memarian, Maximilian Puelma Touzel, Matthew D Riemer, Rupali Bhati , Irina Rish <i>ICLR 2022 From Cells to Societies: Collective Learning across Scales Workshop</i>		
	3. Interpret Your Care: Predicting the Evolution of Symptoms for Cancer Patients [link] Rupali Bhati, Jennifer Jones, Audrey Durand AAAI 2022 Trustworthy AI for Healthcare Workshop		
	2. CARL: Conditional-value-at-risk Adversarial Reinforcement Learning [link] Mathieu Godbout, Maxime Heuillet, Sharath Chandra, Rupali Bhati & Audrey Durand <i>AAAI 2022 Safe AI Workshop</i>		
	 A Reinforcement Learning Approach to Jointly Adapt Vehicular Communications and Planning for Optimized Driving [link] Mayank K. Pal, Rupali Bhati, Anil Sharma, Sanjit K. Kaul, Saket Anand & P.B.Sujit IEEE ITSC 2018 		
Scholarships and Awards	 2023 Khoury Distinguished Fellowship. 2023 Awarded Sony Interactive Entertainment Scholarship to attend the Summer School on AI and Games. Awarded first place at Game AI Jam at the Summer School on AI and Games. 2022 Google CSRMP: Selected for Google Computer Science Research Mentorship Program with mentor Wenhao Yu. 2022 Second place at the Rendez-Vous IA Quebec. 2022 Institute of Intelligence and Data (IID) Laval Tuition Scholarship. 2022 Nominated for Women in Artificial Intelligence Awards North America. 		

Machine Learning Alignment & Theory (MATS) Scholar

Supervisor: Christian Schroeder de Witt

• Explored the validity of the individual global max (IGM) principle during training in value decomposition methods using multi-agent reinforcement learning.

Graduate Research Assistant, Northeastern University

Supervisor: Christopher Amato

• Currently working on applying a novel value decomposition algorithm DuelMIX to the environment of Starcraft Multi-Agent Challenge (SMACv2).

Research Intern

AI Redefined

RESEARCH AND

Professional EXPERIENCE

> • Worked on achieving cooperation in multi-agent settings via curriculum learning and reinforcement learning in the game of Overcooked.

Graduate Research Assistant, Université Laval & Mila

Supervisor: Audrey Durand

- Addressed the problem of performative prediction in time-series data for predicting cancer-related fatigue and pain and successfully found stable points by applying repeated performative training.
- Formulated agent abstraction in the multi-agent setting and showed how it can help disentangle non-stationarity in the game of Diplomacy and achieve higher compression.

Reinforcement Learning Consultant

Multiple Companies

- At Bert Labs, applied RL to increase the energy efficiency of a HVAC system. For a leading global FMCG company's headquarters building, using DQN, increased efficiency of their Air-Handling Unit system by over 70% as compared to classical PID logic.
- Conducted a week long workshop to teach fundamentals of RL to employees at Adventum. Consulted on application of RL to improve segmentation in medical images.
- Worked with CatapulZ to develop RL blue agents to Capture-The-Flag in cybersecurity applications.
- Worked at UpGrad as a Domain Expert to develop an end-to-end solution for a model inventory management problem to meet next-to-next day demand using DDQN.

Research Assistant, Indraprastha Institute of Information Technology - Delhi

Sep 2017 - Aug 2018

Jun 2016 - Aug 2017

• Trained an autonomous vehicle to smartly adapt communications and planning actions, while achieving large driving utilities using Q-learning.

Data Analyst

Supervisor: Saket Anand

KPMG

• In collaboration with Microsoft, developed an algorithm using policy iteration for automating 'Dynamic Pricing of Tickets' to maximise revenue and help reduce human effort by upto 70-80%.

• Researched use cases of predictive and descriptive analytics to provide business insights to various government organisations which helped them automate processes and boost efficiency.

Teaching Experience	 Teaching Assistant, GIF-7005: Introduction to ML, U Mentor, Codementor [link] Teaching Assistant, Coding Blocks [link] Teaching Assistant, UpGrad 	Iniversité Laval Fall 2021 Fall 2019 - Summer 2020 Summer 2018 Fall 2018
Service	Organiser: Coordination and Cooperation in Multi-Agent Reinforcement Learning (Co MARL) Workshop at The Reinforcement Learning Conference 2024 [link] Organiser: Multi-Agent Learning Seminar [link] Reviewer: NeurIPS 2023, Montreal AI Symposium 2022, ITSC 2018 Facilitator: ICML WiML UnWorkshop: Machine Learning for Physical Sciences 2022	

Sep 2023 - Present

Jan 2023 - Jul 2023

June 2024 - Aug 2024

Sep 2020 - Aug 2023