

Shishir Sharma

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RESEARCH INTERESTS

My research focuses on reinforcement learning, especially model-based RL and multi-agent RL. More broadly, I am interested in using multi-agent systems as a conceptual lens for RL: studying how ideas developed for interacting decision-makers can inform learning, adaptation, and generalization even outside explicitly multi-agent environments.

EDUCATION

- Ph.D., Computer Science** 2021 – 2026 (expected)
McGill University & Mila, Montréal, QC | Advisors: Prof. Doina Precup & Prof. Theodore J. Perkins
- M.Sc., Computer Science** 2018 – 2021
McGill University & Mila, Montréal, QC | Advisor: Prof. Doina Precup
- B.E., Instrumentation and Control Engineering** 2011 – 2015
Netaji Subhas Institute of Technology (NSIT), University of Delhi, India

PUBLICATIONS

Conference Publications

- [C1] **Shishir Sharma**, Doina Precup, Theodore J. Perkins. “Fluid-Agent Reinforcement Learning.” *Proceedings of the 25th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2026. [arXiv]
- [C2] **Shishir Sharma**, Doina Precup. “Analytic Planning under Uncertainty via Moment Closure.” *Conference on Uncertainty in Artificial Intelligence (UAI)*, PMLR, 2026. *To appear*.
- [C3] **Shishir Sharma**, A. V. Subramanyam, Monika Jain, Ambuj Mehrish, Sabu Emmanuel. “Anti-forensic technique for median filtering using L1–L2 TV model.” *IEEE International Workshop on Information Forensics and Security (WIFS)*, 2016. [IEEE]
- [C4] **Shishir Sharma**, Ujjwal Kalra, S. Srivathsan, Vineet Kumar, K. P. S. Rana. “Efficient Air Pollutants Prediction using ANFIS Trained by Modified PSO Algorithm.” *4th IEEE International Conference on Reliability, Infocom Technologies and Optimization (ICRITO)*, 2015. [DOI]

Journal Publications

- [J1] **Shishir Sharma**, Hareesh Ravi, A. V. Subramanyam, Sabu Emmanuel. “Anti-forensics of Median Filtering and Contrast Enhancement.” *Journal of Visual Communication and Image Representation*, vol. 66, 102682, 2020. [Elsevier]

Theses

- [T1] **Shishir Sharma**. “Planning with Gaussian Distribution Models.” Master’s thesis, McGill University, 2021. [McGill]

RESEARCH EXPERIENCE

Graduate Researcher — Reasoning and Learning Lab, Mila / McGill University 2018 – Present
Montréal, QC | Advisors: Prof. Doina Precup & Prof. Theodore J. Perkins

Research Associate — IIIT Delhi 2016 – 2018
New Delhi, India | Advisor: Dr. A. V. Subramanyam

- Multimedia forensics and visual tracking; designed counter-forensic attacks against state-of-the-art median-filtering and contrast-enhancement detectors.

TALKS & ACADEMIC SERVICE

Fluid-Agent Reinforcement Learning Jun. 2025
IVADO (AI research consortium), Montréal, QC, Canada

- **Reviewer** — Conference on Uncertainty in Artificial Intelligence (UAI), 2026

TEACHING EXPERIENCE

Graduate Teaching Assistant — McGill University 2018 – 2024

- COMP 250 Introduction to Computer Science, COMP 251 / 252 Data Structures & Algorithms (incl. Honours), COMP 321 Programming Challenges.
- Designed quizzes and assignments, held weekly office hours, and organized competitive-programming contests for over 100 students.

INDUSTRY EXPERIENCE

Business Analyst — EXL Services 2015 – 2016
India

- Performed model monitoring for the credit-card portfolio of a top-5 UK-based bank; computed the Gini coefficient and Population Stability Index (PSI) and refit underwriting and impairment models under target-population shift.

HONORS & AWARDS

- Graduate Excellence Fellowship, McGill University 2023 – 2025
- DeepMind Graduate Award, Mila 2020 – 2022
- First Prize, Poster Presentation, Research Showcase, IIIT Delhi 2017
- Best Paper Award, ICRITO (IEEE conference) 2015
- All-India Rank 7,080 in IIT-JEE (out of 400,000+ candidates) 2011

TECHNICAL SKILLS

- **Programming:** Python, C++, Java, C
- **ML / DL frameworks:** JAX, PyTorch
- **Tooling:** Weights & Biases, CometML, Hydra; multi-device / distributed parallelism
- **Other:** LaTeX, MATLAB