

Amit Sinha

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Affiliations: Mila [🔗](#), CIM [🔗](#), Gerad [🔗](#)

Research Interests

Machine learning ; reinforcement learning ; representation learning; multi-agent systems; robotics

Education

PhD	McGill University , Electrical and computer engineering	Montréal, QC Jan 2021 – Dec 2025
	<ul style="list-style-type: none"> GPA: 3.85/4.0 Thesis: Reinforcement learning in partially observable systems and multi-agent team-based systems 	
MSc	McGill University , Electrical and computer engineering	Montréal, QC Aug 2018 – Dec 2020
	<ul style="list-style-type: none"> GPA: 4.0/4.0 Thesis: Reinforcement learning in partially observable environments using approximate information state (thesis 🔗) 	
BE	Birla Institute of Technology, Mesra , Electrical and electronics engineering	Ranchi, India Aug 2013 – Jun 2017
	<ul style="list-style-type: none"> GPA: 8.11/10.0 	

Experience

McGill University , Research Assistant	Montréal, QC May 2019 - Dec 2025
<ul style="list-style-type: none"> Reinforcement learning algorithms for partially observable systems and multi-agent systems 	
Indian Institute of Science , Project Assistant	Bangalore, India Aug 2017 - Aug 2018
<ul style="list-style-type: none"> Automation in Volvo trucks for proximity detection through vehicle detection Creating reusable vision-based maps through simultaneous localization and mapping 	
IBM Research Labs , Research Intern	Bangalore, India May 2016 - Jul 2016
<ul style="list-style-type: none"> Design of an IoT-based system for video-based activity detection using motion detection and face detection 	

Featured Publications

- Periodic agent-state based Q-learning for POMDPs** ([paper](#) [🔗](#)) Dec 2024
38th Conference on Neural Information Processing Systems (Neurips 2024)
 Amit Sinha, Matthieu Geist, Aditya Mahajan
- Agent-state based policies in POMDPs: Beyond belief-state MDPs** ([paper](#) [🔗](#)) Dec 2024
 Tutorial paper in *63rd IEEE Conference on Decision and Control (CDC 2024)*
 Amit Sinha, Aditya Mahajan
- Dealing With Non-stationarity in Decentralized Cooperative Multi-Agent Deep Reinforcement Learning via Multi-Timescale Learning** ([paper](#) [🔗](#)) Aug 2023
2nd Conference on Lifelong Learning Agents (CoLLA 2023)
 Hadi Nekoei, Akilesh Badrinaaraayanan, **Amit Sinha**, Mohammad Amini, Janarthanan Rajendran, Aditya Mahajan, Sarath Chandar

- **Approximate information state for approximate planning and reinforcement learning in partially observed systems** ([paper](#)) ([code](#))

Feb 2022

Journal of Machine Learning Research (JMLR)

Jayakumar Subramanian, **Amit Sinha**, Raihan Seraj, Aditya Mahajan

For an exhaustive list of all publications, see [here](#).

Academic Achievements and Awards

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| • Arthur Allan McAlear Fellowship (McGill) | Jan 2021 |
| • McGill Engineering Doctoral Award (McGill) | Jan 2021 |
| • Masters Top-Up award (McGill) | Oct 2020 |
| • FRQNT scholarship (Québec) | May 2020 |
| • Graduate Excellence Fellowship award (McGill) | Aug 2018 |
| • Qualified in Zonal Informatics Olympiad 2013. | Jan 2013 |
| • Qualified in the Karnataka Regional Mathematical Olympiad 2012. | Jan 2012 |

Volunteering

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| • Volunteered to help in training sessions for athletes with disabilities for Olympiques spéciaux Québec. | Jan 2020 |
| • Volunteer to help new international students in the International Buddy Program at McGill University. | Aug 2019 |
| • Volunteered to help new students get acclimated to daily life around McGill University as a student facilitator. | Aug 2019 |
| • Volunteer at the International Conference of Robotics and Automation. | May 2019 |

Professional References

Available upon request.