

Montaser Fathelrhman Hussen Mohammedalamen

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Education:

- Jan 2022- Sep 2027 PhD [Computing Science](#), University of Alberta, Research topic: Reinforcement Learning with Partially Observable Rewards. Advised by [Prof. Michael Bowling](#).
- Sep 2018- Sep 2019 M.Sc. Machine Intelligence, African Master in Machine Intelligence ([AMMI](#)), African Institute for Mathematical Sciences ([AIMS](#)), Rwanda. (overall score 75%).
- Aug 2013- Sep 2018 B.S.c, Honors Electronics & Computer Engineering with First Class Honors, [University of Khartoum](#), Sudan (ranked 3rd in the Electronics department, CGPA 7.5/10).

Work Experience:

- Jan 2021 - Oct 2022 AI Engineer, [SonyAI](#), Designing a Multi-agent high dynamic environment in a physics simulator, Training robust agents cooperatively and competitively with Self-play and Goal-conditioned RL, transfers learned policies to the world and integrates them with vision systems and robot control methods. Tokyo, Japan.
- Feb 2020 - Dec 2020 Research Associate, [University of Alberta](#), develop an algorithm that automatically behaves cautiously in novel circumstances using robust optimization. Supervised by [Prof Michael Bowling](#). Edmonton, Canada.
- June 2020 - Oct 2020 AI Engineer [SonyAI](#). Develop Reinforcement Learning algorithms for skill acquisition via imitation learning in cooking robots with visual feedback. Tokyo, Japan (remotely).
- July 2019 - Jan 2020 Machine learning Intern, [SonyAI](#). Tokyo, Japan.

Publications:

1. **Montaser Mohammedalamen**, Dustin Morrill, Alexander Sieusahai, Yash Satsangi, and Michael Bowling, “Learning to Be Cautious Using Counterfactual Regret Minimization”, (Under review) [arXiv preprint 2110.15907](#), 2025.
2. **Montaser Mohammedalamen**, and Michael Bowling, “Generalization in Monitored Markov Decision Processes”, (Under submission) 2025.
3. Simone Parisi, **Montaser Mohammedalamen**, Alireza Kazemipour, Matthew E. Taylor, and Michael Bowling “Monitored Markov Decision Processes”, International Conference on Autonomous Agents and Multiagent Systems (AAMAS) Auckland, New Zealand, 2024, [ifaamas P1549](#)
4. **Montaser Mohammedalamen** and Benjamin Rosman, “Learning Actions Representation In Reinforcement Learning for Safe Exploration”, Master Thesis. 2019
5. D. Khamies, **Montaser Mohammedalamen**, and Rosman. “Transfer Learning for Prosthetics Using Imitation Learning”. *Black in AI workshop, NeurIPS*, arXiv preprint [1901.04772](#), 2018.

Projects:

1. **Monitored Markov Decision Processes:** RL assumes that the reward is observable to the agent all the time, but is often not applicable in some real-world problems, **Mon-MDPs** present a new framework to tackle that by discussing the theoretical and practical consequences of this setting. [Talk](#)
2. **Learning to be Cautious:** An algorithm that automatically behaves cautiously and safely in novel circumstances, without prior knowledge or human supervision. [GitHub](#), [Talk](#)
3. **Cooking Robot:** One of SonyAI's projects in gastronomy, My role is to learn a Robot's policy to acquire cooking skills via RL and Imitation Learning with visual feedback.
4. **Transfer Learning for Prosthetics Using Imitation Learning:** Build a Prosthetics controller with RL that learns to walk like humans, and uses Imitation Learning to accelerate learning. [GitHub](#)
5. **Implement** Behaviour Cloning (BC) and [Behaviour Cloning from Observation \(BCO\)](#) papers [GitHub](#).
6. **Fairness in ML:** Train a classifier with a fair representation that hides sensitive attributes. [GitHub](#)
7. **Wheelchair robot Controlled by Brain Signal:** A wheelchair robot helps disabled people move using EEG signals from the brain. [GitHub](#)

Awards and Accolades:

Sep 2023	Graduate Student Engagement Scholarship at the University of Alberta 10,000 CAD .
Sep 2022	Graduate Student Engagement Scholarship at the University of Alberta 10,000 CAD .
Sep 2019	AMMI M.Sc. scholarship, 4% acceptance rate Africa-wide 15,000 USD .
Dec 2017	Undergraduate research prize "Wheelchair Robot controlled by Brain" 2,000 USD , University of Khartoum, Sudan.
Nov 2017	Audiences Prize, Falling Walls Lab finals "Wheelchair controlled by Brain". Berlin, Germany
Nov 2016	Ericsson Scholarship, ICT Professional Foundation Ericsson Middle East University Program.
Oct 2016	IEEE Extreme 10.0 programming competition (5 th of Sudan, 988 of 2500 teams globally).
2015-2016	Patents "Wheelchair Robot controlled by Brain signal" 4254 and "Smart Farm" 3334. Sudan.

Skills:

Programming Languages:

- Python, C++.
- JAX.
- PyTorch, TensorFlow.

Machine Learning:

- Reinforcement Learning (RL).
- Multi-agent RL.
- Imitation Learning.
- Computer Vision.
- Game Theory.
- CNN, RNN, LSTM.
- LLM.

Other:

- Robotics, ROS.
- Physics Simulation.
- Parallel & Distributed computing
- Git.
- AWS, GCD, Slurm.