Mohammad Reza Samsami

M.Sc. Student · Computer Science / Artificial Intelligence

Mila - Quebec AI Institute / Université de Montréal

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Research Interests

(Model-based, Offline) Reinforcement Learning, Causality, Foundation Models, Memory

Education

Mila - Quebec AI Institute / Université de Montréal   *Montréal, Canada*
M.Sc. in Computer Science   *2021 - 2023*
- Supervisors: Prof. Sarath Chandar, Prof. Irina Rish
- **GPA: 4.15 / 4.3**

Sharif University of Technology   *Tehran, Iran*
B.Sc. in Computer Science   *2016 - 2021*
- **GPA: 18.18 / 20**

Selected Honors & Grants

Nov. 2023	**Merit-based Scholarship for Excellence in Research**, Université de Montréal
Apr. 2023	**Merit-based Scholarship for Excellence in Research**, Université de Montréal
2022	**Merit-based Scholarship for Supporting the Studies and Research**, Université de Montréal
2019	**Granted the Travel and Conference Fund**, Association for Computational Linguistics
2015	**Silver Medal in Iranian National Olympiad in Informatics (INOI)**, Young Scholar Club
2016	**Ranked Top 0.3%**, Iran's Universities Entrance Exam

Publications

M. R. Samsami, A. Zholus, J. Rajendran, S. Chandar. 2023. Mastering Memory Tasks with World Models. Under Review.

S. Joseph, A. Zholus, **M. R. Samsami**. 2023. Mining the Diamond Miner. ATTRIB at NeurIPS.

M. R. Samsami, M. Bahari, S. Salehkaleybar, A. Alahi. 2023. Causal Imitative Model for Autonomous Driving. Under Review.

F. Hosseini, H. Fooladi, **M. R. Samsami**. 2019. Recognizing arrow of time in the short stories. WiNLP at ACL.

M. R. Samsami, H. Alimadad. 2020. Distributed Deep Reinforcement Learning: An Overview. Preprint.

Teaching Experience

2016 - 2019	**Algorithm Design and Programming for Olympiad**, Instructor	*Karaj, Iran*
2019 - 2021	**Linear Programming, Information Theory**, Teaching Assistant at Sharif University	*Tehran, Iran*

Open Source Contribution

RLHive. We created a framework designed to facilitate research in RL. My contributions included developing recurrent agents, performing unit tests, optimizing functions, and reviewing PRs.

Skills

Machine Learning and Data Analytics: JAX, PyTorch, TensorFlow, Scikit-Learn, Spark, Pandas.

Programming Languages: Python, C++, C, Java

Professional and Research Experience

ServiceNow *Montreal - Canada*
VISITING RESEARCHER *2023 - Pres.*

Within the Human Decision Support team, I'm leading a project to **boost fine-tuned LLMs' performance** by augmenting human feedback data with LLM-generated samples in a principled manner.

Mila - Quebec AI Institute *Montreal - Canada*
RESEARCH STUDENT *2021 - Pres.*

I've been engaged in **multiple RL projects**, covering aspects such as causality, agent memory enhancement, and reverse engineering to understand agent's behavior. My recent work is currently under review for conferences, including **ICLR 2024**.

MetoData *Tehran - Iran*
DATA SCIENTIST *2021*

I contributed to our team's mission of building autonomous agents for quantitative finance by creating a **crypto trader using deep RL**, specializing in Bitcoin-to-USD trading. The resulting product, Metodify, caters to SMEs.

Ecole polytechnique fédérale de Lausanne (EPFL) *Lausanne - Switzerland*
RESEARCH INTERN *2020 - 2021*

I led a project on **causal imitation learning for autonomous driving**, resulting in an under-reviewed paper.

Shenakht Pajouh *Tehran - Iran*
RESEARCHER AND PROGRAM MANAGER *2017 - 2020*

I held the positions of researcher and program manager at Shenakht Pajouh. I was actively involved in a research initiative aimed at **acquiring fundamental concepts of linguistics to develop AI models capable of language comprehension**.

Selected Courses

Reinforcement Learning, Robot Learning, Representation Learning, Causal Inference, Convex Optimization, Probabilistic Graphical Models, Information Theory, Game Theory, Distributed Systems, Stochastic Processes, Neural Scaling Laws

Extracurricular Activities

2020-2021.	**Sharif Causal AI Journal Club**, Member	*Sharif Uni.*
2017-2019	**Sharif Cognitive Science Community (Shenasa)**, Founding Member of the Central Council	*Sharif Uni.*
2017-2018	**Student's Scientific Association of the Department**, Member of Central Council	*Sharif Uni.*
2017	**Sharif Data Science Conference**, Co-Organizer	*Sharif Uni.*
2022-Pres.	**Social Events**, Organizer	*Mila*
2022, 2023	**Conference on Lifelong Learning Agents**, Volunteer	*McGill*