

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, State Space Model

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. Zhohus, J. Rajendran, S. Chandar. 2024. Mastering Memory Tasks with World Models. ICLR, **top-1.2%**.
- S. Joseph, A. Zhohus, **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

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| 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 |