

Maryam Amirizani (She/Her)

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Interests

Natural Language Processing • Recommendation and Search • Personalization • Large Language Models • Agents • Artificial Intelligence • Machine Learning

Skills

Programming Python (Numpy • Pandas • Pytorch • Tensorflow • Scikit-learn • Keras • etc.) • R • SQL
Other Skills AWS (EC2 • SageMaker) • C/C++ • Power BI • Tableau • SAS • IBM SPSS
General Skills Detail-oriented • Fast-learner • Problem-solver • Team-worker • Leadership

Education

Sep 2022 – Present

PhD. in Information Science.

University of Washington, Seattle, WA, USA.

Projects: Information Retrieval, Personalization, Reasoning in LLMs.

Supervised by: [Dr. Chirag Shah](#); GPA: 3.94/4.00

Sep 2019 – Apr 2021

MSc. in Management (Information Technology Management).

Ryerson University, Toronto, ON, CA.

Thesis: A Sentiment Analysis of Blockchain Technology in Fintech Sector by ML and NLP Models.

Supervised by: [Dr. Farid Shirazi](#); GPA: 4.12 / 4.33

Experiences

Sep 2022 – Present

Research Assistant, University of Washington (InfoSeeking Lab), Seattle, WA, USA:

- Applying IR methodologies to audit the performance of agents and Large Language Models (LLMs) in reasoning.
- Applying a Heterogeneous Graph Neural Network (HGNN) methodology to retrieve relevant information and optimum personalization of IR and recommendation systems performance.

Mar 2022 – Aug 2022

Data Science Associate, EMC Research, Seattle, WA, USA:

- Delivered predictive and ML methods (Supervised/Unsupervised) with high accuracy to forecast and enhance clients' ROI.

May 2021 – Sep 2021

Machine Learning Researcher, Tandem, Toronto, ON, CA:

- Used ML and sentiment analysis methods to analyze customers' reviews text and numeric rates of theatres. To do so, SVC, CNN, Bi-LSTM, and an ensemble model were developed to predict the polarity of reviews.

Publication

- M. Amirizani, E. Martin, A. Lavergne, A. Mashhadi, and C. Shah, "Are LLMs able to self-check their reasoning?". Under Review.
- M. Amirizani, A. Lavergne, E. Okada, A. Chadha T. Roosta and C. Shah, "LLMAuditor: A framework for auditing LLMs using human-in-the-loop". Under Review. [PAPER LINK.](#)
- M. Amirizani, "Mind Over Machine: Evaluating Theory of Mind Reasoning in LLMs and Humans". ACM WSDM 2025.
- M. Amirizani, M. Sivachenko, A. Lavergne, and C. Shah, A. Mashhadi, "Does Memorization Affect LLMs' Social Reasoning? An Evaluation on Seen and Unseen Queries". ACM WSDM 2025.
- M. Amirizani, E. Martin, M. Sivachenko, A. Mashhadi, and C. Shah, "Can LLMs reason like humans? assessing theory of mind reasoning in LLMs for open-ended questions". CIKM 2024. [PAPER LINK.](#)

- M. Amirizani, T. Roosta, A. Chadha and C. Shah, “**AuditLLM: A tool for auditing large language models using multiprobe approach**”. CIKM 2024. [PAPER LINK.](#)
- M.Amirizani, “**Assessing Human Viewpoints in Theory of Mind for Large Language Models in Open-Ended Questioning**”. CIKM 2024. [PAPER LINK.](#)
- M. Amirizani , S. Sarkar and, C. Shah, “**Towards More Personalized Recommendations By Modeling Users' Temporal Behaviors With Task-based Graph Neural Network (TGNN)**”. Submitted to ACM Tweb Journal.
- S. Sarkar, M. Amirizani and, C. Shah, “**Representing tasks with a graph-based method for supporting users in complex search tasks**”. ACM CHIIR 2023. [PAPER LINK.](#)
- B. Bhowmic, M. Amirizani and, F. Shirazi, “**Sentiment analysis of blockchain technology in the financial sector (Fintech) by machine learning and deep learning models.**” The 24th International Conference on Artificial Intelligence, 2022.
- M. Li, M. Amirizani and, R. Kashef, “**Efficient comorbidity analysis in brain disorders reveals better diagnosis**”. IEEE International Conference on Data Science and Systems, 2021. [PAPER LINK.](#)

Awards

- 2024 NSF student travel grants, CIKM Conference.
- 2024 NSF student travel grants, SIGIR Conference.
- 2021 Nominated for the best thesis awards, Ryerson University.
- 2020 Ontario Graduate Scholarship (OGS).
- 2019 Graduate Entrance Awards. Ted Rogers School of Management, Ryerson University.
- 2019 Awards for the academic year 2019-2020. Ryerson University.

Voluntary Experience

- 2024 Student volunteer in SIGIR conference.
- 2023-2024 DSA in ischool, University of Washington.
- 2023 Organizing Gen-AI workshop in Microsoft and University of Washington
- 2021 Mentoring first-year students in MSCM program, Ryerson University.
- 2020 Orientation Leader Assistant: Answering students’ questions about MSCM program and courses syllables in New Students Orientation meetings. Ryerson University.
- 2019 Session coordinator in ASAC 2020 conference. Online Conference.