

SAJAD EBRAHIMI

[EMAIL](#) | [LINKEDIN](#) | [GITHUB](#) | [WEBSITE](#) | TORONTO, ON

RESEARCH INTERESTS

- Natural Language Processing
- Generative Ranking
- Information Retrieval
- Query Performance Prediction
- Deep Learning
- Reviewer Assignment Problem

EDUCATION

M.A.Sc. in Computer Engineering | UNIVERSITY OF GUELPH Canada | Fall 2023 -

- **CGPA:** 90/100
- **Thesis:** Diffusion Models Meet Learning-to-Rank: A Generative Revolution

B.Sc. in Computer Engineering | FERDOWSI UNIVERSITY OF MASHHAD Iran | Fall 2018 - Winter 2023

- **CGPA:** 81/100
- **Selected courses:** Fundamentals of Information Retrieval(A+), Data Mining(A+), Database(A+)

RESEARCH EXPERIENCE

Faculty Affiliate Researcher | VECTOR INSTITUTE July 2024 -

Graduate Research Assistant | UNIVERSITY OF GUELPH Fall 2023 -

Supervisors: [Dr. Ebrahim Bagheri](#) and [Dr. Fattane Zarrinkalam](#)

- Enhancing the Query Performance Prediction (QPP) results by implementing a novel framework - Developing low-resource ranker based on Reinforcement Learning algorithms - Working on Generative Learning-to-Rank models inspired by DDPM idea - Conducting research on generative adversarial attacks on graphs

Research Intern | TORONTO METROPOLITAN UNIVERSITY Fall 2022 - Summer 2023

Supervisor: [Dr. Ebrahim Bagheri](#)

- Improving dense retriever utilizing Entity Linking - Enhancing the performance of QPP models by enriching query representations, incorporating information from similar queries into the input.

Research Assistant | FERDOWSI UNIVERSITY OF MASHHAD Summer 2021 - Summer 2022

Supervisor: [Dr. Behshid Behkamal](#)

- Designing an effective data structure - Developing scrapers to find universities' course catalogs data - Text summarizing and Keyword extracting by state-of-the-art models

WORK EXPERIENCE

Data Scientist | [REVIEWERLY](#) Toronto, Canada | Nov 2023 -

- Trained a model inspired by the Dense Retriever for the Reviewer Assignment Problem (RAP) task.
- Formulated a pipeline for clustering proposals and selecting an expert from the relevant pool for each cluster.

Data Analyst | KAVA TAHLIL Tehran, Iran | Sept 2021 - Aug 2022

- Developed a scraper to gather data from various sources of the Tehran Stock Exchange and store it in MongoDB.
- Designed data models for different types of stocks and organized data.
- Recognized, analyzed, and interpreted trends and patterns in complex financial data.

Software Engineer Intern | ZIMA Iran | Sept 2020 - Feb 2021

- Acquired essential knowledge in backend development, REST API implementation, and database design.

Web Developer Intern | ILIASYSTEM CO. Iran | Aug 2019 - Feb 2020

- Learned the fundamentals of Web development, Got familiar with HTML / CSS / JS.

SKILLS

Languages: Python, C, C++, Java

Python Frameworks and Packages:

- PyTorch, TensorFlow, Transformers, Pandas, NumPy, Matplotlib, SKlearn, NLTK, spaCy, Beir
- Django, Django Rest Framework, Flask, Fastapi
- Selenium, Pytest, Doctest, BeautifulSoup4

Databases: PostgreSQL, MongoDB, SQLite, MySQL, Milvus

Misc: Git, Docker, Elasticsearch, Nginx, GraphQL, HTML/CSS, \LaTeX , Unix-based OS

PUBLICATIONS

exHarmony: Authorship and Citations for Benchmarking the Reviewer Assignment Problem ECIR'25
S.Ebrahimi, S.SALAMAT, N.ARABZADEH, M.BASHARI, E.BAGHERI

[Gender Disentangled Representation Learning in Neural Rankers](#) MLJ'24
SH.SEYEDSALEHI, S.SALAMAT, N.ARABZADEH, **S.Ebrahimi**, M.ZIHAYAT, E.BAGHERI

[Estimating Query Performance Through Rich Contextualized Query Representations](#) ECIR'24
S.Ebrahimi, M.KHODABAKHSH, N.ARABZADEH, E.BAGHERI

[Reviewerly: Modeling the Reviewer Assignment Task as an Information Retrieval Problem](#) CIKM'24
N.ARABZADEH, **S.Ebrahimi**, S.SALAMAT, M.BASHARI, E.BAGHERI

Estimating Query Performance Using Neural Query Space Proximity *TIST'24
A.BIGDELI, **S.Ebrahimi**, N.ARABZADEH, S.SALAMAT, SH.SEYEDSALEHI, F.ZARRINKALAM, E.BAGHERI

Reinforcement Learning for Effective low-resource Ranking In prepration
SH.SOLEIMANY, **S.Ebrahimi**, SH.SEYEDSALEHI, F.ZARRINKALAM, E.BAGHERI

Bias-aware Curriculum Sampling for Fair Ranking In prepration
SH.SEYEDSALEHI, HS.LE, S.SALAMAT, **S.Ebrahimi**, M.ZIHAYAT, E.BAGHERI

From Noise to Order: Diffusion-Powered Learning-to-Rank In prepration
S.Ebrahimi, H.WU, Y.YUAN, N.ARABZADEH, B.MITRA, F.ZARRINKALAM, E.BAGHERI

* These works have been submitted and are under review.

TALKS

- Reviewerly: A High Quality Peer Reviewer Suggestion Application, *OpenAlex Virtual User Conference* May 2024
- Intro to Neural Information Retrieval, *Special Topics in Information Retrieval, University of Guelph* Nov 2023

AWARDS AND ACKNOWLEDGEMENTS

- Braithwaite Conference Travel Grant to attend ACML'24 Conference 2024
- University of Guelph [College of Engineering Dean's Graduate Entrance Scholarship](#), University of Guelph 2023
- Entrance Award in Recognition of Student Excellence in the College of Engineering 2023

SELECTED PROJECTS

[Neural Retriever utilizing Entities](#) 2023

A retrieval model that enriches the representation of the queries and passages by the representation of their entities.

[QR Code Ticket System](#) 2022

An app that generates a QR code for users and provides a QR reader for the receptionist to verify each ticket.

LANGUAGES

- **English:** Fluent
- **Persian:** Native

TEACHING EXPERIENCE

Teacher Assistant | FERDOWSI UNIVERSITY OF MASHHAD

Iran | 2019 - 2023

- Information Retrieval, Fall 2022 - Winter 2023
- Data Mining, Winter 2022
- Database, Fall 2021 - Winter 2022
- Computer Architecture, Fall 2020 - Winter 2021
- Discrete Mathematics, Winter 2020
- Object Oriented Programming, Winter 2020
- Fundamentals of Computer Programming, Fall 2019

Middle School Instructor | ANDISHE IRANIAN SCHOOL

Iran | 2020 - 2021

Taught fundamentals of computer programming to students aged 13 to 16.

REFERENCES

References will be available upon request.