

SAJAD EBRAHIMI

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Research Interests

- Natural Language Processing
- Information Retrieval
- Deep Learning
- Generative Ranking
- Query Performance Prediction
- 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 Summer 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 based on Nearest Neighbor Queries - 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, L^AT_EX, Unix-based OS

Publications

exHarmony: Authorship and Citations for Benchmarking the Reviewer Assignment Problem

S.Ebrahimi, S.SALAMAT, N.ARABZADEH, M.BASHARI, E.BAGHERI

ECIR'25

Gender Disentangled Representation Learning in Neural Rankers

SH.SEYEDSALEHI, S.SALAMAT, N.ARABZADEH, **S.Ebrahimi**, M.ZIHAYAT, E.BAGHERI

MLJ'24

Estimating Query Performance Through Rich Contextualized Query Representations

S.Ebrahimi, M.KHODABAKHSH, N.ARABZADEH, E.BAGHERI

ECIR'24

Reviewerly: Modeling the Reviewer Assignment Task as an Information Retrieval Problem

N.ARABZADEH, **S.Ebrahimi**, S.SALAMAT, M.BASHARI, E.BAGHERI

CIKM'24

Estimating Query Performance Using Neural Query Space Proximity

A.BIGDELI, **S.Ebrahimi**, N.ARABZADEH, S.SALAMAT, SH.SEYEDSALEHI, F.ZARRINKALAM, E.BAGHERI

*TIST'24

Reinforcement Learning for Effective low-resource Ranking

SH.SOLEIMANY, **S.Ebrahimi**, SH.SEYEDSALEHI, F.ZARRINKALAM, E.BAGHERI

*SIGIR'25

Bias-aware Curriculum Sampling for Fair Ranking

SH.SEYEDSALEHI, HS.LE, S.SALAMAT, **S.Ebrahimi**, M.ZIHAYAT, E.BAGHERI

*SIGIR'25

Adversarial Graph Attack by Diffusion Models

M. HOSSEINI, **S.Ebrahimi**, A. BIGDELI, R. HAMIDI RAD, E.BAGHERI

*SIGIR'25

* 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 Honors

- ECIR Student Support Grant to attend ECIR'25 Conference (330 EUR) 2025
- Braithwaite Travel Grant to attend SIGIR-AP'24 Conference (415 CAD) 2024
- Braithwaite Travel Grant to attend ACML'24 Conference (2,600 CAD) 2024
- Braithwaite Travel Grant to attend ECIR'24 Conference (2,800 CAD) 2024
- University of Guelph [College of Engineering Dean's Graduate Entrance Scholarship](#) (5,000 CAD) 2023
- Entrance Award in Recognition of Student Excellence in the College of Engineering (12,000 CAD) 2023

Selected Projects

- Neural Retriever utilizing Entities

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

2023
- QR Code Ticket System

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

2022

Teaching Experience

Teacher Assistant Ferdowsi University of Mashhad	Iran 2019 - 2023
<ul style="list-style-type: none">• Information Retrieval, Fall 2022 - Winter 2023• Data Mining, Winter 2022• Database, Fall 2021 - Winter 2022• Computer Architecture, Fall 2020 - Winter 2021	<ul style="list-style-type: none">• 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.	

Volunteer Experience

Senior Member Scientific Society of Computer Engineering Students of Ferdowsi University of Mashhad	2019 - 2022
Senior Member Linux Users' Group of Ferdowsi University of Mashhad	2022
Executive chair 3-Minutes Presentation Competition of Ferdowsi University of Mashhad	2021
Senior Executive Committee Member International Conference on Computer and Knowledge Engineering	2021
Senior Executive Committee Member FUM Collegiate Programming Contest (FCPC)	2019

References

References will be available upon request.

Last updated on Feb 2, 2025.