Sajad Ebrahimi

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Summary

- Graduate researcher in **NLP and Information Retrieval** with 6+ peer-reviewed publications (TIST, SIGIR, ECIR, CIKM); focus on Generative approaches for ranking, Learning to Rank, Diffusion Models, and Automated Scholarly Peer Review. For the latest list of my publications, please refer to my Google Scholar.
- Over 5 years of hands-on coding experience, spanning roles as a Data Scientist and a Software Engineer, specializing in designing, building, and deploying production-scale software and machine learning systems. Advanced proficiency in PyTorch, Django, Accelerate, Transformers, and related tools, with extensive experience delivering production-grade machine learning solutions.

Education

M.A.Sc. in Computer Engineering, University of Guelph   Guelph, Canada | 2023 - 2025
Supervisors: Dr. Fattane Zarrinkalam and Dr. Ebrahim Bagheri
Affiliated with Vector Institute for Artificial Intelligence as Faculty Affiliate Researcher

- **GPA**: 89/100
- **Thesis**: DiffusionRank: A Denoising Diffusion Framework for Learning to Rank

B.Sc. in Computer Engineering, Ferdowsi University of Mashhad   Mashhad, Iran | 2018 - 2023

- **GPA**: 81/100

Research Experience

Graduate Research Assistant, University of Guelph   Fall 2023 - Summer 2025
Supervisors: Fattane Zarrinkalam and Ebrahim Bagheri

- Worked on applying the concept of DDPMs to Learning-to-Rank, resulting in a model that improves NDCG by up to 3.25% on benchmark datasets.

Research Intern, Toronto Metropolitan University   Fall 2022 - Summer 2023
Supervisor: Ebrahim Bagheri

- Proposed a novel Query Performance Prediction (QPP) framework using Nearest Neighbor Queries, achieving up to 4% improvement in Kendall's τ on benchmark datasets.
- Worked on improving the retrievers by utilizing Entity Linking; Used TagMe to extract the entities.

Research Assistant, Ferdowsi University of Mashhad   Summer 2021 - Summer 2022
Supervisor: Behshid Behkamal

- Created a structured dataset by designing a data format with 19 key course features and developing a scraper to collect course information from top-ranked universities' catalogs.

Work Experience

Data Scientist, Reviewerly   Toronto, Canada | Nov 2023 -

- Built and now maintain a Milvus-backed index of 260M+ papers and 96M+ authors, delivering sub-second similarity search that powers Reviewerlys matching engine, adopted by two peer-review venues and one grant agency in its first release cycle.
- Parallelized a keyphrase extraction model across 6 GPUs to process 200M records, accelerating the extraction process by 10x.

Data Analyst, Kava Investment Analysis   Tehran, Iran | Sept 2021 - Aug 2022
- Built a scalable web scraper that collected data from 4+ sources across the Tehran Stock Exchange, reducing manual data collection time by 70%.
- Designed and implemented a PostgreSQL data warehouse: defined tables, indexes, and ETL pipelines for equities, bonds, and derivatives, which reduced query latency by 80%.

Software Engineer Intern, Zima & Iliasystem Co.   Mashhad, Iran | Aug 2019 - Feb 2021
- Acquired essential knowledge in backend development, REST API implementation, and database design by contributing to 3 internal tools and APIs used by a team of 10+ developers.
- Learned the fundamentals of web development and built 2 internal-facing pages using HTML, CSS, and JavaScript.

Publications

TIST 2025	Bigdeli A, **Ebrahimi S**, Arabzadeh N, Salamat S, SeyedSalehi S, Khodabakhsh M, Zarrinkalam F, Bagheri E. Query Performance Prediction Using Neural Query Space Proximity. ACM Transactions on Intelligent Systems and Technology.
CIKM 2025	**Ebrahimi S**, Sadeghian S, Ghorbanpour A, Arabzadeh N, Salamat S, Li M, Le HS, Bashari M, Bagheri E. RottenReviews: Benchmarking Review Quality with Human and LLM-Based Judgments. In proc. CIKM (to appear)
CIKM 2025	Arabzadeh N, **Ebrahimi S**, Ghorbanpour A, Sadeghian S, Salamat S, Li M, Le HS, Bashari M, Bagheri E. Building Trustworthy Peer Review Quality Assessment Systems. In proc. CIKM (to appear)
SIGIR 2025	Soleimany S, **Ebrahimi S**, Seyedsalehi S, Zarrinkalam F, Bagheri E. Reinforcement Learning for Effective Few-Shot Ranking. In Proceedings of the 48th International ACM SIGIR Conference on Research and Development in Information Retrieval 2025 Jul 13 (pp. 2956-2961).
ECIR 2025	**Ebrahimi S**, Salamat S, Arabzadeh N, Bashari M, Bagheri E. exHarmony: Authorship and Citations for Benchmarking the Reviewer Assignment Problem. In European Conference on Information Retrieval 2025 Apr 4 (pp. 1-16).
MLJ 2024	Seyedsalehi S, Salamat S, Arabzadeh N, **Ebrahimi S**, Zihayat M, Bagheri E. Gender disentangled representation learning in neural rankers. Machine Learning. 2025 May;114(5):1-33.
CIKM 2024	Arabzadeh N, **Ebrahimi S**, Salamat S, Bashari M, Bagheri E. Reviewerly: modeling the reviewer assignment task as an information retrieval problem. In Proceedings of the 33rd ACM International Conference on Information and Knowledge Management 2024 Oct 21 (pp. 5554-5555).
ECIR 2024	**Ebrahimi S**, Khodabakhsh M, Arabzadeh N, Bagheri E. Estimating query performance through rich contextualized query representations. In European Conference on Information Retrieval 2024 (pp. 49-58).

Talks

- Estimating Query Performance Through Rich Contextualized Query Representations, *QPP++ 2025*   Apr 2025
- It Takes a Team to Triumph: Collaborative Expert Finding in Community QA Networks, *SIGIR-AP 2024*   Dec 2024
- 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

Selected Projects

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. This project is open source and has received 34 stars on GitHub.

Skills

Languages: Python, C, C++

Databases: PostgreSQL, MongoDB, SQLite, MySQL, Milvus

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

Awards and Honors

- Braithwaite Travel Grant to attend ECIR 2025 Conference (3,500 CAD)   2025
- ECIR Student Support Grant to attend ECIR 2025 Conference (330 EUR)   2025
- Braithwaite Travel Grant to attend ACML 2024 Conference (2,600 CAD)   2024
- University of Guelph College of Engineering Deans Graduate Entrance Scholarship (5,000 CAD)   2023
- Entrance Award in Recognition of Student Excellence in the College of Engineering (12,000 CAD)   2023

Academic Services

- **Co-organizer**: CIKM Workshop on Proactive Conversational Information Seeking with Large Language Models (ProActLLM), 2025
- **Program Committee**: WSDM 2026, WWW 2026, ECIR 2026, TOIS 2025, SIGIR 2025, ICTIR 2025, LLMReasoning@ICLR 2025, COLING 2025

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 Python programming fundamentals to students in grades 7 through 10, covering basic concepts such as variables, loops, conditionals, and functions, and fostering problem-solving and logical thinking skills.

References

- **Ebrahim Bagheri**, Professor at University of Toronto (Email: ebrahim.bagheri@utoronto.ca)

- **Fattane Zarrinkalam**, Assistant Professor at University of Guelph (Email: fzarrink@uoguelph.ca)

- **Negar Arabzadeh**, Postdoctoral Fellow at University of California, Berkeley (Email: negara@berkeley.edu)