

# Sajad Ebrahimi

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## Summary

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- 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

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**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

## Research Experience

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**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  $\tau$  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

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**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 Reviewerly's 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%.

- 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

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TIST 2025	Bigdeli A, <b>Ebrahimi S</b> , Arabzadeh N, Salamat S, SeyedSalehi S, Khodabakhsh M, Zarrinkalam F, Bagheri E. <a href="#">Query Performance Prediction Using Neural Query Space Proximity</a> . ACM Transactions on Intelligent Systems and Technology.
CIKM 2025	<b>Ebrahimi S</b> , Sadeghian S, Ghorbanpour A, Arabzadeh N, Salamat S, Li M, Le HS, Bashari M, Bagheri E. <a href="#">RottenReviews: Benchmarking Review Quality with Human and LLM-Based Judgments</a> . In Proceedings of the 34th ACM International Conference on Information and Knowledge Management 2025 Nov 10 (pp. 5642-5649).
CIKM 2025	Arabzadeh N, Ebrahimi S, Ghorbanpour A, Sadeghian S, Salamat S, Li M, Son Le H, Bashari M, Bagheri E. <a href="#">Building Trustworthy Peer Review Quality Assessment Systems</a> . In Proceedings of the 34th ACM International Conference on Information and Knowledge Management 2025 Nov 10 (pp. 6863-6864).
SIGIR 2025	Soleimany S, <b>Ebrahimi S</b> , Seyedsalehi S, Zarrinkalam F, Bagheri E. <a href="#">Reinforcement Learning for Effective Few-Shot Ranking</a> . In Proceedings of the 48th International ACM SIGIR Conference on Research and Development in Information Retrieval 2025 Jul 13 (pp. 2956-2961).
ECIR 2025	<b>Ebrahimi S</b> , Salamat S, Arabzadeh N, Bashari M, Bagheri E. <a href="#">exHarmony: Authorship and Citations for Benchmarking the Reviewer Assignment Problem</a> . In European Conference on Information Retrieval 2025.
MLJ 2024	Seyedsalehi S, Salamat S, Arabzadeh N, <b>Ebrahimi S</b> , Zihayat M, Bagheri E. <a href="#">Gender disentangled representation learning in neural rankers</a> . Machine Learning. 2025 May;114(5):1-33.
CIKM 2024	Arabzadeh N, <b>Ebrahimi S</b> , Salamat S, Bashari M, Bagheri E. <a href="#">Reviewerly: modeling the reviewer assignment task as an information retrieval problem</a> . In Proceedings of the 33rd ACM International Conference on Information and Knowledge Management 2024 Oct 21 (pp. 5554-5555).
ECIR 2024	<b>Ebrahimi S</b> , Khodabakhsh M, Arabzadeh N, Bagheri E. <a href="#">Estimating query performance through rich contextualized query representations</a> . In European Conference on Information Retrieval 2024 (pp. 49-58).

## Presentations and Talks

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• RottenReviews: Benchmarking Review Quality with Human and LLM-Based Judgments, <i>CIKM 2025</i>	Nov 2025
• Estimating Query Performance Through Rich Contextualized Query Representations, <i>QPP++ 2025</i>	Apr 2025
• It Takes a Team to Triumph: Collaborative Expert Finding in Community QA Networks, <i>SIGIR-AP 2024</i>	Dec 2024
• Reviewerly: A High Quality Peer Reviewer Suggestion Application, <i>OpenAlex Virtual User Conference</i>	May 2024
• Intro to Neural Information Retrieval, <i>Special Topics in Information Retrieval, University of Guelph</i>	Nov 2023

## Skills

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**Languages:** Python, C, C++

**Databases:** PostgreSQL, MongoDB, SQLite, MySQL, Milvus

**Misc:** Git, Docker, Elasticsearch, Nginx, GraphQL, HTML/CSS,  $\text{\LaTeX}$ , Unix-based OS

## Selected Projects

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QR Code Ticket System2022

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.

## Awards and Honors

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- 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
- Braithwaite Travel Grant to attend ECIR 2024 Conference (2,800 CAD)2024
- College of Engineering Deans Graduate Entrance Scholarship, UoGuelph (5,000 CAD)2023
- Entrance Award in Recognition of Student Excellence in the College of Engineering, UoGuelph (12,000 CAD)2023

## Academic Services

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- 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

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- Teacher Assistant**, Ferdowsi University of MashhadIran | 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 SchoolIran | 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

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References will be available upon request.