

# Mohammad Hossein Moslemi

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## Education

- 2023 – Present    **M.Sc. Computer Science**  
University of Western Ontario, London, ON, Canada  
Research Field: *Responsible AI and Data Management*
- 2018 – 2023    **B.Sc. Electrical Engineering**  
Sharif University of Technology, Tehran, Iran  
Minor in Computer Science

## Professional Experience

- Sept. 2023 – Present    **Master's Research**, Computer Science Dep., Western University
- **Developed methods using optimal transport to reduce bias** and mitigate unwanted dependencies in data, enhancing fairness in AI.
  - **Advanced fairness in entity matching** by implementing state-of-the-art and LLM-based methods, applying Wasserstein barycenter and optimal transport techniques to calibrate outputs.
  - **Created a novel, threshold-independent fairness metric**, improving fairness evaluation in entity matching models and assessments.
- March – Aug. 2023    **Research Assistant**, Economics Dep., Western University
- Led the extraction of large-scale datasets using advanced web scraping techniques, collecting data from various sources.
  - Utilized PySpark for efficient data cleaning and transformation, ensuring accuracy, consistency, and reliability in the processed datasets.
- Oct. 2022 – Jun. 2023    **Research Assistant**, Electrical Engineering Dep., Sharif University
- Applied advanced signal processing, graph theory, and probabilistic methods to extract features from medical images for classification tasks.
  - Achieved satisfactory results under the supervision of Dr. Arash Amini, validating the effectiveness of the methods used and contributing to the success of the research. This work culminated in a poster presentation *recognized as one of the Outstanding B.Sc. Projects*.
- Feb. 2021 – Oct. 2021    **Data Engineer Intern**, BASALAM Co., Iran
- Structured and updated collected data into organized tables using tools like Spark, Hadoop, and Kafka, maintaining a robust Big Data framework and gaining hands-on experience in data engineering tasks.
  - Developed teamwork skills, time management, and work discipline, collaborating effectively with different teams to deliver reliable solutions.

## Publications

### Conference Papers

- C1. Pirhadi, A., **Moslemi, M. H.**, Cloninger, A., Milani, M. & Salimi, B. Otclean: Data cleaning for conditional independence violations using optimal transport. *Proceedings of the ACM on Management of Data (SIGMOD)* 2, 1–26 (2024).

### Workshop papers

- W1. **Moslemi, M. H.** & Milani, M. *Threshold-Independent Fair Matching through Score Calibration in Proceedings of the Conference on Governance, Understanding and Integration of Data for Effective and Responsible AI Workshop at SIGMOD* (2024), 40–44.

### Submitted Papers

- S1. **Moslemi, M. H.** & Milani, M. Mitigating Matching Biases Through Score Calibration. *VLDB* (2025).
- S2. **Moslemi, M. H.**, Balamurugan, H. & Milani, M. Evaluating Blocking Biases in Entity Matching. *IEEE BigData* (2024).

### Papers in Progress

- O1. Mousavi, A., **Moslemi, M. H.**, Behkamal, B. & Milani, M. *Entity Matching and Data Heterogeneity: A Survey and an In-Depth Experimental Analysis*

## Presentations

### Conference Talks

- T1. **Moslemi, M. H.** & Milani, M. *Threshold-Independent Fair Matching through Score Calibration Governance, Understanding and Integration of Data for Effective and Responsible AI Workshop at SIGMOD* (Santiago, Chile). June 2024.

### Posters

- P1. Pirhadi, A., **Moslemi, M. H.**, Cloninger, A., Milani, M. & Salimi, B. *Otclean: Data cleaning for conditional independence violations using optimal transport* Proceedings of the ACM on Management of Data (**SIGMOD**) (Santiago, Chile). June 2024.
- P2. **Moslemi, M. H.** & Amini, A. *Texture classification using graph signal processing and SVM in ILD patients* Electrical Eng. department, Sharif University (Tehran, Iran). June 2023.

## Key Skills

- Soft Skills**
- **Time Management:** Proven ability to efficiently manage time on multiple projects.
  - **Self-Discipline:** Strong self-motivation and discipline, consistently meeting deadlines and goals.
  - **Resilience & Perseverance:** Never quits under pressure, consistently completes tasks regardless of challenges.
  - **Dependability:** A track record of consistently delivering on tasks, regardless of obstacles.
- Technical**     **Python (Extremely Advanced)** • TensorFlow • PyTorch • MATLAB • Git • Linux

## Academic Service

- Oct. 2024                      **Peer-Review**, A 2025 conference
- Assisted one of the primary reviewers in evaluating several submitted papers for the conference.
- Sep. 2023 – Present        **Teaching Assistant**, Computer Science department, Western University
- Python Teaching Assistant for three semesters, teaching additional concepts and ensuring student comprehension.
  - Managed and graded lab sessions for 50 students.
- Jun. – Sep. 2024            **Academic Advisor**, Computer Science Dep., University of Western Ontario
- Guided and assisted Master of Engineering students with their directed studies and projects.

## Relevant Coursework

- Machine Learning**     Introduction to Machine Learning • Statistical learning • Reinforcement Learning • AI & BioComputing
- Data Management**    Advanced Database • Data Management Seminar • Data Structures & Algorithms • Big Data Analysis
- Mathematics**            Linear Algebra • Digital Signal processing • Encryption Foundations • Probability and Statistics

## Honors and Certificates

- 2023                      Ranked in the top 10% among the class of 2023
- 2023                      Astonishing Achievement Award for the B.Sc. Project
- 2022                      Certificate in Machine Learning, MATLAB, and Python from LinkedIn