

NIMA SHAHBAZI

Chicago, IL

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RESEARCH INTEREST

Data preparation and management, Algorithmic fairness and responsible AI, Algorithmic databases/data mining.

EDUCATION

PhD. in Computer Science, University of Illinois Chicago, Chicago, IL <i>Advisor:</i> Dr. Abolfazl Asudeh, <i>GPA:</i> 4.00	2020-2025
MSc. in Computer Science, The University of Texas at Dallas, Richardson, TX	2018-2020
BE in Computer Engineering, University of Isfahan, Isfahan, Iran	2008-2013

WORK EXPERIENCE

Megagon Labs: Research Scientist Intern	May 2023 - Aug 2023
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- *Project:* Fairness-aware Data Preparation for Entity Matching (Submitted to VLDB 2024)
- *Mentors:* Dr. Jin Wang, Dr. Zhengjie Miao, Dr. Nikita Bhutani

University of Illinois Chicago: Research Assistant	Aug 2020 - Present
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- *Current/Past Projects:* INDEX Lab
 - *Fairness-aware Data Structure for AQP:* Designing fairness-aware data structures such as hashing and membership estimation, sampling structures for aggregate query estimation, and representative geometric sampling structures for AQP.
 - *Fair Entity Matching:* Developed a framework to audit and promote group/causal fairness to various steps of the entity matching pipeline from blocking to matching.
 - *Reliability of Individual Predictions:* Developed measures such as data coverage and distrust measures to generate proper reliability warnings for individual predictions and fitness of datasets for various ML tasks for a variety of structured and unstructured data types.
 - *Fairness-aware LLM:* Auditing and promoting fairness in LLMs.
 - *FairRover:* Proposed a framework for explorative fairness-aware model construction.
 - *PopSim:* Proposed a system for creating semi-synthetic individual-level data with demographic information.

University of Illinois Chicago: Teaching Assistant	Aug 2020 - May 2023
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- *Courses:* Database Systems

University of Illinois Chicago: Summer Research Assistant	May 2022 - Sep 2022
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- *Project:* proposed an efficient and fair variant of MARS regression algorithm. OPLEX Lab

The University of Texas at Dallas: Teaching Assistant	Aug 2018 - May 2020
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- *Courses:* Database systems

PUBLICATIONS

1. Abolfazl Asudeh, **Nima Shahbazi**, Zhongjun Jin and H.V. Jagadish. 2021 “Identifying Insufficient Data Coverage for Ordinal Continuous-Valued Attributes”, in *Proceedings of The 2021 International Conference on Management of Data (SIGMOD)*.
2. **Nima Shahbazi**, Yin Lin, Abolfazl Asudeh and H.V. Jagadish. 2023 “Representation Bias in Data: A Survey on Identification and Resolution Techniques”, in *ACM Computing Surveys (CSUR)*.

3. Melika Mousavi, **Nima Shahbazi** and Abolfazl Asudeh “Crowdsourcing Representation Bias Identification in form of Data Coverage in Image Data Sets”, in *EDBT 2024*.
4. **Nima Shahbazi**, Nikola Danevski, Fatemeh Nargesian, Abolfazl Asudeh and Divesh Srivastava “Through the Fairness Lens: Experimental Analysis and Evaluation of Entity Matching”, in *VLDB 2023*
5. **Nima Shahbazi** and Abolfazl Asudeh. “Reliability Evaluation of Individual Predictions: A Data-centric Approach”. *To appear in VLDB Journal*.
6. **Nima Shahbazi**, Stavros Sintos and Abolfazl Asudeh. “FairHash: A Fair and Memory/Time-efficient Hash Map”. *Under review in SODA 2024*.
7. **Nima Shahbazi**, Jin Wang, Zhengjie Miao and Nikita Bhutani. “Fairness-aware Data Preparation for Entity Matching”. *Under review in VLDB 2024*.
8. Hantian Zhang, **Nima Shahbazi**, Xu Chu and Abolfazl Asudeh. 2021 “FairRover: Explorative Model Building for Fair and Responsible Machine Learning”, in *Proceedings of The Fifth International Workshop on Data Management for End-to-End Machine Learning (DEEM)*.
9. Khanh Duy Nguyen, **Nima Shahbazi** and Abolfazl Asudeh “PopSim: Individual-level Population Simulation for Equitable Allocation of City Resources”. *The International Workshop of Algorithmic Fairness in Artificial intelligence, Machine learning and Decision making (AFair-AMLD) 2023*.

SKILLS

Programming:	Python, Java, C++, Full Stack Web Development
Tools/Technology:	SQL, PyTorch, TensorFlow, Linux, Hadoop, Spark, Kafka, Android

PROFESSIONAL SERVICES

- Availability/Reproducibility Reviewer at *SIGMOD'23 and '24* 2022
- External Reviewer at *ICDE'23* 2022
- Reviewer for the journal *Information Systems* 2021
- Mentored 2 undergraduate and 2 graduate students for the senior/master's projects at *UIC* 2021-present
- Student volunteer at *VLDB'20* Sep 2020

HONORS AND AWARDS

- Ranked top 2% in the Iranian nationwide university entrance exam. Jun 2008

EXTRA-CURRICULAR

- Teaching, Literature, Arts, Photography, Cooking, Hiking, Strength training, Video games, Specialty coffee, Mixology.