

# SAEED FATHOLLAHZADEH

## Data Management/Database Researcher

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🌐 <https://fathollahzadeh.github.io>

### SUMMARY

The purpose of my research is to study data analytics—analyzing, storing, retrieving, and manipulating large, heterogeneous datasets. I focus on systems-oriented challenges in developing software for managing and processing such data, particularly in machine learning systems. Specifically:

- **Data Management:** Focused on data-centric ML pipelines (efficient processing and system automation)
- **ML for Data Management:** Focused on automatic decomposition of operations
- **Database Systems:** Focused on query processing and optimization

### EDUCATION

- **Ph.D. in Computer Science, Concordia University** 09/2023--**Exp. 02/2026**  
Supervisors: Prof. [Matthias Boehm](#), and Prof. [Essam Mansour](#) Montreal, Canada  
Thesis: Automating Data System Efficiency through Generation and Rewriting
- **Ph.D. in Computer Science, Graz University of Technology (TU Graz)** 04/2021--09/2023  
Supervisor: Prof. [Matthias Boehm](#) (Moved to Technische Universität Berlin) Graz, Austria  
..... Transferred to Concordia University .....
- **M.Sc. in Software Engineering, Iran University of Science and Technology** 2012--2014  
Supervisor: Prof. [Mohsen Sharifi](#) Tehran, Iran  
Thesis: A Middleware for Distributed Processing of Complex Events

### PROFESSIONAL EXPERIENCE

- **CatDB (Organized by Concordia University)** . . . . . 09/2023--**Present**
  - Data-catalog-guided, LLM-based Generation of Data-centric ML Pipelines Montreal, Canada
  - LLM-driven Query Rewrite Optimization Leveraging Data-centric Catalog Metadata
- **SustainSys (<https://www.sustainsys.ca>)** . . . . . 09/2024--**Present**
  - Contribute to Developing Energy-efficient and Environmentally Responsible Computing Solutions Canada
- **Silicon Austria Labs (SAL), Know Center (<https://know-center.at>)** . . . . . 04/2021--09/2023
  - Working on ReWaste F (Recycling and Recovery of waste for Future) Project Graz, Austria
- **Free University of Bolzano (DBS Group, <https://dbs.inf.unibz.it>)** . . . . . 03/2020--04/2021
  - Working on Efficient and Scalable Solutions for Time Series Analysis Bolzano, Italy
- **Bimito (<https://bimito.com>)** . . . . . 08/2016--03/2020
  - Working with my Team on Making the Web Applications of Bimito Tehran, Iran

### ADDITIONAL

- **Awards:** PhD-one Financial Excellence Award (2023), DEBS GC Award (2019).
- **Technical Skills:** C/C++, Java, Rust, System Query Compile

## PUBLICATIONS

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- [1] **Saeed Fathollahzadeh**, Essam Mansour, and Matthias Boehm, “ReSequel: LLM-driven Query Rewrite Optimization Leveraging Data-centric Catalog Metadata,” *SIGMOD*, 2026. (under submission).
- [2] **Saeed Fathollahzadeh**, Kia Teymourian, and Chris Jermaine, “Impact of Object Models and Implementation on Big Data System Performance: A Controlled Study [Experiment, Analysis & Benchmark],” 2026. (under submission).
- [3] **Saeed Fathollahzadeh**, Essam Mansour, and Matthias Boehm, “CatDB: Data-catalog-guided, LLM-based Generation of Data-centric ML Pipelines,” *PVLDB (vol. 18)*, 2025.
- [4] **Saeed Fathollahzadeh**, Essam Mansour, and Matthias Boehm, “Demonstrating CatDB: LLM-based Generation of Data-centric ML Pipelines,” *SIGMOD*, 2025.
- [5] **Saeed Fathollahzadeh** and Matthias Boehm, “GIO: Generating Efficient Matrix and Frame Readers for Custom Data Formats by Example,” *SIGMOD*, 2023.
- [6] Sambasiva Rao Gangineni, Harshad Reddy Nalla, **Saeed Fathollahzadeh**, and Kia Teymourian, “Real-Time Object Recognition from Streaming LiDAR Point Cloud Data,” in *DEBS*, 2019.
- [7] **Saeed Fathollahzadeh**, Kia Teymourian, and Mohsen Sharifi, “Stateful complex event detection on event streams using parallelization of event stream aggregations and detection tasks,” in *DEBS*, 2016.
- [8] **Saeed Fathollahzadeh**, Reza Karimi, Mohsen Sharifi, Kia Teymourian, Ahmad Hasan, and Adrian Paschke, “Parallel Event Processing on Unbound Streams with Multi-step Windowing,” in *DEBS*, 2015.
- [9] **Saeed Fathollahzadeh**, “A Middleware for Distributed Processing of Complex Events ,” master of science thesis, Iran University of Science and Technology, Iran, 2014.