

Soroush Omidvartehrani

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Education

- 2022–2026 **Ph.D. in Computer Science**, University of Alberta, Canada (Expected Nov. 2026)
2017–2021 **M.Sc. in Computer Engineering**, Ferdowsi University of Mashhad, Iran
2013–2017 **B.Sc. in Computer Engineering**, Ferdowsi University of Mashhad, Iran

Employment

- 2025–2026 Data Scientist at Data on Motion Inc., Toronto, Canada
- Designed the architecture of an enterprise RAG system end to end: document onboarding, indexing, retrieval, and generation
 - Defined the evaluation methodology (retrieval recall, accuracy, latency, and cost) as the basis for design decisions and to detect quality degradation as models and data evolved
 - Built the document onboarding pipeline: layout-aware parsing of heterogeneous formats, structure-preserving chunking, PII redaction, and metadata enrichment to support filtered and scoped retrieval
 - Implemented hybrid semantic/keyword retrieval with reranking over Milvus / Zilliz Cloud
- 2019–2022 Project Manager at IP-PBX Type Approval Lab, Mashhad, Iran
- Led a research team delivering an industry-funded electricity-theft and illegal cryptocurrency-mining detection system for Khorasan Electrical Distribution Company; outcomes published in *Electric Power Systems Research*
 - Architected a Spark-based streaming framework for near real-time anomaly detection over large-scale AMI smart-meter data, with a tunable trade-off between detection rate and false alarms
 - Planned project scope and timelines, reported progress to the industry, and supervised a team of B.Sc. students across implementation and evaluation

Honors

- 2025, 2026 Graduate Student Teaching Award, University of Alberta
2024–2026 Alberta Innovates Graduate Student Scholarship (**AIGSS**), University of Alberta
2024 Flight PS752 Commemorative Scholarship
2023 Alberta Graduate Excellence Scholarship (**AGES**), University of Alberta
2022 Doctoral Recruitment Scholarship, University of Alberta
2021 **Best M.Sc. Thesis Award** at the 5th International Conference on Internet of Things and Applications
2021 **3rd place** in the Novel Ideas for Facing the Increase in Power Consumption and the Challenge of Power Outage event, Iran's National Elites Foundation
2020 **3rd place** among M.Sc. Computer Engineering students at Ferdowsi University of Mashhad
2019 **Best Paper Award** at the High Performance Computing and Big Data Analytics (TopHPC) Congress
2017 **2nd place** among B.Sc. Computer Engineering students at Ferdowsi University of Mashhad; directly accepted into M.Sc. program without entrance qualification exam

Recent Publications

- 2027 **EdgeLM: Edge Demonstrations for Language Models' Table Understanding**, Soroush Omidvartehrani, Mohammadamin Habibollah, Mohammadreza Daviran, Davood Rafiei, EACL 2027 (submitted)
- 2026 **LDI: Localized Data Imputation for Text-Rich Tables**, Soroush Omidvartehrani, Davood Rafiei, Tabular Data Analysis (TaDA) Workshop @ VLDB 2026, Boston, USA
- 2025 **WebTableX: Efficiently Discovering Web Table Transformations Through Sampling**, Soroush Omidvartehrani, Arash Dargahi Nobari, Davood Rafiei, Web Conference 2025 (WWW25), Sydney, Australia
- 2024 **GXJoin: Generalized Cell Transformations for Explainable Joinability**, Soroush Omidvartehrani, Arash Dargahi Nobari, Davood Rafiei, European Conference on Advances in Databases and Information Systems (ADBIS 2024), Bayonne, France
- 2023 **Discovering and Integrating Tabular Data**, Davood Rafiei, Arash Dargahi Nobari, Soroush Omidvartehrani, Tabular Data Analysis (TaDA) Workshop @ VLDB 2023, Vancouver, Canada
- 2022 **Online Electricity Theft Detection Framework for Large-Scale Smart Grid Data**, Soroush Omidvartehrani, Afshin Shahrestani, Mohammad Hossein Yaghmaee Moghaddam, Electric Power Systems Research Journal
- 2021 **Filter Based Time-Series Anomaly Detection in AMI using AI Approaches**, Alireza Rahimi, Afshin Shahrestani, Sina Ramezani, Pedram Zamani, Soroush Omidvartehrani, Mohammad Hossein Yaghmaee Moghaddam, 5th International Conference on Internet of Things and Applications, Isfahan, Iran

- 2021 **Anomaly in Power Consumption** (in Persian), *Soroush Omidvarkehrani*, Mohammad Hossein Yaghmaee Moghaddam, ISBN: 978-622-7605-38-9, Toloo Majd, Iran
- 2020 **Decision Tree based Electricity Theft Detection in Smart Grid**, *Soroush Omidvarkehrani*, Mohammad Hossein Yaghmaee Moghaddam, Mohsen Asadi, 4th International Conference on Internet of Things and Applications, Mashhad, Iran

Programming and Skills

GenAI	LLM Applications, Agentic RAG, LangChain, LLM Evaluation, MCP, Embeddings & Vector Search
Data Eng	Milvus / Zilliz Cloud, Spark, Large-scale ETL & Data Wrangling, Web/Table Data Extraction
ML Stack	Supervised and Unsupervised Learning, PyTorch, Transformers, Time Series Forecasting, scikit-learn, Pandas
DevOps	CI/CD Pipelines, Git, GitHub Actions, Docker, Linux (LPIC-1), HPC/SLURM Clusters, GCP
Languages	Python, Java, SQL, Bash, MATLAB

Selected Teaching Experiences

- 2022–2026 **File and Database Management**, *Teacher Assistant*, Department of Computing Science, University of Alberta
Supervised by: Dr. Davood Rafiei
- 2015–2020 **The Theory of Formal Languages and Automata**, *Teacher Assistant and Project Supervisor*, Department of Computer Engineering, Ferdowsi University of Mashhad
Supervised by Dr. Abdorreza Savadi (2015-2020), Dr. Saeid Abrishami (2018,2019)
- 2019–2020 **Computer Networking**, *Teacher Assistant and Project Supervisor*, Department of Computer Engineering, Ferdowsi University of Mashhad
Supervised by: Eng. Farnad Ahangari
- 2017 **Artificial Intelligence**, *Teacher Assistant and Project Supervisor*, Department of Computer Engineering, Ferdowsi University of Mashhad
Supervised by: Dr. Ahad Harati
- 2016 **Fundamentals of Compiler Design**, *Teacher Assistant and Project Supervisor*, Department of Computer Engineering, Ferdowsi University of Mashhad
Supervised by: Dr. Haleh Amintoosi
- 2015 **Digital System Design**, *Project Supervisor*, Department of Computer Engineering, Ferdowsi University of Mashhad
Supervised by: Dr. Mariam Zomorodi Moghadam
- 2014 **Discrete Mathematics**, *Teacher Assistant*, Department of Computer Engineering, Ferdowsi University of Mashhad
Supervised by: Dr. Mostafa Nouri Baygi

Related Courses

- Modern Database Searches (UofA): A+
- Introduction to KDD & DM (UofA): A+
- Principles of Database Design (FUM): 19.1/20
- Data Mining (FUM): 19.5/20
- Artificial Intelligence (FUM): 19.1/20
- Distributed Systems (FUM): 18.3/20

+ Machine Learning (Coursera), Neural Networks and Deep Learning (Coursera), Applied Plotting, Charting & Data Representation in Python (Coursera), Build Basic GANs (Coursera)

Memberships

- 2022–2026 Data & Language Intelligence (DaLI) Lab, Department of Computing Science, University of Alberta (Ongoing)
- 2019–2022 IP-PBX Lab, Department of Computer Engineering, Ferdowsi University of Mashhad
- 2016–2019 Cognitive Computing Lab (CCL), Department of Computer Engineering, Ferdowsi University of Mashhad

References

Dr. Davood Rafiei

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Dr. Joerg Sander

Email: jsander@ualberta.ca

Dr. Mohammad Hossein Yaghmaee Moghaddam

Email: mohammad.yaghmaee@dodonadata.ai

Dr. Saeid Abrishami

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