

Soroush Omidvarkehrani

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Education

- 2022– **Ph.D. in Computer Science**, University of Alberta, Canada (Ongoing) → GPA: 4
2017–2021 **M.Sc. in Computer Engineering**, Ferdowsi University of Mashhad, Iran → Ranked 3rd
2013–2017 **B.Sc. in Computer Engineering**, Ferdowsi University of Mashhad, Iran → Ranked 2nd

Research Interests

Data Wrangling — XAI — Database

Publications

- 2025 **WebTableX: Efficiently Discovering Web Table Transformations Through Sampling**, *Soroush Omidvarkehrani*, Arash Dargahi Nobari, Davood Rafiei, Web Conference 2025 (WWW25), Sydney, Australia
- 2024 **GXJoin: Generalized Cell Transformations for Explainable Joinability**, *Soroush Omidvarkehrani*, 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 Omidvarkehrani*, Tabular Data Analysis (TaDA) Workshop @ VLDB 2023, Vancouver, Canada
- 2022 **Online Electricity Theft Detection Framework for Large-Scale Smart Grid Data**, *Soroush Omidvarkehrani*, 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 Omidvarkehrani*, 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, Toloee 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
- 2019 **Extracting Effective Features for Descriptive Analysis of Household Energy Consumption using Smart Home Data**, Hadise Moradi, *Soroush Omidvarkehrani*, Behshid Behkamal, Haleh Amintoosi, High Performance Computing and Big Data Analytics Congress, Tehran, Iran
- 2019 **Analysis of Electricity Consumption Patterns in Smart Homes Using Temporal Hierarchies** (in Persian), *Soroush Omidvarkehrani*, Hadise Moradi, Behshid Behkamal, Haleh Amintoosi, 3rd International Conference on Internet of Things and Applications, Isfahan, Iran
- 2018 **FUMBOT: Design, Implementation and Detection**, *Soroush Omidvarkehrani*, Haleh Amintoosi, 9th OIC-CERT Annual Conference & 4th Conference on Cyberspace Security Incidents and Vulnerabilities, Shiraz, Iran

Honors

- 2025 Graduate Student Teaching Award, University of Alberta
- 2024–2025 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

Languages

English: **IELTS overall band score: 7** → L(8), R(6.5), W(6), S(6.5)

Persian: Native language

Programming and Computer Skills

Python Professional, 2018 - Present
Spark Professional, 2019 - Present
Java Professional, 2013 - Present
Matlab Intermediate, 2017 - Present

Android Intermediate, 2015 - 2019
Antlr Intermediate, 2014 - 2019
C++ Basic, 2014

+ Familiar with: \LaTeX , Git, Docker, Linux commandline (based on LPIC1), Linux Shell Programming, Go, VHDL, Markup Languages, ARM ST Microcontrollers

Selected Teaching Experiences

- 2022–2025 **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

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

Memberships

- 2022– DB Lab, Department of Computing Science, University of Alberta (Ongoing)
- 2019–2022 IPPBX Lab, Department of Computer Engineering, Ferdowsi University of Mashhad
- 2016–2019 CCL Lab, Department of Computer Engineering, Ferdowsi University of Mashhad

References

Dr. Davood Rafiei

Email: drafiei@cs.ualberta.ca

Dr. Joerg Sander

Email: jsander@ualberta.ca

Dr. Mohammad Hossein Yaghmaee Moghaddam

Emails: yaghmaee@ieee.org — hyaghmae@ferdowsi.um.ac.ir

Dr. Saeid Abrishami

Email: s-abrishami@um.ac.ir