

Soroush Omidvartehrani

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Education

2022– **Ph.D. in Computer Science**, University of Alberta, Canada (Ongoing)

- Total GPA: 4/4

2017–2021 **M.Sc. in Computer Engineering**, Ferdowsi University of Mashhad, Iran

- Total GPA: 17.53/20 (3.77/4) → Ranked 3rd
- Last year GPA: 18.53/20 (4/4)

2013–2017 **B.Sc. in Computer Engineering**, Ferdowsi University of Mashhad, Iran

- Total GPA: 16.56/20 (3.29/4) → Ranked 2nd
- Last 2 years GPA: 17.73/20 (3.69/4)

Research Interests

Database — IoT-based Data Mining — Streaming Data

Publications

- 2024 **GXJoin: Generalized Cell Transformations for Explainable Joinability**, Soroush Omidvartehrani, Arash Dargahi Nobari, Davood Rafiei, *Advances in Databases and Information Systems (ADBIS 2024)* (submitted)
- 2023 **Discovering and Integrating Tabular Data**, Davood Rafiei, Arash Dargahi Nobari, Soroush Omidvartehrani, *Tabular Data Analysis (TaDA) Workshop @ VLDB 2023*, held in 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, held in Isfahan, Iran
- 2021 **Anomaly in Power Consumption** (in Persian), Soroush Omidvartehrani, Mohammad Hossein Yaghmaee Moghaddam, ISBN: 978-622-7605-38-9, Toloee Majd, Iran
- 2020 **Decision Tree based Electricity Theft Detection in Smart Grid**, Soroush Omidvartehrani, Mohammad Hossein Yaghmaee Moghaddam, Mohsen Asadi, 4th International Conference on Internet of Things and Applications, held in Mashhad, Iran
- 2019 **Extracting Effective Features for Descriptive Analysis of Household Energy Consumption using Smart Home Data**, Hadise Moradi, Soroush Omidvartehrani, Behshid Behkamal, Haleh Amintoosi, *High Performance Computing and Big Data Analytics Congress*, held in Tehran, Iran
- 2019 **Analysis of electricity consumption in smart homes using time hierarchy** (in Persian), Soroush Omidvartehrani, Hadise Moradi, Behshid Behkamal, Haleh Amintoosi, 3rd International Conference on Internet of Things and Applications, held in Isfahan, Iran
- 2018 **FUMBOT: Design, Implementation and Detection**, Soroush Omidvartehrani, Haleh Amintoosi, 9th OIC-CERT Annual Conference & 4th Conference on Cyberspace Security Incidents and Vulnerabilities, held in Shiraz, Iran

Honors

- 2024 Winner of Flight PS752 Commemorative Scholarship (\$29000 CAD)
- 2023 Winner of Alberta Graduate Excellence Scholarship (AGES) (\$12000 CAD) at University of Alberta
- 2022 Winner of Doctoral Recruitment Scholarship (\$5000 CAD) at University of Alberta
- 2021 Winner of the **Best M.Sc. IoT-related Thesis Award** among all Iranian competitors in 5th International Conference on Internet of Things and Applications
- 2021 Ranked 3rd in the first event of Novel Ideas for Facing the Increase in Power Consumption and the Challenge of Power Outage held by Iran's National Elites Foundation
- 2020 Ranked 3rd among M.Sc. Computer Engineering students at Ferdowsi University of Mashhad
- 2019 Winner of the **Best Paper Award** in the High Performance Computing and Big Data Analytics (TopHPC) congress
- 2017 Ranked 2nd among B.Sc. Computer Engineering students and got accepted for M.Sc. at Ferdowsi University 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

- 2022–2023 **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