

Soroush Farghadani

EDUCATION

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University of Toronto - Department of Computer Science

Sep. 2021 – (Exp) Dec. 2022

M.Sc. in Applied Computing - Concentration: Data Science

Toronto, ON, Canada

Related courses: Data Science Methods (4.0) - Deep Learning (4.0) - Statistical Methods for Machine Learning (4.0)

Sharif University of Technology

Sep. 2017 – Aug. 2021

B.Sc. in Computer Engineering - GPA: 3.84/4 (Ranked among top 10 students)

Tehran, Iran

Ranked 1st in courses (relevant): Artificial Intelligence, Linear Algebra, Probability & Statistics, Design of Algorithms

RESEARCH & PROFESSIONAL EXPERIENCE

SOTI - Advanced Aerospace Research

May. 2022 – (Exp) Dec. 2022

Research And Development Intern

Toronto, Canada

- Designing a Simultaneous Localization and Mapping method for small UAVs to perceive the environment.
- Conducting research on Motion Planning algorithms to navigate UAVs in indoor GPS-denied environments.

Joseph L. Rotman School of Management, University of Toronto

Sep. 2021 – May 2022

Machine Learning Researcher - Advisor: Prof. John C. Hull

Toronto, Canada

- Designed and tuned a Reinforcement Learning method to develop optimal hedging strategies in volatile markets.
- Implemented stochastic volatility market models. Designed three objective functions using Quantile Regression.

Technical University of Munich (TUM)

Jun. 2020 – Aug. 2021

Research Assistant - Advisor: Prof. Nassir Navab

Munich, Germany

- Proposed and implemented a Graph Convolutional Network capable of 1) Interpreting the clinical relevance of input features, 2) Learning a population-level latent graph, and 3) Outperforming SOTA in two medical datasets.

Sharif University of Technology

Oct. 2019 – Aug. 2021

Research Assistant - Advisors: Prof. Rabiee, Prof. Rohban, and Prof. Soleymani

Tehran, Iran

- Designed an end-to-end Machine Learning pipeline to classify the disease severity based on visual biomarkers in the real-world setting of thick-slice MRI; Outperformed the state-of-the-art by 10.2%.
- Implemented and evaluated SOTA Graph Convolutional Networks on image-based profiling of cellular morphological responses to small-molecule treatments.

Yektanet | An Online Advertising Platform in Iran

Jul. 2019 – Oct. 2019

Data Science Intern

Tehran, Iran

- Implemented a Machine Learning approach to help advertisers reach people who are similar to their current customers.

Pido | One of the largest Fuel Delivery Companies in the Middle East

Jun. 2018 – Jun. 2019

Computer Vision Engineer

Tehran, Iran

- Implemented an accurate and efficient solution for extracting information from debit card scans in Persian and English.

PUBLICATIONS

- Cao J., Chen J., Farghadani S., Hull J., Poulos Z., Wang Z., Yuan J. "Gamma and Vega Hedging Using Deep Distributional Reinforcement Learning." 2021, conference pre-print at [arXiv:2205.05614](https://arxiv.org/abs/2205.05614).
- Farghadani S., Kazi A., and Navab N. "IA-GCN: Interpretable Attention based Graph Convolutional Network for Disease prediction." 2021, conference pre-print at [arXiv:2103.15587](https://arxiv.org/abs/2103.15587).
- Farghadani S., Shirkavand R., Ayromlou S., Rohban M. H., and Rabiee H. R. "Dementia Severity Classification under Small Sample Size and Weak Supervision in Thick Slice MRI." 2021, conference pre-print at [arXiv:2103.10056](https://arxiv.org/abs/2103.10056).

HONORS AND AWARDS

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| • Vector Scholarship in Artificial Intelligence Recipient | 2021 |
| • University of Toronto Merit Based Scholarship | 2021 |
| • Technical University of Munich (TUM) Undergraduate Excellence Award | 2020 |
| • Ranked among top 0.1% participants in the Iranian National Universities Entrance Exam | 2017 |

TECHNICAL SKILLS

Programming Languages: Python, C++, Java, R

Frameworks/Libraries: PyTorch, PyTorch Geometric, OpenCV, NumPy, Pandas, Scikit-Learn, Django, Vue.js, ROS

Developer Tools: Git, Jira, Trello, Google Cloud Platforms