

# Soroush Farghadani

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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 (Minor in Economics)- 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

## PUBLICATIONS

- Cao J., Chen J., Farghadani S., Hull J., Poulos Z., Wang Z., Yuan J. "Gamma and Vega Hedging Using Deep Distributional Reinforcement Learning." 2022, [arXiv:2205.05614](https://arxiv.org/abs/2205.05614), Accepted and Presentation at RiskMinds and CDI
- 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).

## 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

*Software Development Engineer*

*Tehran, Iran*

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

## 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