

# Soroush Farghadani

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## EDUCATION

### University of Toronto - Department of Computer Science

Sep. 2021 – Dec 2022

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

*Toronto, ON, Canada*

Courses (ongoing): Data Science Methods - Deep Learning - Statistical Methods for Machine Learning

### Sharif University of Technology

Sep. 2017 – Aug. 2021

*B.Sc. in Computer Engineering - GPA: 3.8/4 (ranked among top 10 students)*

*Tehran, Iran*

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

## EXPERIENCE & RESEARCH

### Technical University of Munich (TUM)

Jun. 2020 – Aug. 2021

*Remote Research Assistant - Advisor: Prof. Nassir Navab*

*Munich, Germany*

- Proposed and implemented an interpretable graph learning-based model which 1)interprets the clinical relevance of the input features towards the task, 2)uses the explanation to improve the model performance by 3.2% and, 3)learns a population level latent graph that may be used to interpret the cohort's behavior.
- Conducted a literature review on the interpretability of the newly emerged topic of Graph Convolutional Networks.

### Sharif University of Technology

Jun. 2019 – Feb. 2021

*Research Assistant - Advisors: Prof. Rabiee and Prof. Rohban*

*Tehran, Iran*

- Proposed a deep learning pipeline to classify the dementia's severity based on the visual biomarkers; outperformed the state-of-the-art by 10.2%.
- Developed a Deep Learning model to classify the X-Ray into Normal and Abnormal; Has been used in several hospitals.

### Sharif University of Technology

Jan. 2021 – Aug. 2021

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

*Tehran, Iran*

- Implemented and evaluated the state-of-the-art Graph Convolutional Networks on image-based profiling of cellular morphological responses to small-molecule treatment.
- Conducted a literature review on Graph Convolutional Networks in Medical Image Analysis.

### Yektanet | An Online Advertising Platform in Iran

Jul. 2019 – Oct. 2019

*Data Science Intern*

*Tehran, Iran*

- Implemented a novel ML approach to help advertisers target new customers likely to be interested in their business.

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

Jun. 2018 – Jun. 2019

*Computer Vision Engineer*

*Tehran, Iran*

- Developed a new Image Processing method capable of reducing the illumination's effect on License Plate images.
- Implemented an accurate and efficient solution for extracting information from debit card scans in Persian and English.

## PUBLICATIONS

- Farghadani S., Kazi A., and Navab N. "IA-GCN: Interpretable Attention based Graph Convolutional Network for Disease prediction."** (2021, in preparation for submission to Journal); 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 REWARDS

- Vector Scholarship in Artificial Intelligence Recipient - exceptional candidates pursuing a master's 2021
- University of Toronto Merit Based Scholarship - Ten scholarships to extremely talented MScAC students 2021
- Technical University of Munich(TUM) Undergraduate Excellence Award - Five Awards 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

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