Soroush Farghadani

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Education

Sharif University of Technology, Tehran, Iran
B.Sc. in Computer Engineering — Sep. 2017 - Expected Aug. 2021
- GPA: 19.18/20, ranked among top 10 students admitted in 2017 (As of Nov. 2020)
- GPA in Major Subject: 19.72/20 (As of Nov. 2020)
- GPA of last 2 semesters: 20/20 (Fall 2019 & Spring 2020)

Shahid Ejei High School, Affiliated with the National Organization for Development of Exceptional Talents (NODET), Esfahan, Iran
Diploma in Mathematics and Physics — Sep. 2013 - May 2017
- Diploma GPA: 19.66/20, ranked 1^{st} among 300+ students

Manuscripts In Preparation

Farghadani S., Kazi A., and Navab N. **"IA-GCN: Interpretable Attention based Graph Convolutional Network for Disease prediction."**

Shirkavand R., **Farghadani S.**, Ayromlou S., Rohban M. H., and Rabiee H. R. **"Dementia Severity Classification under Small Sample Size and Weak Supervision in Thick Slice MRI."**

Research Experience

Technical University of Munich (TUM), Munich, Germany — Jun. 2020 - Present
Research Intern Under the Supervision of Prof. Nassir Navab
- Conducted a literature review on the newly emerged topic of Geometric Deep Learning in general and Graph Convolutional Networks (GCN) in particular.
- Inspected the GCNs' sensitivity to the graph structure.
- Proposed and implemented a novel GCN architecture which can generate explanations while achieving higher accuracy than the state-of-the-art.

Sharif University of Technology (SUT), Tehran, Iran — Jan. 2021 - Present
Research Assistant Under the Supervision of Prof. Rabiee, and Prof. Soleymani
- Conducted a literature review on Graph Convolutional Networks in Medical Image Analysis.
- Experimenting state-of-the-art GCN methods on Image-Based Profiling of Cellular Morphological Responses to Small-Molecule Treatment

Sharif University of Technology (SUT), Tehran, Iran — Jun. 2019 - Feb. 2021
Research Assistant Under the Supervision of Prof. Rabiee, and Prof. Rohban
- Developed Deep Learning algorithms to classify the X-Ray images into two groups of Normal and Abnormal. (the method has been used in several hospitals ever since.)
- Proposed and implemented a new Image Processing method capable of highlighting White Matter Lesions.
- Developed a novel Deep Learning architecture to classify the visual biomarkers of Dementia Disease.

Honors and Awards

- **TUM Undergraduate Excellence Award** — 2020
  The Chair for Computer Aided Medical Procedures offers 5 Undergraduate Excellence Awards each year to the best international undergraduates, who show outstanding research potentials.
- **National Universities Entrance Exam** — 2017
  Ranked 96^{th} in the National Universities Entrance Exam among over 140,000 participants.
- **Member of National Iranian Elites Foundation** — 2017 - present

Work Experience

Yektanet, The Largest Online Advertising Platform in Iran — Jul. - Oct. 2019
Data Science Intern
- Invented and implemented a novel Machine Learning approach to help advertisers target new customers who are 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

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

Teaching Experience

- **Linear Algebra - Lead TA**, Instructor: Prof. Rabiee Fall 2020
  Leading a group of 42 TAs. Designed the syllabus and lecture notes. Designed the exams.
- **Design Algorithms**, Instructor: Prof. Zarrabi-Zadeh Fall 2020
  Designed and graded assignments. Designed and graded exams.
- **Artificial Intelligence**, Instructor: Prof. Rohban Spring 2020
  Instructed the discussion classes. Designed and graded assignments.
- **Discrete Structures**, Instructor: Prof. Zarrabi-Zadeh Spring 2020
  Designed and graded assignments. Designed and graded exams.
- **Probability and Statistics**, Instructor: Prof. Sharifi-Zarchi Fall 2019
  Instructed the discussion classes. Created reading materials. Designed and graded assignments.
- **Linear Algebra**, Instructor: Prof. Abolfazl Motahari Fall 2019
  Instructed the discussion classes. Designed and graded assignments.

Other Experiences

IPM Advanced School on Computing Aug. 2020
Participated in the conference.

Data Days Machine Learning and Data Science Competition Dec. 2019
Directed a staff of 4 as co-head of the assessment team. Designed the tasks and judged contestants' results and methods.

Artificial Intelligence in Medical Imaging Conference Nov 2019
Invited by the organizing committee to help them create contents for the opening ceremony. Participated in the conference.

Avisa Solar Mar. - May. 2018
Developed a website using Django as a freelancer.

Relevant Coursework

Machine Learning (graduate, audited), Artificial Intelligence, Linear Algebra, Probability and Statistics, Design of Algorithms, Data Structures and Algorithms, Discrete Structures, Convolutional Neural Networks (online, audited)

Languages

- **Persian**: native
- **English**: highly proficient (Common European Framework of Reference C1)

Test Scores

- **IELTS**: 7.5 (Reading: 8.5, Listening: 8.5, Writing: 6.5, Speaking: 7)
- **GRE General Test**: Quantitative: 170, Verbal: 155

Technical Skills

- General Skills:
  - Advanced: Java, R, Python
  - Intermediate: C, C++, Git, LaTeX
- Libraries: OpenCV, PyTorch, NumPy, Scikit-Learn
- Website Development: Django, Vue.js