

Fatemeh Sarshartehrani

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Research Interests

- Machine learning and Deep learning
- Data Science
- Human-Robot interaction
- Natural Language Processing
- Multi-modal learning
- Artificial Intelligence

Education

- **Virginia Tech**
Ph.D. Student in Computer Science (GPA: 3.92/4.00)
Expected Graduation: Aug. 2025
Advisor: Dr. Denis Gracanin
- **Sharif University of Technology**
M.Sc. in Architecture (GPA: 3.75/4.00)
Graduation: Aug. 2022
Advisor: Dr. Ali Movaghar
- **Tehran University**
B.Sc. in Engineering Physics (GPA: 3.19/4.00)
Graduation: Sep, 2019
Advisor: Dr. Farrokh Sarreshtedari

REFERENCES

Dr. Denis Gracanin (gracanin@vt.edu)
Dr. Ismini Lourentzou (ilourentzou@vt.edu)
Dr. Ali Movaghar (movaghar@sharif.edu)

Work Experience

- **Graduate Research Assistant (Grad Staff)** Sep. 1, 2019 - Present
 - Research-related responsibilities:
 - 1) Identifying key problems of significant importance in the field of study, and accordingly formulating research problems.
 - 2) Gathering research data including literature review, evaluation of potential approaches and solutions, obtaining real-world/simulation-based data for research problems.
 - 3) Problem solving, analyses of findings and evaluation of results.
 - 4) Implementations of above-mentioned solutions, as needed.
 - 5) Preparation of reports and manuscripts.
- **Graduate Teaching Assistant (Grad Staff)** Sep. 1, 2019 - present
 - Responsibilities as Graduate Teaching Assistant:
 - 1) Assist faculty members with creating course syllabi and developing course plans, classroom instructions, instructor of classes, preparing and grading assignments/exams, record keeping, and obtaining materials needed for classes.

- 2) Prepare presentations for lectures, manage and coordinate multiple course sections and members of the teaching team.
 - 3) Inform students of their performance and grades, and mentor them accordingly.
 - 4) Lead observation/discussion sessions, and meet with students during office hours.
 - 5) Manage tools/platforms for improving course quality, and corresponding with students.
- Note: Duties: “Software Design and Data structure”, “Deep Learning”, “Machine Learning”, “Logic circuits”, “Introduction to Java”, “Logic circuits Laboratory”,

Selected Projects

- Developing a mobile application for iPhone using Swift, to send and receive signals in group discussions and during lectures
- Face mask detection system to detect correctly covered faces with masks (Python)
- Human emotion recognition and face detection (Python)
- Backward Heuristic Search planner with Delta-3 function (Python)
- Implementing a method to build Hidden Markov Model for speech recognition (Python)
- Text to Image and Image to Text, captioning the image and specified objects in image, generating image given the text, and detecting object from an image given the caption.(Python)
- Simulating Percolation and Spanning cluster in a 2D lattice, evaluating Conductivity near the percolation threshold (Python)
- Extracting features from medical images, and Recognizing correlations between the images and the clinical data (Matlab)
- Steganography in audio and image (Matlab)
- English-Farsi translator with spelling and grammar check features (C++)
- File compression and decompression (Java)

Other Technical Skills

Programming Languages: Python (TensorFlow, PyTorch, Scikit-learn, NumPy, Pandas, Matplotlib, Keras, OpenCV, Natural Language Toolkit (NLTK), Flask, NetworkX), Java, Matlab, C/C++, JavaScript, R, HTML/CSS, SQL, Octave, Raspberry Pi

Source Control Protocols: Git

Operating Systems: Windows, Linux (Ubuntu)

Software/Tools/Databases: PyCharm, IntelliJ Idea, CLion, Eclipse, MS Visual Studio, MySQL

Web Technologies: HTML & CSS, JavaScript

Software Paradigms: Object-Oriented Programming, Functional Programming