Fatemeh Sarshartehrani
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Summary

Ph.D. student in Computer Science with a GPA of 3.93/4.00 and expertise in machine learning and data science. Skilled in Python, Java, C/C++, and Matlab, with experience in implementing machine learning algorithms for various projects. Proficient in software tools such as PyCharm, Git, and operating systems like Windows and Linux (Ubuntu). Highly motivated and passionate about machine learning, eager to contribute to your team's success.

Education

- **Virginia Tech** — Expected Graduation: Aug. 2025
  Ph.D. Student in Computer Science (GPA: 3.93/4.00) — Advisor: Dr. Denis Gracanin
- **Sharif University of Technology** — Graduation: Aug. 2022
  M.Sc. in Artificial Intelligence (GPA: 3.75/4.00) — Advisor: Dr. Ali Movaghar
- **Tehran University** — Graduation: Sep, 2019
  B.Sc. in Engineering Physics (GPA: 3.19/4.00) — Advisor: Dr. Farrokh Sarreshtedari

Research Interests

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

Selected Projects

Mobile Application (Swift)

- *iOS Group Discussion App:* Real-time signal exchange for group discussions.

Computer Vision (Python)

- *Face Mask Detection:* Accurate detection of masked faces.
- *Emotion Recognition:* Recognized human emotions and performed face detection.

AI and Machine Learning (Python)

- *Heuristic Search Planner:* Designed a Backward Heuristic Search planner.
- *Speech Recognition:* Implemented Hidden Markov Models for speech recognition.
- *Text to Image System:* Created a text-to-image system with object detection.

Simulation and Data Analysis (Python/Matlab)

- *Percolation Simulation:* Simulated percolation and evaluated conductivity.
- *Medical Image Analysis:* Extracted features from medical images and conducted correlation analysis.
- *Steganography:* Implemented steganography in audio and image data.

Software Development (C++, Java)

- *English-Farsi Translator (C++):* Designed an English-Farsi translator with grammar check.
- *File Compression (Java):* Created a file compression tool in 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

Work Experience

- **Graduate Research Assistant (Graduate Staff)** Sep. 2019 - Present
  - Identifying key research problems aligned with research interests.
  - Gathering and analyzing data, including literature reviews and real-world/simulation-based data.
  - Problem-solving, analysis of findings, and result evaluation.
  - Implementing research solutions as needed.
  - Preparing research reports and manuscripts.
- **Graduate Teaching Assistant (Graduate Staff)** Sep. 2019 - Present
  - Assisting faculty members in course development and management.
  - Preparing course materials, conducting lectures, and grading assignments/exams.
  - Mentoring and guiding students, maintaining records, and organizing office hours.
  - Leading observation and discussion sessions, managing course tools/platforms.
  - Courses: "Software Design and Data Structures," "Deep Learning," "Machine Learning," "Logic Circuits," "Introduction to Java," "Logic Circuits Laboratory."
- **Instructor for "Introduction to Software Engineering" Course** Aug. 2023 - present
  - Provided instruction for approximately 40 students in the "Introduction to Software Engineering" course.
  - Designed course syllabus, developed instructional materials, and delivered engaging lectures.
  - Managed assignments, exams, and grading while ensuring a productive learning environment.
  - Offered guidance to students, organized office hours, and facilitated discussions.