Danial Pahlavan Mosavari

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Summary of qualifications

I am a PhD student specializing in Artificial Intelligence at Azad University, following my graduate studies in Artificial Intelligence Engineering and Robotics at Ferdowsi University of Mashhad. My technical expertise spans programming languages such as Python and C++, with hands-on experience in machine learning, computer vision, and robotics through rigorous coursework and research projects. I am a creative and innovative problem-solver, passionate about leveraging new technologies to address real-world challenges. Additionally, I excel in communication and teamwork, consistently demonstrating the ability to collaborate effectively with colleagues to achieve common objectives.

Selected Projects

Web Mining of PDF Scientific Papers

Mashhad, IR

Ferdowsi University of Mashhad *Feb 2022 - Apr 2022*

- Developed a tool to extract key information from Farsi scientific papers in PDF format.
- Created a program to generate outputs with relevant details such as titles, authors, and keywords.
- Utilized web scraping and data mining techniques to extract data from PDF files.
- Employed Python and libraries such as PyPDF2 to implement the project.
- Applied OCR (optical character recognition) to convert non-copyable Persian language articles into machine-readable text.

Machine Learning for Embedded Systems

Mashhad, IR

Ferdowsi University of Mashhad *Nov 2021 - Dec 2021*

- Developed and compiled C code for machine learning applications on embedded systems using Ubuntu.
- Utilized GitHub for collaborative project development with team members.
- Implemented AI models on micro-controllers, gaining practical embedded system skills.
- Researched AI models and their application in embedded systems.
- Contributed to team efforts in designing and implementing an AI-based project on a micro-controller platform.

Watermarking and Steganography

Mashhad, IR

Ferdowsi University of Mashhad *2020*

- Designed and implemented an image watermarking system using DCT and DWT techniques.
- Studied the robustness and imperceptibility of different watermarking techniques under various attacks, such as noise addition, compression, and cropping.
- Implemented a steganography system for hiding secret messages in images using LSB and DCT techniques.
- Conducted comparative analysis of different steganography techniques and their robustness against various attacks.
- Analyzed the impact of parameters like embedding rate and secret key length on the performance of watermarking and steganography systems.
- Implemented the project using Python on the Ubuntu Linux operating system.

Evolutionary Computing

Mashhad, IR

Ferdowsi University of Mashhad *2019*

- Studied the performance of evolutionary algorithms, including genetic algorithms, particle swarm optimization, and differential evolution, in solving various optimization problems.
- Implemented an evolutionary algorithm to solve the traveling salesman problem, finding the shortest path through a set of cities.
- Analyzed convergence properties, runtime, and performance of evolutionary algorithms under different problem settings and parameter configurations.

Image Processing

Mashhad, IR

Ferdowsi University of Mashhad *2018*

- Developed a system for image enhancement using histogram equalization and local contrast stretching techniques.
- Implemented a Sobel edge detection algorithm to detect and highlight edges in images.
- Designed a color segmentation algorithm to extract specific regions of interest from images.
- Created a system for image denoising using Gaussian and median filters.
- Implemented an image stitching system to create panoramic images from a sequence of overlapping images.
- Studied the impact of different color spaces (RGB, HSV, LAB, etc.) on image processing tasks such as segmentation, edge detection, and object recognition.

Selected Skills

Programming	Python *(Experienced)*, C++ *(Familiar)*
Frameworks and Libraries	PyTorch, TensorFlow, OpenCV, scikit-learn, Keras *(Familiar)*
Miscellaneous	Linux, Shell (Bash/Zsh), LaTeX, Microsoft Office, Firebase, Git, Power BI, Excel, GitHub, GitLab, Deep Learning, NLP, Microsoft Visio, SSIS, SSRS, Cloudera, Spark, Hadoop *(Familiar)*
Databases and Data Visualization	SQL Server, MySQL, Power BI, T-SQL, ETL/ELT, PL/SQL, MongoDB *(Familiar)*
Soft Skills	Time Management, Teamwork, Problem-Solving, Documentation, Engaging Presentations, ETL (Data Warehousing)

Education

Azad University *Mashhad, IR*

Ph.D. in Artificial Intelligence *Oct 2023 - Present*

- Specialization in Natural Language Processing (NLP) with a focus on Retrieval-Augmented Generation (RAG).

Ferdowsi University of Mashhad *Mashhad, IR*

M.Eng. in AI and Robotics *Sept 2019 - Nov 2022*

- Graduated with a GPA of 17.94/20
- Elected by peers as class leader for the M.Sc. program, recognized for providing academic assistance and fostering a supportive learning environment.
- Proficient in utilizing online tools to streamline communication and increase productivity.
- Demonstrated aptitude for mastering new technologies and exploring innovative solutions.
- **Selected Courses:**
  - *Artificial Intelligence and Machine Learning:* Evolutionary Computing, Pattern Recognition, Neural Networks, Advanced AI
  - *Computer Vision and Image Processing:* Image Processing, Information Hiding (steganography, watermarking), Embedded Real-Time Systems Design
  - *Other:* AI in Embedded Systems, Search Engines, Web Mining

Sadjad University of Mashhad *Mashhad, IR*

Bachelor's in Information Technology *Sept 2013 - Sept 2018*

- Completed coursework in programming languages such as Python and C++.
- Studied and worked with database management systems, including PostgreSQL.
- Gained knowledge of networking concepts and protocols, including TCP/IP and DNS.
- Developed problem-solving skills through analyzing and debugging code.

Publications

Conference Papers

A review of Article multi-agent reinforcement learning methods In Farsi
Danial Pahlavan, Abed Hosseini, Mahboobeh Houshmand
The second international conference on electrical, computer, mechanical and artificial intelligence engineering (Dec. 2022) p. 21. 2022

Medium Articles

Recursive Algorithms
Danial Pahlavan
, 2022

Languages

English	Professional proficiency
Persian	Native proficiency

References available upon request.