

# Amir Pourmand

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## About Me

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I am a machine learning engineer with experience building real-world AI solutions to solve complex business problems. My expertise spans deep learning and computer vision, with a focus on medical imaging analysis. I am passionate about leveraging AI to create value and positive impact. I have a proven ability to understand business needs and deliver robust AI technologies that meet them. I am a collaborative team player and lifelong learner, continuously expanding my skills in this fast-evolving field. I am excited to continue growing as an ML Engineer, taking abstract concepts and turning them into practical innovations that augment human capabilities.

## Work Experiences

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### Machine Learning Engineer

Jun 2023 – Present

*Mofid Securities*

Description: In my role, I transformed AI concepts into practical products. For instance:

- ◇ Built a conversational AI assistant with OpenAI's GPT-3 API to provide personalized financial guidance to customers
- ◇ Implemented speech recognition to automatically transcribe videos into text summaries, extracting key details
- ◇ Served some Open-source projects in production such as PyAnnote Diarization and Whisper for local usage
- ◇ Using Prompt Engineering approaches to use LLMs such as OpenAI and Claude effectively

### Deep Learning Researcher

Jan 2021 – Jun 2023

*Data Science and Machine Learning Lab, Sharif University of Technology*

*Supervisor: Hamid R. Rabiee*

- ◇ Real-time Automatic Polyp detection and classification using Interpretable AI (XAI): The purpose of this work is to enhance the YOLO algorithm's performance in handling labeled and unlabeled data using a semi-supervised learning framework. The study proposes an innovative approach that integrates semi-supervised learning and interpretability to improve the performance and transparency of the YOLO algorithm. To achieve this, pseudo-labeling is employed for semi-supervised learning, and the PyTorch-GradCAM library is adapted to work with YOLOv5, making it interpretable.
- ◇ Real-time Detection of Brain Aneurysms using Multi-View YOLOv5: Our project involved customizing the YOLOv5 algorithm to detect brain aneurysms in 2.5D CT scans. The network structure was modified to accept multiple images of the same patient as a single input, which helped the network to make better use of available information.

### Software Developer - Full-Stack Web Developer

July 2016 – January 2020

*Amapardazesh Sepand Inc.*

*Supervisor: S. Tavakoli*

Description: The projects I worked on during my four years with Sepand Inc. were as follows:

- ◇ Query Optimization in SQL-Server
- ◇ Automatic updating of application using GoogleDrive API
- ◇ Report generator for DataGridView in StimulSoft Report
- ◇ Integrating different devices (POS, Scale, SMS, TelegramBot) with Sepand Application
- ◇ Database Schema Comparer and Upgrader using DACPAC

## Technical Skills

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**Programming Languages:** Proficient: Python, C#, SQL (T-SQL); Intermediate: Java, MATLAB

**Data Science Libraries:** PyTorch, Pandas, Numpy, OpenCV, scikit-learn, Matplotlib, Scrapy

**Developer Tools:** VS Code, Jupyter Notebooks, VIM, Visual Studio, Android Studio

**Databases:** Proficient in SQL-Server, Familiarity with Mongo-Db

**Tools:** Git, Docker, Jekyll, Hugo, L<sup>A</sup>T<sub>E</sub>X,

**Operating Systems:** Manjaro (Arch Linux), Kubuntu (Debian), Fedora (KDE spin), Windows

## Education

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### Sharif University of Technology

*Master of Science in Artificial Intelligence and Robotics*

**Sep. 2020 - Present**

*Tehran, Iran*

◇ GPA: 18.83/20

◇ Relevant courses: Deep Learning, Natural Language Processing, Computer Vision, Machine Learning

### Yazd University

*Bachelor of Science in Computer Engineering*

**Sep. 2016 - Sep. 2020**

*Yazd, Iran*

◇ GPA: 17.47/20

◇ Relevant courses: Intelligent and Expert Systems, Algorithms and Data Structures, Principles of Database Design, Foundations of Information Retrieval and Web Search

## Internships

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### Web Application and RESTful API for Restaurant

*Amapardazesh Sepand Inc.*

**July 2018 – October 2018**

*Supervisor: S. Tavakoli*

Description: As well as developing a RESTful API service for Android devices, I built a dashboard (based on ASP.NET) for managers to customize the restaurant according to their preferences.

## Industrial Projects

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### Heart Rate Monitor Application (ECG)

*Yazd University*

**July 2019 - Sep 2019**

*Supervisor: Prof. V. Derhami*

Description: The app receives real-time data from a wireless ECG device via Bluetooth and displays it as a graph. However, some of the data was distorted or lost, making it difficult to consistently display it.

### Web application to manage invoice and account

*Amapardazesh Sepand Inc., Tavoni Etebar Kargaran Bafgh (Samen)*

**January 2019 – March 2019**

*Supervisor: S. Tavakoli*

Description: This web application provides a RESTful API for Android clients and an ASP.NET web application to show customers how much they owe the company.

### Car Management for IranKhodro

*Amapardazesh Sepand Inc., IranKhodro Yazd (4022 Branch - Farashahi)*

**July 2013 – November 2013**

*Supervisor: S. Tavakoli*

Description: My first encounter with any programming language was with this Windows-forms application that managed parking lots, controlled vehicle entrance and exit, and generated management reports.

## Open Source Contributions

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### Maintainer of al-folio Jekyll Theme

Link to repo: <https://github.com/alshedivat/al-folio>

**June 2022**

*Owner: Al-Shedivat*

### Contributions to YOLOv5

Link to repo: <https://github.com/ultralytics/yolov5>, #9059, #8694, #8766

**2022**

*Maintainer: Glenn Jocher*

### Open source Crawler for Persian websites

Link to repo: <https://github.com/pourmand1376/PersianCrawler>

**July 2022**

*Maintainer: Me*