





# Amir Pourmand

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## Research Interests

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- ◇ Deep Learning
- ◇ Computer Vision
- ◇ NLP
- ◇ Interpretability

## Education

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### Sharif University of Technology

Sep. 2020 - Present

*Master of Science in Artificial Intelligence and Robotics*

*Tehran, Iran*

- ◇ GPA: **18.83/20** or 4/4
- ◇ Relevant courses: Deep Learning (19.4/20), Natural Language Processing (19.4/20), Machine Learning (19.5/20), Statistical Machine Learning (19/20),
- ◇ Master's Project (Supervisor: [Prof. Hamid R. Rabiee](#)):
  - ◇ Project Title: Real-time automatic Polyp detection and classification using interpretable AI (XAI)
  - ◇ Project Summary: The purpose of this paper 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.

### Yazd University

Sep. 2016 - Sep. 2020

*Bachelor of Science in Computer Engineering*

*Yazd, Iran*

- ◇ GPA: **17.47/20** or 3.66/4 , Units: 140
- ◇ Relevant courses (GPA: **19.95/20**): Intelligence and Expert systems (19.7/20), Foundations of Information Retrieval and Web Search (20/20), Fundamentals of Information Technology (20/20), Microprocessors and Assembly Language (20/20), Principles of Database Design (20/20), Internet Engineering (20/20)
- ◇ Bachelor's Project (Supervisor: [Prof. V. Derhami](#)):
  - ◇ Project Title: A Recommendation System for shopping centers using Apriori Algorithm
  - ◇ Project Summary: We analyzed data from an SQL-Server database to find frequent item sets and compute metrics such as lift. These insights were then used to suggest products to customers.

## Honors and Awards

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- ◇ Ranked **1st** among over 16,000 graduate applicants in the Iranian National University Entrance Exam (Konkur) for M.Sc. of Computer Engineering in **7 (all CE) majors**, August 2020 (This rank is **unprecedented** in history of CE University entrance exam).
- ◇ **Silver Medal** in the 25th Scientific Olympiads for Iranian University Students in February 2021.
- ◇ Awarded a grant by National Elite Foundation for two semesters (1 year), October 2021.
- ◇ Ranked 1st in the 24th Scientific Olympiads for Iranian University Students in Region 6 and Ranked 16th in the country in 2019.
- ◇ Offered admission to M.Sc. program in Artificial Intelligence at Yazd University as a talented undergraduate student, August 2020.
- ◇ Ranked among the top 1 percent in the Iranian National University Entrance Exam (1896th among over 300,000 participants), June 2016.

## Under-Preparation Papers

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### Semi-Supervised Polyp Detection and Classification via Interpretable AI

Jun 2021 - Present

*Sharif University of Technology, Tehran University of Medical Sciences*

*Supervisor: Prof. Hamid R. Rabiee*

Description: We are writing this paper alongside my master thesis.

## To Be Submitted Papers

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### Real-time Detection of Brain Aneurysm via Multi-View YOLOv5

Jun 2022 - Present

Sharif University of Technology, Tehran University of Medical Sciences

Supervisor: Prof. Hamid R. Rabiee

Description: 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.

## Academic Projects

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### Deep Learning

Aug 2021 - Jan 2022

Sharif University of Technology, <https://github.com/pourmand1376/DL-Homeworks>

Supervisor: Prof. Hamid Beigy

### Stochastic Process

Aug 2021 - Jan 2022

Sharif University of Technology, <https://github.com/pourmand1376/SP-Homeworks>

Supervisor: Prof. Hamid R. Rabiee

### Machine Learning

Jan 2021 - July 2021

Sharif University of Technology, <https://github.com/pourmand1376/ML-projects>

Supervisor: Dr. M. Rohban

### Statistical Machine Learning

Jan 2021 - July 2021

Sharif University of Technology, <https://github.com/pourmand1376/SML-projects>

Supervisor: Prof. Rabiee

### Digital Image Processing

Jan 2021 - July 2021

Sharif University of Technology, <https://github.com/pourmand1376/DIP-projects>

Supervisor: Prof. Kasaei

### Compiler and Parser

December 2019

Yazd University, <https://github.com/pourmand1376/Parser>

Supervisor: Dr. ZarePour

### Web Crawler, Indexer and Search Engine Web Application

November 2018

Yazd University, <https://github.com/pourmand1376/Crawler>

Supervisor: Dr. A. Zareh

## Industrial Projects

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### Heart Rate Monitor Application (ECG)

July 2019 - Sep 2019

Yazd University

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

January 2019 – March 2019

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

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

July 2013 – November 2013

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

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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### Contributions to YOLOv5

2022

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

Maintainer: Glenn Jocher

### Contributions to al-folio

June 2022

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

Maintainer: Al-Shediat

### Open source Crawler for Persian websites

July 2022

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

Maintainer: Me

### Translating ShareX to Persian (Link)

July 2019 – August 2019

Link to repo: <https://github.com/ShareX/ShareX>

Maintainer: Jaex

## Internships

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### Web application for restaurant

July 2018 – October 2018

*Amapardazesh Sepand Inc.*

*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.

## Teaching Experiences

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- ◇ Statistical Machine Learning ( Feb 2023 - Present ) Supervisor: Dr. Hamid R. Rabiee
- ◇ Deep Learning ( Aug 2022 - Present ) Supervisor: Dr. Hamid Beigy
- ◇ Linear Algebra ( Aug 2022 - Present ) Supervisor: Prof. Hamid R. Rabiee
- ◇ Stochastic Processes for Bioinformatics ( Jan 2022 - July 2022 ) Supervisor: Dr. Mohammad H. Rohban
- ◇ Linear Algebra (Aug 2021 - Jan 2022) Supervisor: Prof. Hamid R. Rabiee
- ◇ Operating Systems Laboratory (Aug 2021 - Jan 2022) Supervisor: Dr. Beigy
- ◇ Principles of IT Strategic Management & Planning (January 2019 – July 2019) Supervisor: Dr. M. Matinkhah
- ◇ Fundamentals of Information Technology (September 2018 – January 2019) Supervisor: Dr. M. Matinkhah
- ◇ Programming Fundamentals (January 2018 –July 2018) Supervisor: Dr. R. SheykhPour

## Work Experiences

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### Software 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

### English Teacher

July 2017 – January 2018

*Zaban Gostar Institute*

*Supervisor: F. Fatemi*

Description: For a period of one term, I was an English instructor at Zaban Gostar Institute.

## Technical Skills

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

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

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

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

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

## Languages

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**English:** TOEFL: 103 (R: 27, L: 26, S:24, W:26) (Equivalent to C1)

ILI Certificate (Equivalent to C2)

**Persian:** Native

**Arabic:** Basic

## Extracurricular

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**Sports:** Mountain climbing, biking, swimming, playing chess!

**Other activities :** Blogging (see [amirpourmand.ir/blog](http://amirpourmand.ir/blog) and [aprd.ir](http://aprd.ir) )

## References

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### Prof. Hamid R. Rabiee

*Professor of Computer Engineering Department, <http://sharif.edu/~rabiee/>*

[rabiee@sharif.edu](mailto:rabiee@sharif.edu)

*Sharif University of Technology*

### Prof. Vali Derhami

*Professor of Computer Engineering Department, <https://pws.yazd.ac.ir/derhami/en/>*

[vderhami@yazd.ac.ir](mailto:vderhami@yazd.ac.ir)

*Yazd University*