





# Amir Pourmand

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## Research Interests

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- ◇ Deep Learning
- ◇ Computer Vision
- ◇ Natural Language Processing
- ◇ Interpretability

## Education

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### Sharif University of Technology

Sep. 2020 - Present

*Master of Science in Artificial Intelligence and Robotics*

*Tehran, Iran*

- ◇ GPA: **18.7/20** or 4/4
- ◇ Relevant courses: Deep Learning (19.4/20), Machine Learning (19.5/20), Statistical Machine Learning (19/20)
- ◇ Master's Project
  - ◇ Project Supervisor: [Prof. Hamid R. Rabiee](#)
  - ◇ Project Title: Real-time automatic Polyp detection and classification using interpretable AI (XAI)
  - ◇ Project Summary: There are tons of projects which have worked on Polyp detection and classification. However, there is not enough attention to enhancing the explainability of these methods. I am working to interpret Yolov5 architecture to understand better why the model predicts something (a combined project with the Tehran University of Medical Sciences).

### 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
  - ◇ Project Supervisor: [Prof. V. Derhami](#)
  - ◇ Project Title: A Recommendation System for shopping centers using Apriori Algorithm
  - ◇ Project Summary: The data was extracted from SQL-Server database and used to determine frequent itemsets and their metrics such as confidence and lift; then, It was used to recommend some goods to customers.

### Malek Sabet High School

Sep 2012 - June. 2016

*Diploma in Physics and Mathematics Discipline*

*Yazd, Iran*

GPA: **19.49/20**, Units: 102, [Affiliation: Governmental leading high school](#)

## Honors and Awards

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

## Under Prepration papers

### Automatic Real-time Detection of Brain Anuerysm via Multi-View YOLOv5

Jun 2022 - Present

Sharif University of Technology, Tehran University of Medical Sciences

Supervisor: Prof. Hamid R. Rabiee

Description: A customized YOLOv5 algorithm is being developed for detecting brain aneurysms in 2.5D CT scans. Besides learning DICOM image format details, I have also changed the network's structure so that a stream of images for the same patient are passed to Yolo as one image, therefore allowing the network to use extra information from other images.

## Academic Projects

### 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

Description: Implementation of LL(0), LR(0), SLR(1), CLR(1) algorithms in C# from scratch.

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

November 2018

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

Supervisor: Dr. A. Zareh

Description: Web Crawler fetches all sites from the seeds and crawls all other related links. The indexer prepares the data for immediate search from the search engine web application.

## Industrial Projects

### Heart Rate Monitor Application (ECG)

July 2019 - Sep 2019

Yazd University

Supervisor: Prof. V. Derhami

Description: The app receives data via Bluetooth from a wireless ECG device and displays it as a graph in real time. Some data was distorted or lost, so showing it consistently was a challenge.

### 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 as well as 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

### Open source Crawler for Persian websites

July 2022

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

Maintainer: Me

### Contributions to YOLOv5

July 2022

Link to repo: <https://github.com/ultralytics/yolov5>

Maintainer: Glenn Jocher

Description: I have solved a very important bug (#9059) and I have some PRs (#8766, #8694)

### Contributions to al-folio

June 2022

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

Maintainer: Al-Shedivat

Description: My PRs ( #386, #400, #404, #433, #435, #554). Adding docker is the most important one( #532, #754, #767)

### Translating ShareX to Persian (Link)

July 2019 – August 2019

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

Maintainer: Jaex

## Internships

### Web application 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 customize the restaurant according to their preferences.

## Teaching Experiences

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|---|------------------------------------|
| ◇ Stochastic Processes for Bioinformatics ( Jan 2022 - Present )              | 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

### Software Developer

*Amapardazesh Sepand Inc.*, <http://www.amapardazesh.com/>

**July 2016 – January 2020**

*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

*Zaban Gostar Institute*

**July 2017 – January 2018**

*Supervisor: F. Fatemi*

Description: I taught English to pre-intermediate students for a semester.

## Technical Skills

**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

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

ILI Certificate (Equivalent to C2)

**Persian:** Native

**Arabic:** Basic

## Extracurricular

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

**Other activities:** Blogging

## References

### 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*