Amir Pourmand

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Research Interests

⋄ Deep Learning   ⋄ Computer Vision   ⋄ Natural Language Processing   ⋄ Interpretability

Education

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

　⋄ Project Supervisor: Prof. Hamid R. Rabiee

　⋄ Project Title: Real-time automatic Polyp detection and classification using interpretable AI (XAI)

　⋄ Project Summary: I want to apply a semi-supervised learning framework (proposed via Google) to the YOLO algorithm to enable YOLO to work with both labeled and unlabeled data. Also we want to make the framework fully interpretable, as doctors do not trust blackbox models (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

⋄ 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 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

Automatic 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: 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 is passed to Yolo as one image, 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 real-time graph. Some data was distorted or lost, so it was challenging to show it consistently.

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

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 **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

◇ 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

Software Developer **July 2016 − January 2020**
Amapardazesh Sepand Inc., http://www.amapardazesh.com/ *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: 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: LaTeX, 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 (see https://amirpourmand.ir/blog)

References

Prof. Hamid R. Rabiee rabiee@sharif.edu
Professor of Computer Engineering Department, http://sharif.edu/~rabiee/ *Sharif University of Technology*

Prof. Vali Derhami vderhami@yazd.ac.ir
Professor of Computer Engineering Department, https://pws.yazd.ac.ir/derhami/en/ *Yazd University*