

Amir Masoud Sefidian

MACHINE LEARNING ENGINEER · DATA SCIENTIST · RESEARCHER

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Education

M.Sc. in Computer Engineering

2015–2017

SHAHID RAJAEI UNIVERSITY · GPA: 4.0/4.0 (19.34/20) · RANKED 1st AMONG ALL M.Sc. STUDENTS.

Tehran, Iran

- Thesis: “Improving missing value estimation and inconsistencies detection using data partitioning techniques” (Grade: Excellent), Supervisor: Dr. Negin Daneshpour.
- Relevant Coursework: Data Mining, Machine Learning, Pattern Recognition, Decision Support Systems, Web Mining.

B.Sc. in Computer Engineering

2011–2015

SHAHID RAJAEI UNIVERSITY · GPA: 3.96/4.0 (19.15/20) · RANKED 1st AMONG ALL B.Sc. STUDENTS.

Tehran, Iran

- Thesis: “Designing an online consultation system” (Grade: 20/20), Supervisor: Dr. Hamid Reza Shayegh.

Publications

- 2020** Sefidian, Amir Masoud, and Daneshpour, Negin (2020). “Estimating missing data using novel correlation maximization based methods”. *Applied Soft Computing*, 91, 106249.
- 2019** Sefidian, Amir Masoud, and Daneshpour, Negin (2019). “Missing value imputation using a novel grey based fuzzy c-means, mutual information based feature selection, and regression model”. *Expert Systems with Applications*, 115, 68-94.
- 2018** Sefidian, Amir Masoud, and Daneshpour, Negin (2018). “Applying regression models on subsets with high correlations for a better numeric missing values imputation”. *Tabriz Journal of Electrical Engineering*, 48(3), 1187-1200 (in Persian).
- 2017** Sefidian, Amir Masoud, and Daneshpour, Negin (2017). “Using clustering and a hybrid method to fill the numeric missing values”. *Iranian Journal of Electrical and Computer Engineering (IJECE)*, 15(3), 233-242 (in Persian).

Academic Experience

Researcher

2015–present

COMPUTER SCIENCE R&D LABORATORY, FACULTY OF COMPUTER ENGINEERING, SHAHID RAJAEI UNIVERSITY

- Conducted research in the field of data preprocessing, especially missing values imputation problem, using machine learning techniques.
- Proposed and developed three novel missing value imputation approaches:
 - A hybrid imputation approach based on clustering, weighted k-nearest neighbors, and linear regression models.
 - Ten novel correlation maximization based imputation methods.
 - An imputation approach using a novel Grey-based fuzzy c-means, Mutual Information based feature selection, and regression models.

Teaching Assistant

2016–2018

FACULTY OF COMPUTER ENGINEERING, SHAHID RAJAEI UNIVERSITY

- “Database” (Undergraduate) · “Data Mining” and “Decision Support Systems” (Graduate) · Instructor: Dr. Negin Daneshpour.

Reviewer

- International Journal of Uncertainty, Fuzziness, and Knowledge-Based Systems (IJUFKS).
- International Journal of Information Technology, and Decision Making (IJITDM).

Skills

Programming Languages

- Proficient in **PYTHON**: Machine Learning, Data Science, Deep Learning, and Web applications.
- Familiar with: Java, C++/C, PHP, WebDev Languages (HTML, CSS, JavaScript).

Tools & Technologies

Apache Spark, Apache Kafka, Git, Docker, gRPC, Protocol Buffers, \LaTeX , Weka, Raspberry Pi, AVR Microcontrollers.

Databases

Elasticsearch, Redis, MySQL, PostgreSQL, MongoDB, SQLite.

Languages

- **ENGLISH** · Fluent (Reading & Listening), Intermediate (Writing & Speaking)
- **PERSIAN** · Mother Tongue

Work Experience

PYTHON Developer

2014–present

FREELANCER (MACHINE LEARNING, DATA SCIENCE, DEEP LEARNING, AND WEB APPLICATIONS)

- Designed and developed an AI-based song's vocal/instrumental separator web application.
 - It generates separation results in less than 40 secs (for songs < 5 mins) on Nvidia Geforce 960m.
 - Tools & Technologies: Deep U-Nets, PyTorch, Flask, Django, PostgreSQL.
- Developed an intelligent organizational data analysis system.
 - It provides analytical insights about KPIs of an organization using AI algorithms.
 - Tools & Technologies: Python, Apache Kafka, Redis, gRPC, Protobuf, and Docker.
- Developed an image captioning service.
 - Trained an Encoder(CNN)-Decoder(LSTM) network on MS COCO dataset to generate captions for input images using PyTorch.
 - Achieved 0.98 BELU score.
- Developed a multi-label disaster response message classification web application for Figure Eight dataset.
 - Built ETL and NLP pipelines to classify a message in for emergency workers.
- Developed a recommendation engine for IBM dataset.
 - It surfaces the content most likely to be relevant to a user based on user behavior and social network data using ML techniques.
- Developed an hourly energy consumption prediction service using PyTorch.
 - It predicts hourly energy consumption (multi-variate time series) using GRU/LSTM networks.
- Developed a sentiment analysis service for Amazon customer reviews dataset using deep RNNs.
 - Achieved 82.3% accuracy on test dataset.
- Developed a Facial Keypoint Detection system using PyTorch.
 - It recognizes faces and predicts the location of 68 distinguishing keypoints for an image using deep CNNs (NaimishNet Architecture).
- Developed a 2D Landmark Detection & Robot Tracking (SLAM) using Graph SLAM algorithm.
 - It creates a map and locates landmarks of an environment using sensor and motion data gathered by a self-driving car.
- Designed and developed a web-based appointments scheduling, accounting, and management system for a Consultation Institute.
 - Replaced traditional paper-based management system and helped institute staff to efficiently manage more than 30000 appointments, 7000 transactions, and 3000 clients during two years of launching.
 - Tech Stack: Django, MySQL, HTML, CSS, and JavaScript.

Full Stack PHP Developer

2013–2014

FREELANCER

- Developed first carpooling website in Iran 4paaye.ir (Winner website of 8th Iranian Web and Mobile Festival (IWMF)).

Web Developer Internship

Summer 2014

IDEBEKR MOBIN

- Full-Stack web developer, software quality assurance, and control tester.

C/C++ Developer

2007–2011

KOSARAN HIGH SCHOOL ROBOTICS/PROGRAMMING TEAM

- Developed C/C++ codes to program AVR Micro-controllers for rescue robots.

Honors & Awards

- 2018-2019** Best researcher of Shahid Rajae University award.
- 2017–present** Recognized as a National Elite by [Iran's National Elites Foundation \(INEF\)](#).
- 2015–2017** **Ranked 1st** among all M.Sc. Computer Engineering students.
 - 2015** Received direct admission to Shahid Rajae University M.Sc. program as an elite student who achieved the highest GPA.
- 2011–2015** **Ranked 1st** among all Computer Engineering students in all of (eight) semesters of studying B.Sc.
 - Awarded Faculty of Computer and Electrical Engineering prize and scholarship as an exceptional talent student for four consecutive years.
- 2011** Ranked within top 1% among more than 464,000 applicants in B.Sc. National Universities Entrance Exam, Iran.
- Nov 2009** Qualified for the final round of *Khawrazmi National Robotics Competitions - Rescue League* (Ranked 8th in the final stage), K. N. Toosi University of Technology, Tehran, Iran.
- Apr 2009** Participated as a member of Kosaran High School Robotics Team in 4th *International RoboCup IranOpen Competitions*, Qazvin Azad University, Qazvin, Iran.
- Feb 2009** Participated as a member of Kosaran High School Programming Team in *Iranian High School Students Programming (C++) Competitions*, Sharif University of Technology, Tehran, Iran.

References are available upon request.