

# Sayed Pedram Haeri

DATA SCIENTIST · MACHINE LEARNING SPECIALIST · RESEARCH ASSISTANT · TEACHING ASSISTANT

School of Computing, Department of Computer Science, Clemson University, Clemson, USA

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## Biography

A competent engineer with a Ph.D. degree in Computer Science and two M.Sc. degrees in Artificial Intelligence and Electrical Engineering with a comprehensive knowledge of machine learning, deep learning, data science, programming, designing and developing AI systems and electrical components.

## Education

### Clemson University

Clemson, USA

PH.D. IN COMPUTER SCIENCE - RESEARCH ASSISTANT

Aug 2022 - Present

- Research Works: Machine Learning and Deep Learning Techniques with Applications to The Forest Fire Monitoring and Detection.

📄 Accomplishments: 10 Papers

📄 GPA: 4.00/4.00

### Istanbul Aydin University

Istanbul, Turkey

2<sup>ND</sup> M.Sc. IN ARTIFICIAL INTELLIGENCE AND DATA SCIENCE - RESEARCH ASSISTANT

Feb 2020 - Feb 2022

- Research Works: Machine Learning Techniques including Data Clustering and Gene Selection in The Filed of Bioinformatics.
- The 5<sup>th</sup> Best Global University in Turkey According to The USnews Report.

📄 Accomplishments: 4 Papers

📄 GPA: 3.77/4.00

### Islamic Azad University

Esfahan, Iran

1<sup>ST</sup> M.Sc. IN ELECTRICAL ENGINEERING - TEACHER ASSISTANT

Sep 2015 - Nov 2018

- Research Works: Design and Simulation of a STTRAM Memory Cell for Low Power Application.
- The 2<sup>nd</sup> Best Global University in Iran According to The USnews Report.

📄 GPA: 3.84/4.00

### Sheikh Bahaei University

Esfahan, Iran

B.Sc. IN ELECTRICAL ENGINEERING

Sep 2010 - Feb 2014

- Research Works: Building Management Systems (BMS).

## Research Interests

### Research Areas

- Computer Vision
- Artificial Intelligence
- Machine Learning
- Deep Learning
- Image Processing
- Data Analysis
- Optimization
- Bioinformatics

### Applications

- Autonomous Vehicles
- Unmanned Aerial Vehicles
- Wildfire Detection
- Wildfire Monitoring
- Robotics

## Honors & Awards

S 2024	Received travel grant award for the <b>Computer Science Conference</b> , CECAS Clemson University	Clemson, USA
F 2023	Received 1K\$ grant for the <b>Cloud Communication Workshop</b> , Georgia Tech IEEE ComSoc	Atlanta, USA
S 2023	Received 2K\$ grant for the <b>Network Communication Workshop</b> , Boston University NSF MERIF	Boston, USA
S 2023	Received 1K\$ grant for the <b>Wireless Internet of Things Workshop</b> , Northeastern University NSF	Boston, USA
F 2022	Received full scholarship for the <b>Ph.D. Program</b> , Computer Science, Clemson University	Clemson, USA
F 2022	Ranked 1 <sup>st</sup> GPA among the graduated students, Artificial Intelligence, Istanbul Aydin University	Istanbul, Turkey
F 2018	Received 50% scholarship for the <b>Master Program</b> , Artificial Intelligence, Istanbul Aydin University	Istanbul, Turkey
F 2018	Ranked 1 <sup>st</sup> GPA among the graduated students, Electrical Engineering, Islamic Azad University	Esfahan, Iran

## Computer & Programming Skills

<b>Programming Languages</b>	Python, MATLAB, C++, Rapidminer, Weka, PLC, R
<b>Simulation and Analysis Software</b>	Tableau
<b>Engineering Software and modeling</b>	AutoCad
<b>Other Softwares</b>	LaTeX, Microsoft office

## Publications

Xiwen Chen, <b>Sayed Pedram Haeri Boroujeni</b> , Abolfazl Razi	Journal, 2024
ENHANCING GRAPH NEURAL NETWORKS IN LARGE-SCALE TRAFFIC INCIDENT ANALYSIS WITH CONCURRENCY HYPOTHESIS	Under Review
IEEE Transactions on Intelligent Transportation Systems, <b>IF:8.5 (Q1)</b>	
<b>Sayed Pedram Haeri Boroujeni</b> , Abolfazl Razi, Fatemeh Afghah, et al	Journal, 2024
A COMPREHENSIVE SURVEY OF AI-ENABLED AERIAL SYSTEMS FOR MULTI-STAGE WILDFIRE MANAGEMENT - PRE, MID, AND POST-FIRE PHASES	Published
Information Fusion Journal, Elsevier, <b>IF:18.6 (Q1)</b>	
<b>Sayed Pedram Haeri Boroujeni</b> , Abolfazl Razi	Journal, 2024
IC-GAN: AN IMPROVED CONDITIONAL GENERATIVE ADVERSARIAL NETWORK FOR RGB-TO-IR IMAGE TRANSLATION WITH APPLICATIONS TO FOREST FIRE MONITORING	Published
Expert Systems with Application Journal, Elsevier, <b>IF:8.5 (Q1)</b>	
Niloufar Mehrabi, <b>Sayed Pedram Haeri Boroujeni</b> , Elnaz Pashaei	Journal, 2024
AN EFFICIENT HIGH-DIMENSIONAL GENE SELECTION APPROACH BASED ON BINARY HORSE HERD OPTIMIZATION ALGORITHM FOR BIOLOGICAL DATA CLASSIFICATION	Published
Iran Journal of Computer Science, Springer, <b>IF:1.9 (Q1)</b>	
Ahmad Sarlak, Hazim Alzorgan, <b>Sayed Pedram Haeri Boroujeni</b> , Rahul Amin, Abolfazl Razi	Conference, 2024
ENHANCED COOPERATIVE PERCEPTION FOR AUTONOMOUS VEHICLES USING IMPERFECT COMMUNICATION	Accepted
20 <sup>th</sup> International Conference on Distributed Computing in Smart Systems and IoT	
Hao Wang, <b>Sayed Pedram Haeri Boroujeni</b> , Xiwen Chen, Huayu Li, Abolfazl Razi	Journal, 2024
FLAME DIFFUSER: GROUNDED WILDFIRE IMAGE SYNTHESIS USING MASK GUIDED DIFFUSION	Submitted
ArXiv Pre-print Version	
Amirreza Talebi, <b>Sayed Pedram Haeri Boroujeni</b> , Abolfazl Razi	Journal, 2024
INTEGRATING RANDOM REGRET MINIMIZATION-BASED DISCRETE CHOICE MODELS WITH MIXED INTEGER LINEAR PROGRAMMING FOR REVENUE OPTIMIZATION	Published
Iran Journal of Computer Science, Springer, <b>IF:1.9 (Q1)</b>	
Amirreza Talebi, <b>Sayed Pedram Haeri Boroujeni</b> , Abolfazl Razi	Journal, 2024
LEADERSHIP DYNAMICS IN SOCIAL MULTIPLEX NETWORKS WITH MONO AND BI-DIRECTIONAL INTERACTIONS	Under Review
Journal of Complex Network, Oxford, <b>IF:2.1 (Q1)</b>	

### Sayed Pedram Haeri Boroujeni, Elnaz Pashaei

Journal, 2023

A HYBRID CHIMP OPTIMIZATION ALGORITHM AND GENERALIZED NORMAL DISTRIBUTION ALGORITHM WITH  
OPPOSITION-BASED LEARNING STRATEGY FOR SOLVING DATA CLUSTERING PROBLEMS

Published

✓ Iran Journal of Computer Science, Springer, **IF:1.9 (Q1)**

### Ahmad Sarlak, Sayed Pedram Haeri Boroujeni, Hazim Alzorgan, Rahul Amin, Abolfazl Razi

Conference, 2023

COOPERATIVE PERCEPTION FOR CONNECTED AUTONOMOUS VEHICLES UNDER CONSTRAINED V2V NETWORKING

Published

✓ 57<sup>th</sup> Asilomar Conference on Signals, Systems, and Computers

### Sayed Pedram Haeri Boroujeni, Elnaz Pashaei

Conference, 2021

A NOVEL GENE SELECTION BASED ON RANDOM FOREST RANKING (RFR) AND BINARY DRAGONFLY ALGORITHM (BDA)

Published

✓ 18<sup>th</sup> CCE IEEE Conference, Mexico

### Sayed Pedram Haeri Boroujeni, Elnaz Pashaei

Conference, 2021

DATA CLUSTERING USING CHIMP OPTIMIZATION ALGORITHM (CHOA)

Published

✓ 11<sup>th</sup> ICCKE IEEE Conference, Iran

### Niloufar Mehrabi, Sayed Pedram Haeri Boroujeni

Conference, 2021

AGE ESTIMATION BASED ON FACIAL IMAGES USING HYBRID FEATURES AND PARTICLE SWARM OPTIMIZATION (PSO)

Published

✓ 11<sup>th</sup> ICCKE IEEE Conference, Iran

## Presentation & Poster

### Sayed Pedram Haeri Boroujeni

Presentation, 2023

DIVERSITY MAXIMIZED SCHEDULING IN ROAD SIDE UNITS FOR TRAFFIC MONITORING APPLICATIONS

October 5<sup>th</sup>

✓ 48<sup>th</sup> IEEE Presentation on Local Computer Networks (LCN)

### Sayed Pedram Haeri Boroujeni

Presentation, 2023

EFFICIENT DEEP LEARNING FRAMEWORK FOR RGB-TO-IR IMAGE TRANSLATION FOR WILDLAND FIRE DETECTION AND  
MONITORING APPLICATIONS

April 14<sup>th</sup>

✓ EPSCoR State Conference, Joined by NASA

## Work Experience

### SABIC Company

Esfahan, Iran

RESEARCH ASSISTANT & COMPUTER TECHNICIAN

Feb 2017 - Sep 2019

- Assemble and configure computer components and troubleshoot their technical issues.
- Design and develop a wide range of professional websites and investigate new techniques to improve website initiatives.
- Conduct various research to perform insightful analytics on large datasets to increase the data processing efficiency.

### Rooyesh English Language Institute

Esfahan, Iran

ENGLISH LANGUAGE INSTRUCTOR

May 2014 - Dec 2018

- Teaching assistant for listening and reading skills.
- Speaking class for children and teenagers.
- Examiner for the Writing tests.

### Faraz Pouya Faal

Esfahan, Iran

ELECTRICAL ENGINEERING TECHNICIAN

Jun 2013 - Aug 2013

- Trouble shooting and repairing the electronic elevator boards.
- Participated in installing the components of the elevator.

## Teaching Experience

### Teaching Assistant

Istanbul, Turkey

DEPARTMENT OF COMPUTER ENGINEERING, COLLEGE OF ENGINEERING, ISTANBUL AYDIN UNIVERSITY

Feb 2020 - Feb 2022

- Machine Learning
- Artificial Intelligence
- Calculus for Data Science
- Optimization Methods
- Mathematics

► My responsibilities include lectures, exams, homework assignments, and grades.

## Teaching Assistant

DEPARTMENT OF ELECTRICAL ENGINEERING, COLLEGE OF ENGINEERING, ISLAMIC AZAD UNIVERSITY

Esfahan, Iran

Nov 2016 - Nov 2018

- Engineering Mathematics
- Computer Architecture
- Computer Programming
- Electronics I
- Circuits I

► My responsibilities include lectures, exams, homework assignments, and grades.

## Reviewer

S 2024	<b>Expert Systems with Applications Journal</b> , IF:8.66, Q1	23 Papers
S 2024	<b>Trees, Forests and People Journal</b> , IF:2.70, Q1	1 Papers
S 2024	<b>Evolving Systems Springer Journal</b> , IF:3.20, Q1	1 Papers
F 2023	<b>Transaction on Intelligent Transportation Systems</b> , IF:8.5, Q1	1 Papers
S 2023	<b>Applied Soft Computing Journal</b> , IF:8.26, Q1	2 Papers
F 2023	<b>Knowledge-Based Systems Journal</b> , IF:8.13, Q1	4 Papers
S 2022	<b>Image and Vision Computing Journal</b> , IF:3.86, Q1	2 Papers
S 2022	<b>Journal of Computer and System Sciences</b> , IF:1.04, Q1	2 Papers

## Academic Courses

F 2023	<b>Advanced Machine Learning</b> , Clemson University, Dr. Kai Liu	4.00/4.00
F 2023	<b>Software Engineering</b> , Clemson University, Dr. Paige Rodeghero	4.00/4.00
S 2023	<b>Deep Learning</b> , Clemson University, Dr. Feng Luo	4.00/4.00
S 2023	<b>AI in Autonomous Vehicles</b> , Clemson University, Dr. Abolfazl Razi	4.00/4.00
F 2022	<b>Artificial Intelligence</b> , Clemson University, Dr. Abolfazl Razi	4.00/4.00
F 2020	<b>Pattern Recognition</b> , Istanbul Aydin University, Prof. Naim Ajlouni	4.00/4.00
F 2020	<b>Optimization</b> , Istanbul Aydin University, Dr. Elnaz Pashaei	4.00/4.00
S 2020	<b>Machine Learning</b> , Istanbul Aydin University, Dr. Ilknur Donmez	4.00/4.00
S 2020	<b>Data Mining</b> , Istanbul Aydin University, Dr. Elnaz Pashaei	4.00/4.00

## Online Courses

F 2021	<b>Deep Learning</b> , University of Michigan	Certificate
F 2021	<b>Artificial Intelligence</b> , Google Cloud & IBM & DeepLearning AI	Certificate
F 2021	<b>Machine Learning</b> , Washington University & University of Albera & IBM	Certificate
F 2021	<b>Python</b> , University of Michigan & Google & IBM	Certificate

## References

### Abolfazl Razi

Associate Professor

SCHOOL OF COMPUTING, DEPARTMENT OF COMPUTER SCIENCE, CLEMSON UNIVERSITY, CLEMSON, USA

PhD Supervisor

► ✉ [arazi@clemson.edu](mailto:arazi@clemson.edu)

### Fatemeh Afghah

Associate Professor

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING, CLEMSON UNIVERSITY, CLEMSON, USA

PhD Supervisor

► ✉ [fafghah@clemson.edu](mailto:fafghah@clemson.edu)

### Elnaz Pashaei

Assistant Professor

DEPARTMENT OF SOFTWARE ENGINEERING, FACULTY OF ENGINEERING, ISTANBUL AYDIN UNIVERSITY, TURKEY

Master Supervisor

► ✉ [elnazpashaei@aydin.edu.tr](mailto:elnazpashaei@aydin.edu.tr)

### Naim Ajlouni

Professor

DEPARTMENT OF COMPUTER ENGINEERING, FACULTY OF ENGINEERING, ISTANBUL ATLAS UNIVERSITY, TURKEY

Master Instructor

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