Sam Hamzeloo, Ph.D.

Assistant Professor
AI Researcher & Developer

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Education

Ph.D. in **Artificial Intelligence**
from Shiraz University
Graduated 2019

M.S. in **Artificial Intelligence**
from Shiraz University
Graduated 2012

B.S. in **Computer Engineering**
from Shiraz University
Graduated 2009

Skills

Programming Languages:
Java(+12 years), Python, C/C++

Frameworks & Tools:
Tensorflow, scikit-learn, Keras, OpenAI Gym, Apache Spark, Unity, NetBeans, TouchDesigner

Other skills:
Teaching(+10 years), RESTful API, MLOps, Technical Project Management, Full-Stack Web Development, Game Programming

Area of Expertise

- Reinforcement Learning
- Deep Learning
- Multi-Agent Systems
- Fuzzy Systems
- Computer Vision
- Distributed Systems
- Financial Data Analysis
- Machine Learning

Summary

A PhD graduate in Artificial Intelligence with +6 years of hands-on experience in building machine-learning models and +10 years of experience in application design, development and technical project management. Highly experienced in variety of machine learning approaches (e.g. Reinforcement Learning, Deep Learning) and proficient with various programming languages (e.g. Java, Python), frameworks and tools (e.g. Tensorflow, Apache Spark, Unity) and various types of data (e.g. image, time series). Keen to apply AI approach to solve real world problems. Unrivalled skill to identify, understand and turn requirements into advanced technical solutions for continuous business improvement.

Career history

Industrial Experience

AI Engineer & Developer **2023-present**
Parsons school of design, The New School, New York
- Using ML methods in Artistic Interior Design (Remote)

Ortex Solutions Company, Australia
- Developing an AI-based system to provide analytical reports for use in clinical decision-making (Remote)

AI Specialist Consultant **2023-present**
Research Center of the Islamic City Council of Shiraz
- Head of the Innovation and Smartification Task Force

Co-Founder **2020-2023**
Deep Sense Intelligent Computing company

Technical Project Manager & Developer **2020-2023**
at Deep Sense Intelligent Computing company
- Developed practical & useful ML methods for Drug–Target interaction prediction problem.
- Designed, developed and deployed several cloud based AI services
- Designed & developed a stock trading recommender system

AI Engineer **2011-2016**
at Computer Vision and Pattern Recognition (CVPR) Lab., Shiraz University
- Built a Java based software for the first Iranian *Diagnostic Ultrasound Machine*.
- Implemented image processing methods to enhance the ultrasound machine images.
- Designed & developed *Laparoscopic Surgery Simulator* using game engines

Honors & Awards

Ranked **1st** among PhD Students of the Department with major field of Artificial Intelligence

7th Place Award, ACM Asia Programming Contest, Tehran Site, 2007, as **Contestant** with Shiraz University

13th Place Award, ACM Asia Programming Contest, Tehran Site, 2006, as **Contestant** with Shiraz University

17th Place Award, ACM Asia Programming Contest, Tehran Site, 2014, as **Coach** with Pasargad Higher Education Institute

3 Honorable Mention Awards, ACM Asia Programming Contest, Tehran Site, 2009-2013, as **Coach**

4th Place Award, JCAL (Java Contest and Acquisition Language) Contest, Mazandaran University of Science and Technology, Babol, Mazandaran, Iran, 2009.

Sport

Member of Shiraz university basketball team from 2005 to 2010.

- Participated in developing intelligent financial fraud detection system

Technical Project Manager & Developer **2008-2009**
- Designed, developed and deployed a java-based online library called DigLib.

Java Developer **2008**
at Ava-Afzar company, Shiraz
- Developed Java-based web applications

Research Experience

AI Researcher **2020-2023**
at Innovation and Development of Artificial Intelligence Center, Iran Telecommunication Research Center (ITRC)
- Develop new deep learning methods for lesion detection on dental x-rays
- Developed a multi-agent deep reinforcement learning method based on actor-critic to improve resource allocation policy in 5G wireless networks.
- Presented a comprehensive definition of AI and its sub-branches and introduced practical AI methods in "*The National Artificial Intelligence Development plan*" project.
- Researched stakeholder, their relations and requirements in AI applications development ecosystem
- Extracted industrial applications of AI
- Developed a deep reinforcement learning technique for generating stock market trading policy
- Contributed to presenting a fuzzy model for stock market prediction

Head of Cloud Computing & Distributed Systems Lab **2018-2022**
Pasargad Higher Education Institute
- Set up a *cloud computing & distributed systems* laboratory

AI Researcher **2009–2018**
at Intelligent Systems Group, Shiraz University
- Researched & developed AI techniques for multi-agent systems

Teaching Experience

Graduate Courses

Distributed Systems	*Pasargad Higher Education Institute*	2016-present
Fuzzy Systems	*Pasargad Higher Education Institute*	2018-present
Pattern Recognition	*Pasargad Higher Education Institute*	2020-present
Artificial Neural Network	*Pasargad Higher Education Institute*	2022-present
Cloud Computing	*Pasargad Higher Education Institute*	2019-present
Intelligent Planning	*Pasargad Higher Education Institute*	2019-present
Game Theory	*Pasargad Higher Education Institute*	2017-2019
Decision Support Systems	*Pasargad Higher Education Institute*	2016-2022
Enterprise Architecture	*Pasargad Higher Education Institute*	2015
Health Information Tech.	*Shiraz University of Medical Sciences*	2014

Undergraduate Courses

Artificial Intelligence	*Shiraz University*	2013-2020
Advanced Programming	*Shiraz University*	2013-2019
Numerical Computation	*Shiraz University*	2013-2020
Artificial Intelligence	*Pasargad Higher Education Institute*	
OOP with Java	*Pasargad Higher Education Institute*	
Design of Algorithms	*Pasargad Higher Education Institute*	
Expert Systems	*Pasargad Higher Education Institute*	
Machine Language and System Programming	*Pasargad Higher Education Institute*	

Publications

Journal Papers

1. H. Shahparast**, S. Hamzeloo**, E. Safari, “An incremental type-2 fuzzy classifier for stock trend prediction”, Expert Systems with Applications, Vol. 212, 2023.
2. **S. Hamzeloo**, M. Zolghadri Jahromi, “Decentralized Incremental Fuzzy Reinforcement Learning for Multi-Agent Systems”, International Journal of Uncertainty Fuzziness and Knowledge-Based Systems, Vol. 28, No. 1, 2020.
3. **S. Hamzeloo**, M. Zolghadri Jahromi, “Developing Communication Strategy for Multi-Agent Systems with Incremental Fuzzy Model”, (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 9, No. 8, 2018.
4. H. Shahparast, M. Zolghadri Jahromi, M. Taheri, **S. Hamzeloo**, “A novel weight adjustment method for handling concept-drift in data stream classification”, Arabian Journal for Science and Engineering (AJSE), 2012.
5. H. Shahparast, **S. Hamzeloo**, M. Zolghadri Jahromi, “A Self-Tuning Fuzzy Rule-Based Classifier for Data Streams”, International Journal of Uncertainty, Fuzziness and Knowledge-based Systems, 2014.

Conference Papers

1. **S. Hamzeloo**, M. Zolghadri Jahromi, “An incremental fuzzy controller for large dec-POMDPs”, International Symposium on Artificial Intelligence and Signal Processing Conference (AISP), 2017, Shiraz, Iran.
2. **S. Hamzeloo**, H. Shahparast, M. Zolghadri Jahromi, “A Novel Weighted Nearest Neighbor Ensemble Classifier”, 16th International Symposium on Artificial Intelligence and Signal Processing (AISP 2012), May 2012, Shiraz, Iran.
3. H. Shahparast, M. Taheri, **S. Hamzeloo**, M Zolghadri Jahromi, “An Online Rule Weighting Method to Classify Data Streams”, 16th International Symposium on Artificial Intelligence and Signal Processing (AISP 2012), May 2012, Shiraz, Iran.
4. **S. Hamzeloo**, H. Shahparast, M. Taheri, M. Zolghadri Jahromi, “weight adjusting in neural networks with non-derivative functions”, International Conference on Contemporary Issues in Computer and Information Science, May 2011, Zanjan, Iran (In Persian).