Masoumeh Siar

Researcher

12 May 1990

https://scholar.google.com/citations?user=Jsvcl8sAAAAJ&hl=en

(+98) 09366021369

linkedin.com/in/masoumeh-siar

M.siar@srbiau.ac.ir
Masoumeh.siar@gmail.com

About me

I am Masoumeh Siar, I am interested in machine learning and Deep Learning and related areas also I am interested in medical images in this field. Recently, I am working with a Medical sciences research " Convergent Research Institute " in Iran (http://utnbic.ir).

Language

Japanese

Arabic

English

Persian

About me

In 2008, I graduated from Shahed High School with a degree in Mathematics and Physics. And because I was very interested in computers, I entered the university immediately after being accepted in the field of computers. I received my bachelor's degree with a grade point average of 17.54 from Babolsar University. After searching and gaining knowledge, I became interested in artificial intelligence topics and graduated from Tehran University of Research Sciences with a master's degree in artificial intelligence with a grade point average of 17.54. I have been one of the top students at both levels. In my bachelor's and master's dissertations, I studied "Routing rescue robots" and genetic algorithms, respectively, and got a maximum score of 20. In my master's thesis in the field of "Deep Neural Network" and image processing and Machine Learning, I researched and studied and got a maximum score of 18.

Education

2015-2017 M.Sc. in Computer Science-Artificial Intelligence
Tehran Science and Research Branch.Tehran,Iran.

2010-2012 B.Sc. in Computer science-Software Engineering
Parsa Institute Of Higher Education. Babolsar, Iran.

2002-2008 Shahed-High school
Specializing in mathematics and physics. Qaemshahr, Iran

Research Assistantship

2016-2017 Intelligent Systems Laboratory (ISLab), supervisor: Prof. Mohammad Teshnehlab. Research Topic: Deep learning for Medical Images, K. N. Toosi University of Technology, Tehran, Iran.

Honors and Awards

2021 Iran's National Elites Foundation(Rahneshan) Team Competitions First prize and first place in Anomaly Detection category. Tehran, iran

2012 Graduated with honors in Bachelor of Science from Parsa Institute Of Higher Education. Babolsar, Iran

2011-2012 Member of the Academic Society of Computer Engineering at Parsa University. Babolsar, Iran

Experience

2021 Working as part of "Machine learning application in medical since (diagnose depressed patients)" project, Shahid Ahmadi-roshan grant from Iran's National Elites Foundation. Center for converging technologies (http://utnbic.ir/).

2017-2021 Member of the Young Researchers Club, Islamic Azad University. Tehran, Iran.

2017 I gave a lecture on deep learning and the operation of deep networks in the Deep Learning Workshop at the 25th Iranian Electrical Engineering Conference (icee2017), at K. N. Toosi University of Technology, Tehran, Iran.

Work Experience

2011 Internship in Telecommunication company Of Iran, Mazandaran

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Skills

- OpenCV
- Keras
- pythorch
- Google Colab
- python
- Matlab
- C#
- C, C++
- Asp.net, SQL server
- java
- joomla
- MS-DOS
- Latex
- Photoshop, Adobe Flash, Prezi

Conferences and competitions Attend

IUST 2018	Attended and participated in 49th Annual Iranian Mathematics conference, Iran University of Science and Technology (IUST).
2016	Attended and participated in 2th Science and Technology Achievements of Computer Engineering Students ExhibitionIslamic Azad University, Science and Research Branch. Tehran, Iran
2016	Attended in International Conference on New Research Achievements in Electrical and Computer Engineering, Amirkabir university of Technology, Iran
ICeLeT 2015	Attended in 9th Annual Iran Conference on E-Learning (ICeLeT 2015).
AAIC 2015	Attended and participated in 3th Amirkabir Artificial Intelligence Competitions(face detection team). Tehran, Iran
AAIC 2013	Attended and participated in 2th Amirkabir Artificial Intelligence Competitions (face detection team). Tehran, Iran
ICEE 2013	Attended in 21th Iranian Conference Electrical Engineering (ICEE), Ferdowsi university of Mashhad, Iran.

Publications

2021	Siar M, Teshnehlab M. Analysis of brain MRI images for tumor detection and classification using feature extraction algorithms and deep learning. IET Image Processing : (REVISE paper)
2019	Siar M, Teshnehlab M. Age Detection from Brain MRI Images Using the Deep Learning. In2019 9th International Conference on Computer and Knowledge Engineering (ICCKE) 2019 Oct 24 (pp. 369-374). IEEE.
2019	Siar M, Teshnehlab M. Brain Tumor Detection Using Deep Neural Network and Machine Learning Algorithm. In2019 9th International Conference on Computer and Knowledge Engineering (ICCKE) 2019 Oct 24 (pp. 363-368). IEEE.
2019	Halimeh Siar, Mohmmad Teshnehlab: "Diagnosing and Classification Tumors and MS Simultaneous of Magnetic Resonance Images Using Convolution Neural Network". 2019 7th Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS), Bojnord, Iran, IEEE.
2019	Siar M, Teshnehlab M. Age and Gender Classification from Brain MRI Images Using the Convolutional Neural Network, Iranian conference on Biomedical Engineering (ICBME 2019).
2018	Halimeh Siar, Mohmmad Teshnehlab: "Analysis Brain MRI Images for Tumor Detection Using Convolutional Neural Network". 49th Annual Iranian Mathematics conference, Iran University of Science and Technology, Tehran, Iran.
2018	Halimeh Siar, Fatemeh Siar: "Evaluating the Effecty of Deep Learning in Speech Classification". 49th Annual Iranian Mathematics conference, Iran University of Science and Technology, Tehran, Iran.

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INTERESTS

- Robotics
- Fuzzy Logic
- Machine vision
- Speech Processing
- Speaker recognition
- Computer Vision
- Evolutionary Algorithms
- Image and Video Processing
- Neural Network
- Convolution Neural Network
- Deep Learning
- Machine Learning

Research Experience

2017 — M.Sc. Thesis:

Analysis Brain Magnetic Resonance Images for Tumor Detection and Classification Using Feature Extraction Methods and Convolutional Neural Network. Abstract: In the United States, it is estimated that 23,000 new cases of brain cancer were detected in 2015. While gliomas are the most common brain tumors, they are the most common, leading to a very short life expectancy at the highest levels, and at the lowest level of life expectancy of over two years. Timely and prompt diagnosis and treatment planning lead to improved quality of life and increased life expectancy in these patients. Magnetic resonance imaging is an imaging technique that provides accurate images of the brain and is one of the most common tests used to diagnose and evaluate brain tumors. Similarly, MRI images can have a major impact on disease improvement, diagnosis, prediction, growth, and treatment planning. For this purpose, the exact diagnosis of a tumor by a doctor depends on the doctor's skill and is of great importance. The use of deep neural networks to help classify and identify a tumor helps the physician to properly diagnose the tumor and minimize the error rate. In this thesis, the thesis describes the categorization of urinary tumor images of the brain into two groups of normal and tumor, using deep learning methods, especially the convolutional neural network. The basis of this network is the convolutional layer that works very well to find out the features in the images, and if we put some of these layers back together, they will wonderfully learn a hierarchy of nonlinear features.

Supervisor: Mohammad Teshnehlab, Assistant professor, Computer Engineering Department, K.N.Toosi University of Technology, Tehran, Iran. Thesis grade: 18 out of 18.

2012 — B.Sc Thesis:

Investigating cutting and mutation operators in the routing of relief agents. Abstract: Routing problem of rescue agents in the earthquake disaster plays an important role in the assistance of victims. Routing of agents is done by using genetic algorithm that each agent can help victims using the shortest path. Optimal routing in the earthquake disaster help rescue agents to relief victims in a shorter time and so number of victims that rescue agents can relief are increase. In this thesis different types of crossover and mutation operators of genetic algorithm are used for finding the shortest path for rescue agents. First the routing of rescue agents are introduced, in the next section an introduction of genetic algorithm will introduce and in the last section different types of crossover and mutation operators will discuss and then compare with each other.

Supervisor: Reza Jahnbin Ardebili, Instructor, Computer Engineering Department, Parsa Institute Of Higher Education, babolsar, Iran. Thesis grade: 20 out of 20.

References

Prof. Mohammad Teshnehlab (my M.Sc degree supervisor) Faculty member of Electrical Eng. Department of K. N. Toosi University of Technology, Tehran, Iran.

☎ Phone: (+98)021-84062323, ✉ E-Mail: teshnehlab@eetd.kntu.ac.ir

Dr. Hadi Farahani at Shahid Beheshti University. Tehran, Iran.

✉ E-Mail: h_farahani@sbu.ac.ir

Dr. Hamed Shah-Hosseini at Department of Computer Engineering, Tehran Science and Research Branch.Tehran, Iran.

✉ E-Mail: Hamed.shah-hosseini@gmail.com

Dr. Arash Sharifi, Faculty member of Computer Engineering, Tehran Science and Research Branch.Tehran, Iran.

✉ E-Mail: Arash.sharifi@gmail.com

Dr. Reza jahanbin (my B.Sc degree supervisor) at Parsa Institute Of Higher Education, babolsar, Iran.

✉ E-Mail: Reza.jahanbin@gmail.com