Alireza Afzal Aghaei

Data Scientist

I am a dedicated and highly motivated computer scientist with a strong academic background and a passion for cutting-edge technology. My journey in the world of computer science has led me to excel in various domains, from machine learning and deep learning to scientific computation. Currently pursuing a Ph.D. in Computer Science at Shahid Beheshti University, I am actively engaged in developing innovative solutions for solving complex differential and integral equations using physics-informed machine learning algorithms. My research and academic achievements have been recognized with outstanding grades, and my commitment to advancing the field is reflected in my roles as a Lecturer and Research Assistant at the same institution, where I impart knowledge on fundamentals of programming, mathematical software, and advanced data mining. With a strong foundation in programming languages, mathematical software, and a range of technical skills, including Python, GNU/Linux, web development, and data science, I am eager to contribute my expertise to challenging projects and continue my journey of growth and innovation in the field of computer science.

Personal info

Address

Boys Dormitory, Daneshju Blvd, Velenjak, Tehran, Iran

Phone

+98 937-622-4365

E-mail

alirezaafzalaghaei@gmail.com

Date of birth

07 Jun 1996

Marital status

Single

Military status

Educational Exemption

LinkedIn

linkedin.com/in/afzalaghaei

GitHub

github.com/alirezaafzalaghaei

Stackoverflow

stackoverflow.com/users/4348709

Quera

quera.org/profile/kcvf48

Google Scholar

scholar.google.com/citations?user=EYSSZjMAAAAJ

ResearchGate

researchgate.net/profile/Alireza-Afzal-Aghaei

ORCiD

orcid.org/0000-0001-9505-819X

Telegram

t.me/conficker

Experience

Dec 2020
Present

Principal Data Scientist

T1Solution

Machine Learning and Deep Learning solutions for Eye Diseases

Sep 2022
Jan 2024

Lecturer

Shahid Beheshti University

Fundamentals of Programming, Mathematical Softwares I and II

Sep 2022
Jan 2024

Research Assistant

Shahid Beheshti University

Feb 2022
Jan 2024

Teacher Assistant

Shahid Beheshti University

Advanced Data Mining, Data Mining, Numerical Analysis, Numerical Linear Algebra

Oct 2018
Nov 2018

Teacher Assistant

Shahid Beheshti University

Fundamentals of Programming

Sep 2015
Mar 2018

Teacher Assistant

Damghan University

Fundamentals of Programming, Advanced Programming, and Data Structures

Education

Jan 2021
Present

School of Data Science and Computer, Shahid Beheshti University, Iran

Ph.D, Computer Science

Thesis: Developing Physics-Informed Machine Learning Algorithms For Solving Differential And Integral Equations, Supervised by Kourosh Parand

Sep 2018
Sep 2020

School of Data Science and Computer, Shahid Beheshti University, Iran

M.Sc. Computer Science, Scientific Computation. Outstanding Student, Superior Grade 19.19/20

Thesis: Extending machine learning algorithms for solving Fredholm integral equations, Supervised by Kourosh Parand, Advised by Jamal Amani Rad

Sep 2014
May 2018

School of Mathematics and Computer Science, Damghan University, Iran

B.Sc. Computer science. Outstanding Student, Superior Grade 19.35/20

Thesis: Solving Fredholm integral equations of the second kind using parallelized modified cuckoo optimization algorithm, Supervised by Hassan Dana Mazraeh

Publications (Highlights)

fKAN: Fractional Kolmogorov-Arnold Networks with Trainable Jacobi Basis Functions

A.A. Agahei

Neurocomputing (2025)

Hyperparameter optimization of orthogonal functions in the numerical solution of differential equations

A.A. Agahei, K. Parand

Mathematical Methods in the Applied Sciences (2025)

Automated Depression Recognition Using Multimodal Machine Learning: A Study on the DAIC-WOZ Dataset

A.A. Agahei, N. Khodaei

Computational Mathematics and Computer Modeling with Applications (2024)

Automated assessment of the smoothness of retinal layers in optical coherence tomography images using a machine learning algorithm

J. Saeidian, T. Mahmoudi, H. Riazi, Z. Montazeriani, A. Khodabande, M. Zarei, N. Ebrahimiadib, B. Jafari, A.A. Aghaei, H. Azimi, E. Khalili Pour

BMC Medical Imaging (2023)

Parallel LS-SVM for the numerical simulation of fractional Volterra's population model

K. Parand, A.A. Agahei, M. Jani, A. Ghodsi

Alexandria Engineering Journal (2021)

Books

راهنمای کاربردی پایتون برای علم داده‌ها

View Table of Contents in ResearchGate

View in National Library and Archives of Iran (NLAI)

Patents

روش و سامانه تشخیص ناهنجاری های قرنیه چشم برمبنای هوش مصنوعی

View in Deeds and Properties Registration Organisation of Iran

Skills

Python

Python 3.x and it's internals

● ● ● ● ○

GNU/Linux

Manjaro, Ubuntu, Bash, KDE desktop

● ● ● ○ ○

Mathemtical Softwares

● ● ● ○ ○

Matlab, Maple, Octave

Web Developement

HTML, CSS, JavaScript, Ajax, PHP (Telegram Bot), Django, Sanic, Wordpress
● ● ● ○ ○

Databases

Basic knowledge of MySQL, SQLite, Redis
● ● ○ ○ ○

Other skills

Data Science

Machine Learning and Deep Learning Algorithms
● ● ● ● ○

Evolutionary Algorithms

Genetic Algorithm, Cuckoo Optimization Algorithm, and Chimp Optimizatino Algorithm
● ● ● ● ○

Parallel Computation

Familiar with OpenMP, MPI, Cuda
● ● ● ○ ○

C-Family Programming Languages

C, C++, C#
● ● ● ○ ○

Computer Vision

Basic knowledge of Image Processing techniques
● ● ○ ○ ○

LaTeX

Familiar with LaTeX, XePersian, Beamer and Tikz
● ● ○ ○ ○

Microsoft Office Suite

Familiar with Microsoft Word, Powerpoint and Excel
● ● ○ ○ ○

Version Control Systems

Basic knowledge of Git
● ○ ○ ○ ○

Adobe Creative Suite

Basic experience in Photoshop, Illusterator, After Effects, Character Animator
● ○ ○ ○ ○

Current studies

Machine learning and Deep learning

Using Deep learning techniques for solving real-world problems

Scientific computation

Differential and Integral Equations, Numerical Analysis, and Numerical Linear Algebra

Projects

TChat

Implementation of a Terminal-Based Chat Application[Source Code]

Parallel Cuckoo Optimization Algorithm

Implementation of Parallel COA in C++ [Source Code]

Web-Based music player

A simple web-based music player for a local network [Source Code]

RSS Reader Chrome Extension

Replace Chrome's new page tab with the latest news [Source Code]

Electronic Election System

An Electronic Election System written in Django [Source Code]

A Persian Beamer Template

A Persian Beamer Template for Slides [Source Code]

Languages

Persian

Native

● ● ● ● ○

English

SBUTEP 67/100

● ● ○ ○ ○

References

Kourosh Parand

Professor of Scientific Computing, Shahid Beheshti University, Department of Computer Science

k_parand@sbu.ac.ir

Hassan Dana

Lecturer at school of mathematics and computer science, Damghan University

dana@du.ac.ir