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. Ph.D. in Computer Science from 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
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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

Oct 2025 – Present — **Machine Learning Instructor**
OnAcademy
Machine Learning and & Python Instructor

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 – Sep 2025 — **School of Data Science and Computer, Shahid Beheshti University, Iran**
Ph.D, Computer Science, Superior Grade 19.26/20
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)

KANtrol: a physics-informed Kolmogorov–Arnold network framework for solving multi-dimensional and fractional optimal control problems

A.A. Agahei

Engineering with Computers (2025)

Towards Quantifying Bias in Large Language Models

A. Nosrati, A.A. Aghaei, R.H. Davies, R. Ramnath

NeurIPS 2025 Workshop on Efficient Reasoning

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)

A symbolic dataset for large language models to solve second kind Fredholm integral equations

H. Dana, S. Eslami, A.A. Aghaei, K. Parand

Scientific Data 1 (2025)

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 ناهنجاري هاي قرنیه چشم برمبناي هوش مصنوعي

View in Deeds and Properties Registration Organisation of Iran

Skills

Data Science

Machine Learning and Deep Learning Algorithms

Python

Python 3.x and it's internals

GNU/Linux

Manjaro, Ubuntu, Bash, KDE desktop

Evolutionary Algorithms

Genetic Algorithm, Cuckoo Optimization Algorithm, and Chimp Optimization Algorithm

Mathematical Softwares

Matlab, Maple, Octave

Other skills

C-Family Programming Languages

C, C++, C#

Parallel Computation

Familiar with OpenMP, MPI, Cuda

LaTeX

Familiar with LaTeX, XePersian, Beamer and Tikz

Microsoft Office Suite

Familiar with Microsoft Word, Powerpoint and Excel

Web Developement

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

Databases

Basic knowledge of MySQL, SQLite, Redis

Computer Vision

Basic knowledge of Image Processing techniques

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