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Iran, Mashhad • 6 Oct 2001

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Summary

AI Engineer and Machine Learning Researcher with a strong academic and practical background in artificial intelligence, biomedical engineering, and applied machine learning. Experienced in designing, developing, and deploying end-to-end AI systems across healthcare, autonomous systems, speech analytics, and intelligent assistants, with hands-on expertise in deep learning, computer vision, signal processing, and reinforcement learning. Proven ability to lead technical projects from research and prototyping to production-grade solutions, supported by solid experience in MLOps, backend systems, and academic instruction. Passionate about building scalable, impactful AI solutions that bridge cutting-edge research and real-world applications.

Additionally, has extensive experience working with multimodal data alongside modern LLM-based architectures such as RAG systems, multimodal search, and fine-tuned transformer models. Adept at collaborating with interdisciplinary teams, mentoring junior engineers, and translating complex technical concepts into practical, deployable solutions for both academic and industrial environments.

Education

ISLAMIC AZAD UNIVERSITY

Master's degree, Computer Science - Artificial Intelligence

Mashhad, Iran

Sep 2024 – Present

IMAM REZA INTERNATIONAL UNIVERSITY

Bachelor's degree, Biomedical Engineering

Mashhad, Iran

Sep 2020 – Jun 2024

Experience

FREELANCE

AI Engineer

Mashhad, Iran

Sep 2023 – Present

IMAM REZA INTERNATIONAL UNIVERSITY

Technical Innovation Lead

Mashhad, Iran

Jun 2023 – Present

Spearheaded technical consulting for technology incubators and engineered cutting-edge solutions across key digital transformation domains. Led cross-functional project execution from concept to deployment.

- **Intelligent Systems:** Developing core intelligence for autonomous mobility systems, AI-powered threat assessment platforms, and adaptive conversational agents.
- **Machine Learning Systems:** Designed and implemented predictive models for academic and industrial applications
- **MLOps Architecture:** Established end-to-end model lifecycle management pipelines and CI/CD frameworks
- **Back-End Engineering:** Developed scalable cloud-native APIs and microservices infrastructure

IMAM REZA INTERNATIONAL UNIVERSITY
Instructor

Mashhad, Iran
Sep 2022 – Aug 2023

Designed and delivered specialized workshops and training programs in artificial intelligence and computer science. Led comprehensive internship courses and technical courses focused on AI implementation.

- 2022, Advance Python Programming
- 2022, Version Control (Git Basic)
- 2023, Basic MATLAB Programming
- 2023, Signal Processing with MATLAB
- 2023, Machine Learning Basic
- 2023, Basic Python Programming
- 2023, Programming with Python

BLUEHEALTH ACCELERATOR
Machine Learning Researcher

Mashhad, Iran
2021 – 2023

Research and development of machine learning and computer vision systems across healthcare and industrial domains, with a focus on designing AI-powered diagnostic solutions. Additionally provided specialized consultation to tech startups within the accelerator on implementing and optimizing machine learning models.

- Designed and implemented medical diagnostic systems leveraging computer vision for enhanced clinical decision support
- Developed robust image and video processing algorithms tailored for diverse industrial applications
- Guided and collaborated with portfolio startups on deep learning model design, training, and deployment for platforms

Skills

Language: Persian (Native), English (Limited working proficiency)

Laboratory: Experimental Design, Statistical Analysis, Data Annotation, Data Collection

Technical: Python, C++, MATLAB, TensorFlow, PyTorch, Git, Linux, React, FastAPI

Projects

Intelligent Voice Analytics System for Customer Call Processing at Mashhad Electric Utility Company

AVAI is an intelligent audio processing and analysis system designed to automatically process, analyze, and extract actionable insights from customer service call recordings at the Mashhad Electric Utility Company. The system focuses on large-scale voice data processing to support quality monitoring, issue categorization, and operational decision-making. By leveraging advanced speech processing and artificial intelligence techniques, AVAI enables the automatic transcription, classification, and semantic analysis of customer calls. The platform assists managers and analysts in identifying recurring complaints, service disruptions, and customer sentiment patterns, thereby improving response efficiency and service quality. This solution provides a scalable and data-driven approach to transforming unstructured audio data into meaningful operational intelligence for utility service management.

Resident Training Management System for Khatam Al-Anbia Hospital

This project was developed to streamline and manage the educational processes of medical residents at Khatam Al-Anbia Hospital. The system provides an integrated platform for registering students, scheduling clinical rotations, organizing and administering exams, and tracking academic progress. Built with a focus on efficiency and scalability, the software enables department heads and coordinators to manage training activities through a centralized interface. Features include automated rotation planning, real-time notifications, secure exam conduction, and performance analytics. This solution significantly enhances the transparency, organization, and quality of the medical residency training process.

ROP Disease Detection using Ensemble Deep Neural Networks

This research-focused project aims to improve the accuracy and reliability of Retinopathy of Prematurity (ROP) diagnosis through the application of ensemble deep learning models. By integrating state-of-the-art convolutional neural networks such as ResNet and Inception, the system leverages multiple feature extractors to enhance diagnostic precision. The training and evaluation of the models were conducted using medical imaging datasets obtained from Khatam Al-Anbia Hospital and Ferdowsi University of Mashhad. The ensemble approach significantly improves generalization and reduces false diagnoses, offering a powerful tool to assist ophthalmologists in early and accurate detection of ROP, ultimately contributing to better clinical outcomes.

Comprehensive Learning Management System

The foundation of such a system is the identification and integration of essential features that streamline and enhance the learning experience. This software solution leverages the powerful capabilities of C# and .NET to create an intuitive, scalable, and efficient platform for educational institutions. The systematic approach employed in this software encompasses a thorough analysis of user interactions, which not only facilitates effective management of learning activities but also contributes to the continuous improvement of educational quality through detailed analytics and feedback mechanisms.

Talent Classification using EEG Signal and Deep Learning

Classifying individuals based on their inherent talents is a significant step towards personal development and improving the quality of life. The prerequisite for this matter is the identification of features that can define talents in various domains. The innovative and reliable strategies employed in this research involve the examination of cognitive factors in individuals, which not only facilitates classification but can also be utilized for analyzing the learning process and subsequently enhancing the quality of education.

Personal Attribute Classification through Body Composition Analysis

This project focuses on developing a classification system to identify and categorize individual characteristics based on body composition analysis. By leveraging advanced techniques in body composition assessment, such as bioelectrical impedance analysis (BIA) or dual-energy X-ray absorptiometry (DEXA), the system aims to extract pertinent features that can be utilized for personalized attribute classification. The objective is to create a robust and efficient classification model capable of categorizing individuals based on various characteristics, such as body fat percentage, muscle mass, and bone density. This classification approach has potential applications in health and fitness assessments, personalized training programs, and overall well-being management.

Access Control System for Personnel Management Based on Face Recognition

In this project, an access management system has been developed utilizing face recognition for the registration of individuals' entries and exits. With high precision, the system determines the access levels based on the analysis of facial features using artificial intelligence algorithms. This system not only enhances security but also empowers managers to optimally utilize organizational resources by effectively managing access levels.

An Investigation into Interactions among Frontal, Central, and Occipital Brain Channels in the Domain of Chaos

Bachelor thesis – Imam Reza International University

Following the acquisition of CQEEG brain signal data, an in-depth exploration was conducted utilizing dynamic changes, derived from chaos domain features such as Correlation Dimension, Fractal Dimension, Lyapunov Exponent, and Trigonometric Plots. This analysis allowed for the identification of distinct patterns among various brain regions associated with neurological disorders, notably ADHD. The project aimed to diagnose and discern abnormalities based on the dynamic alterations observed in the mentioned chaos domain features.

Autism Diagnosis through Brain Signals: A Computational Approach Leveraging EEG Data

This project focuses on the development of a computational framework for the detection of autism spectrum disorder (ASD) based on the analysis of brain signals, particularly utilizing electroencephalogram (EEG) data. By leveraging advanced machine learning algorithms and signal processing techniques, the system aims to identify patterns and abnormalities in EEG signals associated with ASD. The objective is to create a reliable and non-invasive tool for early and accurate diagnosis of autism, offering potential benefits for timely intervention and personalized treatment strategies.

ADHD Diagnosis through Brain Signal Analysis

This project aims to develop an innovative computational framework for the diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) by analyzing brain signals, with a particular focus on electroencephalogram (EEG) data. Leveraging advanced machine learning algorithms and signal processing techniques, the system seeks to identify distinctive patterns and markers associated with ADHD in EEG signals. The ultimate goal is to create a robust and non-invasive tool for the accurate and early diagnosis of ADHD, facilitating improved understanding, intervention, and tailored treatment strategies for individuals affected by this neurodevelopmental disorder.

Estimation of Building Height Using Drone-Captured Data and Deep Learning

In this project, we accurately estimated building heights using data captured by our drones, leveraging the shadows cast by the structures. Employing the PyTorch library, we implemented an ensemble of Resnet networks to create a predictive model.

Automated Brain Tumor Detection and Segmentation Using Deep Learning

This project is designed for the automated detection and segmentation of brain tumors employing advanced imaging techniques and deep learning algorithms. Through artificial intelligence, the system identifies brain tumors in medical images, followed by precise segmentation to extract the tumor boundaries. This innovative approach provides healthcare professionals and researchers with a higher level of accuracy in identifying and studying tumors. Such precision can significantly contribute to early detection and improved treatment strategies for individuals affected by these medical conditions.

Evaluation of Patient's Appearance Based on Facial Expression Analysis

Chest X-Ray Abnormalities Detection

Designed and implemented a robust Chest X-Ray Abnormalities Detection system leveraging advanced deep learning techniques. The project involved extensive preprocessing of medical images, utilizing Convolutional Neural Networks (CNNs) for feature extraction, and training a model to accurately identify abnormalities in chest X-rays.