

Amir Hooshang Emamjomeh

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SUMMARY

AI researcher and developer with expertise in building predictive models and data-driven solutions using Python, TensorFlow, and C#. Proficient in machine learning, data analysis, and AI techniques, optimizing algorithms for behavior analysis and market forecasting.

TECHNICAL SKILLS

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| Programming Languages | C#, Python |
| Frameworks | .NET Core, ML.NET, TensorFlow, scikit-learn, pandas, Numpy |
| Tools | Visual Studio, Unity, MySQL, Rapidminer, LaTeX |

RESEARCH INTERESTS

Machine Learning

Deep Learning

Optimization

Artificial Intelligence in Finance, Healthcare, AR| VR (Virtual Reality)|MR|Extended reality

LANGUAGES

English (Upper Intermediate)

Farsi (Native fluency)

EDUCATION

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| Master of Computer Engineering <i>Major : Artificial Intelligence and Robotics</i> | September 2020 - January 2024 <i>Tehran, Iran</i> |
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- Islamic Azad University Central Tehran Branch
- Dissertation : Predicting stock prices using fuzzy system and neural network lstm, cnn
- Supervisors: Prof. Seyyed Hamid Ghafouri
- GPA: 18.1/20

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| Bachelor of Manufacturing & Production Technology Engineering <i>Major : Machine Tools</i> | September 2011 - February 2015 <i>Booin-Zahra, Iran</i> |
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- Islamic Azad University, Buin-Zahra

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| Associate of Manufacturing <i>Major : Machine Tools</i> | February 2002 - October 2005 <i>Tehran, Iran</i> |
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- Kerman Technical Institute

AI COURSES

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|---|-------------|
| Advanced Artificial Intelligence | 2021 - 2023 |
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- Explored fundamental AI concepts and methods for developing and implementing intelligent systems.

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| Advanced Data Mining | 2021 - 2023 |
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- Learned advanced data mining concepts, focusing on data processing and cleaning using RapidMiner and scikit-learn.

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| Algorithm Design | 2021 - 2023 |
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- Covered principles of algorithm design, including divide-and-conquer methods, sorting, and greedy algorithms.

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| Artificial Intelligence & Expert Systems | 2021 - 2023 |
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- Studied AI and expert systems theories, including intelligent searches and decision-making models.

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| Evolutionary Computing | 2021 - 2023 |
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- Studied evolutionary algorithms like Particle Swarm Optimization (PSO), Ant Colony Optimization, and Genetic Algorithms.

Machine Learning

2021 - 2023

- Learned supervised and unsupervised learning techniques, including linear and logistic regression, support vector machines, and decision trees.

Neural Network

2021 - 2023

- Gained an understanding of neural networks, including perceptrons and multi-layer perceptrons, and implemented a backpropagation network.

Fuzzy Set & Systems

2021 - 2023

- Studied fuzzy systems, including structure and fuzzification processes, with applications in game design.

THE SUMMARY OF MY THESIS

Stock price forecasting is critical in algorithmic trading and portfolio optimization, as it helps identify equities with high returns. This research explores deep learning models, specifically LSTM, CNN, and fuzzy networks, to predict stock prices and evaluate influencing factors. A hybrid model combines convolutional layers for feature extraction with LSTM layers for sequential data analysis, enhancing accuracy.

The study analyzes stock price data from June 3, 2020, to June 3, 2023, across multiple markets, incorporating data from two additional markets to test various conditions. Using root mean squared error (RMSE), the results demonstrate the hybrid model's superior performance in specific scenarios, showcasing its potential in financial market analysis and automated trading systems.

RESEARCH & PROJECTS

Predicting Stock Prices with AI Models (LSTM, CNN, Fuzzy Logic)

2023

- Developed a stock price prediction model using CNN, LSTM, and fuzzy logic to optimize trading strategies. Implemented the model with Python and TensorFlow, enabling analysis and forecasting of market trends to enhance AI-driven trading insights.

Havan

2023

- I developed an AI-driven trading system using Python, incorporating applied Machine Learning algorithms like CNN and LSTM. A fuzzy system grades and recommends optimal trading options, leveraging data analysis and reinforcement learning for better decision-making.
- Developed a Python-based prediction program utilizing CNN, LSTM, and a fuzzy grading system for trading. Enhanced version 2 with Particle Swarm Optimization (PSO), multi-threading, and integrated Web APIs for cryptocurrency trading.
- The system predicts stock prices, analyzes market trends, and supports automated portfolio management. Havan v2, currently in development, enhances trade outcomes by integrating deep learning, key technical indicators, and data infrastructure to improve strategy.

Dissertation on Stock Market Prediction

2022

- Analyzed data using machine learning models, including neural networks such as CNN and LSTM, to predict prices.
- Developed programs in Python using TensorFlow and scikit-fuzzy (skfuzzy).

Rapitun

2022

- A plugin for Meta-trader built using Python to buy or sell automatically.
- The plugin fetches action data from Shabnam.

Research on Human Activity Recognition

2021

- Analyzed data from human activity recognition using machine learning neural networks such as CNN, and LSTM to predict behavior.
- Rapidminer was shows 3D Model and Analyzed the data to find the best model .
- Assembled programs with Python using TensorFlow to simulate human behavior using artificial intelligence

Shabnam Mobile Manager

2020

- Developed 'Shabnam Mobile Manager' using Xamarin for iOS, integrating Shabnam with Web-API. This prototype streamlines stock trading, demonstrating expertise in cross-platform development, real-time data processing, and stock trading algorithms.
- Created a user-friendly iOS stock trading platform with Xamarin, integrating Web-API for real-time data. Demonstrated proficiency in cross-platform development, data processing, and algorithm design to streamline stock market participation.

Shabnam

2020

- Developed 'Shabnam', a C# Windows application for stock trading. Integrated MySQL, Web-API, and real-time data processing with algorithms and indicators, demonstrating expertise in data analysis, algorithm development, database management, and Web-API integration.
- Developed a C# stock trading application for Windows, utilizing MySQL, Web API, and real-time price graphs for market analysis and data visualization, highlighting proficiency in data processing, algorithm development, and computer science.

Social Media Manager

2020

- I developed AI-powered applications to manage Twitter and Instagram accounts using Twitter API and Instagram API with MySQL via .NET WebAPI. The apps automate tasks like following, commenting, and retweeting. Machine learning automates user engagement.
- These tools optimize social media interactions through information retrieval and data analysis. They leverage big data and deep learning to create intelligent systems for real-time engagement. This project demonstrates my proficiency in computer science and entrepreneurial skills.

KEY ACHIEVEMENTS

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| Ranked 4th among graduates in the first semester of the 2023-2024 academic year | 2024 |
| best commercial student game, National Computer Game Developer Students | 2013 |
| best adventure game, Tehran Digital Festival | 2011 |
| Outstanding Researcher Award at Islamic Azad University of Buin-Zahra | 2013 |
| Official judge for Iranian Independent Game Developers and National Tax Culture Festival | |

MEMBERSHIPS

Iran Video Games Festival Academy
Iran Computer and Video Games Foundation
Official judge for Iranian Independent Game Developers
Official judge for Hobby and Game Design Dept. in Iran