Hanif **Kia**

Data Scientist · Machine Learning Engineer · AI Research & Development Focus

Tehran, Iran

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Summary

Data Scientist and ML Engineer with extensive experience in AI research, **Time-Series** Forecasting, **Imbalanced Learning** and **Anomaly Detection**. Expertise in **Deep Learning**, **Predictive Models**, Statistics, **LLMs** and large-scale data processing, with a strong background in biomedical and telecom applications.

Skills

Programming	Python, R, Matlab, Object Oriented Programming (OOP)
Python Packages	NumPy, Pandas, Dask, Polars, SciPy, Statsmodels, GluonTS, tslearn, OpenCV, NetworkX
Machine Learning Libraries	Sklearn, XGBoost, imblearn, Shap, LightGBM, Gensim, Spectral
Deep Learning Frameworks	Tensorflow, keras, Pytorch
Visualisation Tools	Seaborn, plotly, matplotlib, Tableau, Kibana, streamlit
Database	SQL, mongoDB, PostgreSQL, OracleDB, Elasticsearch, Clickhouse, HDFS, Redis
Tools	Linux, Git, Docker, Spark, GCP, AWS, MLFlow, Flask, FastAPI
Languages	Persian (native), English (upper-intermediate)

Work Experience

Senior Data Scientist and ML Engineer

Dec. 2024 - Present

TrendPlus AB - remote — *Stockholm, Sweden*

- Designed and implemented a **route demand forecasting** system for **logistics** using MSTL, SARIMA, and Prophet, enabling proactive route optimization; developed a **customer-facing dashboard** for real-time visualization and **decision support**.
- Architected and developed the core backend for an action-based logistics **chatbot** using **FastAPI**, enabling real-time interaction and transport automation for end users.
- Implemented **prompt-based** service detection using **Granite language models** and **LangChain**, accurately mapping user intents to backend functions for dynamic scheduling and support workflows.
- Built **Retrieval-Augmented Generation (RAG)** pipelines integrating LLaMA, ChatGPT and DeepSeek models to deliver context-aware, high-accuracy responses for transport inquiries and incident resolution.

Machine Learning Instructor

July. 2024 - Present

Faraapply Academy (Remote) — *Tehran, Iran*

- Instructed students in the fundamentals of AI, Machine Learning, Statistics, Python Programming and Deep Learning Frameworks.

Senior Data Scientist

Mar. 2024 - Dec 2024

MyCom OSI (Remote) — *Paris, France*

- Long-term **time series forecasting** for anomaly detection in mobile networks using Facebook **Prophet**, **MSTL** and **DeepAR** model.
- Optimized the **preprocessing pipeline** for a time series forecasting model by implementing an efficient multiprocessing approach, **reducing inference time** by nearly 80% (from 2 hours to 25 minutes).
- Design and Implement an Alarms Correlation Discovery system for Telecommunications Network using **Graph Analysis** and simplified **FP-Growth** algorithm.

Data Scientist

Sep. 2023 - Mar. 2024

Elisa Polystar (Remote) — *Helsinkey, Finland*

- **Anomaly detection** for malicious Global Titles (GTs) in SS7 networks using ensemble models and **Shaply Analysis** (PoC).
- Implemented a time series preprocessing pipeline for **mobile network anomaly detection** using Hadoop and PySpark.

Data Scientist & ML Researcher

May. 2020 - Jun. 2023

Clarity Global. — *Tehran, Iran*

- Developed a **Deep CNN Attention-based network** and multitask learning approach to detect **mobile network** Site-Down and Cell-Down **faults** with a 97% f1-score.
- Implemented a **two-stage mobile network fault detection** system that achieves 68% and 72% f1-score using **XGBoost** and **Deep Embedding Clustering** method respectively.
- Natural Language Processing: Created an **OSS Alarm Management Chatbot**. Leveraging **BERT** Embedding and Spacy NER models for intent detection and slot filling respectively.

Researcher & Deep Learning Specialist

Aug. 2021 - Feb. 2022

Hooshyar Communication Research Group — *Tehran, Iran*

- Designed and implemented a **telecommunication signal protocol detection** system using **deep learning** and **signal processing** techniques, enhancing classification accuracy and robustness.
- Fine-tuned a deep **segmentation** model based on **Resnet50** to classify signal protocols.
- Achieved 93% global accuracy, 81% Boundary F1-Score, and 87% Weighted IoU.
- Designed a GUI for **real-time monitoring** of signals received by both USRP and SDR.

Research Assistant

Oct. 2019 - Sep. 2021

K. N. Toosi University of Technology - Speech Recognition Lab (Prof. Mansour Vali) — *Tehran, Iran*

- Conducted research on **Breast Cancer** Detection using an **imbalanced data** and explored various ML methods as part of a comprehensive comparative study.
- Undertook research on the analysis of **sequential patient data** to predict short-term mortality using Deep Learning approaches, including CNN, LSTM, and Transformer models.
- Clinical data cleaning and investigating preprocessing methods for imbalanced learning such as **outlier** handling and **resampling** methods.
- Researched ensemble models such as **bagging & boosting** to predict minority class more efficiently.

Education

MSc Biomedical Engineering

Tehran, Iran

K. N. Toosi University of Technology (KNTU) — *Sep. 2018 - Feb. 2021*

- Advisor: Dr. Mansour Vali
- Thesis: Identify Heart Failure Severity Using Data Mining Techniques.
- Areas of Expertise: Deep Learning, Pattern Recognition, Imbalanced Learning, Biomedical Datasets, Outlier Analysis, Image Processing, Electrocardiogram (ECG), Cardiovascular Disease

MEng Communication Networks

Tehran, Iran

Islamic Azad University, Science And Research Branch — *Sep. 2016 - Mar. 2017*

- Areas of Expertise: Computer Networks, LTE, Convex Optimization

BA Electrical, Control Engineering

Qazvin, Iran

Qazvin International Azad University (QIAU) — *Sep. 2011 - Jun. 2016*

- Advisor: Dr. Ahmad Fakharian
- Thesis: Optimizing PID Parameters of Heat Exchanger Controller using Fuzzy Logic.
- Areas of Expertise: Linear Algebra, Signal Processing, Control and Optimization, Instrumentation, MATLAB & Simulink, PLC Programming

Related Projects

Babies Sleep Scheduler

TrendPlus AB

Core Member — *Aug. 2024*

- Designing a Multitask Learning approach to predict the sleep schedules of babies, leveraging the data gathered by a logger application.
- methods: Attention-based LSTM, Imbalanced Learning

Diagnosis of Alzheimer's Disease from MRI Images

Amirkabir University of Technology

Member — *Feb. 2023*

- Techniques: Ricci Flow and Graph Analysis
- methods: GNN, GCN, GAT

Segmentation of Lung Lobes in CT-Scan Images for Fibrosis Patients

K.N.Toosi University of Technology

Member — *Mar. 2019*

- Advisor: Dr. Hamid Abrishami moghaddam
- Methods: ResNet, DenseNet, U-Net

Publications & Conferences

Published

- **Hanif Kia**, Mansour Vali, Hadi Sabahi. 2023. Enhancing Mortality Prediction in Heart Failure Patients: Exploring Preprocessing Methods for Imbalanced Clinical Datasets. 8th International Iranian Conference on Biomedical Engineering (ICBME 2023), doi:10.1109/ICBME61513.2023.10488667.
- Mahsa Bahrami, Mansour Vali, **Hanif Kia**. 2023. Breast Cancer Detection from Imbalanced Clinical Data: A Comparative Study of Sampling Methods. 8th International Iranian Conference on Biomedical Engineering (ICBME 2023), doi:10.1109/ICBME61513.2023.10488624.
- Raziyeh Mosayebi, **Hanif Kia**, Aseman Kianpour. A Supervised Embedding and Clustering Anomaly Detection method for classification of Mobile Network Faults, arxiv, doi:doi.org/10.48550/arXiv.2310.06779