

# Pouria Nazemi

## PERSONAL DATA

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## SUMMARY

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Results-driven AI/ML engineer with strong hands-on experience in building production-ready machine learning systems across diverse domains, including network monitoring, medical signal processing, and document intelligence. With a passion for translating cutting-edge research into real-world solutions, and demonstrated success in delivering end-to-end AI solutions – from problem definition and data preparation to model deployment and performance optimization. Seeking to contribute to innovative, high-impact AI projects within research-driven or product-focused environments.

## TECHNICAL SKILLS

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**Programming Languages:** Python, Bash, Java, C

**Core Machine Learning:** Scikit-learn, Feature Engineering, Time-Series Forecasting, Signal Processing, Model Evaluation

**Deep Learning Frameworks:** TensorFlow, PyTorch, Keras, Transformers, Hugging Face

**Natural Language Processing:** LLMs, Prompt Engineering, Text Classification, RAG, NLTK, Hazm, LangChain

**Computer Vision:** CNNs, Image Classification, OCR, OpenCV

**Data Analysis and Visualization:** Pandas, NumPy, Matplotlib, Seaborn, Plotly, SciPy

**MLOps and Deployment:** Docker, Git, Flask, Linux, Prometheus, Grafana, OpenSearch, Elasticsearch, Kibana, FAISS, ChromaDB

## EXPERIENCE

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### Monitoring Solutions Developer, SRE (Full-Time)

Jul 2023 – Present

*Part Software Group*

*Mashhad, IR*

- Contributed to an intelligent NOC system leveraging LLMs to simulate engineer workflows, providing automated fix suggestions, incident detection, and historical analysis reports, enhancing operational efficiency.
- Mentored and instructed students for the Cangrow Data Science course, teaching machine learning fundamentals and guiding final student projects integrating classical ML and LLMs.
- Technical lead for anomaly detection team analyzing NetFlow data: designed and supervised implementation of scalable algorithms for identifying network anomalies.
- Developed and maintained monitoring infrastructure and automation tools to support system reliability and observability.

### Data Scientist (Internship)

Jun 2023 – Oct 2023

*Neurosina Company*

*Mashhad, IR*

- Designed and implemented a real-time seizure detection pipeline using multimodal biosignals from wearable devices, improving detection accuracy while reducing false alarms.
- Applied neural networks and signal processing techniques on large-scale biosignal datasets.
- Engineered data transformation pipelines to address confounding factors from physical activity.

### Data Scientist (Part-Time)

Jun 2022 - Mar 2023

*Pelekan Company*

*Mashhad, IR*

- Collaborated on a project to optimize warehouse operations for a book distribution company.
- Analyzed invoice data and performed feature engineering to prepare inputs for predictive modeling.
- Applied clustering, regression, and time-series forecasting to predict book sales and inform warehouse space utilization strategies.
- Designed an end-to-end pipeline to classify products and forecast sales based on book names.

## PROJECTS

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### Persian Document Classification

Under supervision of [Dr. Pourreza](#)

OCR, NLP, LLMs, Transformers, Hugging Face

- Developed a pipeline to classify images of documents based on text classification of OCR results
- Analyzed open-source OCR models and fine-tuning Bert model on Persian dataset
- Analyzed the impact of OCR errors on classification accuracy and developed preprocessing improvements
- Achieved accuracy of 97.8% on clean text and 80.3% on fully artificial defected text

### Seizure Detection

[Draft Article](#)

Signal Processing, Time-Series Analysis, Machine Learning, High-Volume Data

- Developed an automatic epileptic seizure detection system using multimodal biosignals (3D accelerometry, blood volume pulse, electrodermal activity, and temperature) recorded from the Empatica E4 wearable device.
- Engineered statistical and time-series features from physiological signals and trained different classifiers using a leave-one-seizure-out approach.
- Achieved a final performance of 74% sensitivity and a False Alarm Rate (FAR) of  $35.8 d^{-1}$  on a publicly available dataset from 6 patients
- This performance is comparable to previous methods and significantly outperforms a random classifier (50% sensitivity,  $144 d^{-1}$  FAR).
- Implemented a pipeline covering data acquisition, exploratory analysis, heuristic seizure onset annotation, training data selection, feature extraction, and classifier training and testing.
- Designed and optimized a post-processing algorithm to refine classifier outputs, leveraging a moving window and thresholding for final seizure classification.

### PDF Question-Answering System Using LLMs (RAG)

[Repo](#)

RAG, LLMs, Prompt Engineering, Langchain, FAISS, ChromaDB

- Developed a RAG system with Falcon-7B (self-hosted) for context-aware question answering.
- Implemented document ingestion from PDFs, text chunking, and embedding generation using SentenceTransformers with ChromaDB + FAISS backend.
- Integrated LangChain for end-to-end retrieval and QA chaining, enabling contextual answering over custom document sets.

### Digit Classification

[Repo](#)

CNN, Tensorflow, Pytorch, Implementing Loss Function, Data Generation

- Built and benchmarked digit classifiers using CNNs, SVMs, and Random Forests, achieving high accuracy through custom loss functions and regularization.
- Performed feature engineering, hyperparameter tuning, and applied regularization and custom loss functions for model optimization.
- Tuned and optimized diverse model architectures to enhance digit classification performance.

### Article Search Recommend System

[Repo](#)

NLP, Information Retrieval, ELK

- Built a Flask-based search and recommendation system for blockchain papers using Elasticsearch, TF-IDF, and cosine similarity.
- Integrated Kibana for real-time data visualization and interactive dashboards to support document exploration and insights.

More projects are available on my GitHub: [github.com/pouria-nazemi](https://github.com/pouria-nazemi)

## EDUCATION

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### Ferdowsi University

B.S. in Computer Science with Specialization in Artificial Intelligence

Mashhad, IR

Sep 2020 – Aug 2025

- GPA: 95% - Ranked 3rd
- TA of Linear Algebra, Fundamentals of AI for 2 years

## CERTIFICATIONS AND AWARDS

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- **Neural Networks and Deep Learning** Issuer: DeepLearning.AI ([Certificate](#))
- **Network Training Course Based on CCNA** Issuer: Part College ([Certificate](#))
- **Datadays Anomaly Detection Challenge - Rank 10/80** Conductor: Sharif University ([Repo](#))