

# OMID NAE EJ NEJAD

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## PROFESSIONAL SUMMARY

Final-year Computer Science student at the University of Tehran (GPA 3.65/4.0) with hands-on experience building deep learning systems across computer vision, NLP, generative AI, and reinforcement learning. Contributed to RAG-based chatbot systems and AI-for-finance pipelines in a university applied AI lab, and delivered BI dashboards in a commercial setting. Won 1st Place at a national AI Hackathon for FMCG forecasting. Strong foundation in PyTorch, Transformers, and LangChain; passionate about engineering production-ready AI systems.

## TECHNICAL SKILLS

**AI / ML:** PyTorch · Transformers · TensorFlow · LangChain · NLTK · Deep Learning · CNNs · GANs · RL · NLP · RAG · LLMs · Computer Vision · Speech Processing

**Data Science:** Pandas · NumPy · Matplotlib · Seaborn · Scikit-Learn · Jupyter · Data Mining · Feature Engineering · Statistical Modeling

**Programming:** Python (primary) · C++ · C · Java · Assembly

**Databases:** MySQL · Relational Data Modeling · NoSQL · Data Warehousing

**Engineering:** Git / GitHub · Docker (basic) · LaTeX · Excel

**Foundations:** Linear Algebra · Probability & Statistics · Optimization · Algorithms & Data Structures

## EDUCATION

**University of Tehran — B.Sc. in Computer Science**

Sep 2022 – Jul 2026 (Expected)

GPA: 17.88 / 20.00 (≈ 3.65 / 4.0) · Focus: Artificial Intelligence, Deep Learning, Computer Vision, Information Retrieval

## WORK EXPERIENCE

**AI Researcher & Developer**

Nov 2024 – Oct 2025

Applied AI Lab, University of Tehran

- Engineered and evaluated RAG-based chatbot systems leveraging LangChain and LLM APIs, improving retrieval precision for domain-specific Q&A.
- Developed AI-driven analytics pipelines for Finance use-cases, applying NLP and supervised learning to extract insights from structured and unstructured data.
- Contributed to Digital Transformation research projects, prototyping AI modules integrated into existing business workflows.

**AI / BI Engineer (Part-Time)**

May 2025 – Nov 2025

Strategy & Development Dept. · Pardis Sanat Siyare Sabz (GREEN), Tehran

- Designed and deployed interactive Business Intelligence dashboards to surface KPIs and support strategic decision-making for C-level stakeholders.
- Investigated and documented modern data management pipelines, evaluating ETL tooling and data warehousing options for enterprise adoption.
- Collaborated cross-functionally with domain experts to translate business requirements into actionable data products.

**AI Product Development Bootcamp**

Jan 2026

ZAI Bootcamp · Azadi Innovation Factory, Tehran

- Completed intensive programme on AI product development, MVP design, and business-AI integration, working alongside domain expert mentors on applied problem-solving.

## RESEARCH EXPERIENCE

**Vision Researcher — Semantic Scene Understanding Survey**

Oct 2025 – Feb 2026

Computer Vision Lab, University of Tehran

- Co-authoring a survey on object-centric Vision Transformer (ViT) architectures for semantic scene understanding, synthesising state-of-the-art methods in object detection, segmentation, and scene graphs.

## KEY PROJECTS

## Group Activity Recognition for Sports Video Analysis

Jun 2026

Bachelor Thesis · Tools: PyTorch · TimeSformer · Spatio-Temporal Modeling

- Designed and trained a spatio-temporal deep learning system using TimeSformer to recognise multi-person group activities in sports video, addressing occlusion and temporal context challenges.

## Attribute-Conditioned Cartoon Face Generation (GAN + RL)

Dec 2025

Tools: PyTorch · GAN · Reinforcement Learning

- Built a generative pipeline combining conditional GANs with a diversity-aware RL reward signal to produce attribute-controlled cartoon faces with high visual variety, reducing mode collapse.

## Mini GPT — Trained on Friends Dialogue Dataset

Jun 2025

Tools: PyTorch · Transformers · Custom Tokenizer

- Implemented a GPT-style decoder-only Transformer from scratch, trained on the Friends TV-show dialogue corpus; demonstrated fluent conversational text generation.

## Anomaly Detection for Medical Images (Heterogeneous-AE)

Aug 2025

Tools: PyTorch · Torchvision · Autoencoder Architectures

- Developed a heterogeneous autoencoder-based anomaly detection model for medical imaging; collaborated in a team setting with code review and joint evaluation protocols.

## Image Captioning — Encoder-Decoder + Attention

May 2025

Tools: PyTorch · ResNet-101 · LSTM · Attention

- Engineered an image captioning model using a ResNet-101 encoder and LSTM decoder with soft-attention, achieving coherent natural language descriptions of visual scenes.

## Speech Emotion Recognition (Mel Spectrograms & HuBERT)

Aug 2025

Tools: PyTorch · HuBERT · ResNet-101 · LSTM

- Built a multi-modal speech emotion classifier fusing Mel Spectrogram CNN features with HuBERT self-supervised embeddings; evaluated on standard emotion corpora.

## Medical Question Summarisation via Round-Trip Translation

Jul 2024

Tools: PyTorch · Transformers · NLTK · Scikit-Learn

- Implemented a data augmentation pipeline using round-trip neural machine translation to improve summarisation quality on a low-resource medical Q&A dataset; evaluated with ROUGE metrics.

## CNN Architectures & Siamese Networks (Classification & Face Recognition)

Mar 2025

Tools: PyTorch · EfficientNet-B0 · Siamese

- Reproduced and benchmarked modern CNN architectures for image classification; built a Siamese network for one-shot face verification using contrastive loss.

## HONORS & COMPETITIONS

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### 1st Place — Hackathon Pol

June 2026

Iran AI Factory · Azadi Innovation Factory

- Led team to victory in a national AI hackathon by building a data-driven forecasting solution for FMCG sell-in data, outperforming all competing teams across machine learning, product design, and business presentation dimensions.

## TEACHING & LEADERSHIP

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### Chief Teaching Assistant (3 courses)

Feb 2025 – Feb 2026

University of Tehran · Advanced Information Retrieval · Bio-Computing · Data Structures & Algorithms

- Managed a multi-person TA team, owned curriculum for assignments, and led project design for courses covering search algorithms, metaheuristics, and data structures.

### Teaching Assistant (6 courses)

Sep 2024 – Feb 2026

University of Tehran · Data Mining · Basic & Advanced Programming · Operating Systems · Compilers

- Designed, graded, and provided academic support across 6 CS courses spanning programming, systems, and data-intensive topics.

### **AI Instructor (Volunteer)**

*Dec 2025 – Jan 2026*

*Institute for Research in Fundamental Sciences (IFS)*

- Co-taught extracurricular AI courses at secondary schools, covering Foundations of AI and Prompt Engineering; co-designed lesson plans and managed classroom delivery.

### **RELEVANT GRADUATE & ADVANCED COURSEWORK**

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Deep Learning with Applications (Grad) 16.75/20	Artificial Intelligence 20/20
Machine Vision (Graduate) 14.5/20	Advanced Information Retrieval 20/20
Data Mining 20/20	Bio-Computing 19.05/20
Non-Linear Programming 17.3/20	Probability 17.6/20
Design & Analysis of Algorithms 20/20	Operating Systems 20/20

### **CERTIFICATIONS**

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- Retrieval Augmented Generation (RAG) with LangChain — DataCamp, 2025
- Deep Reinforcement Learning in Python — DataCamp, 2025
- Reinforcement Learning with Gymnasium — DataCamp, 2025

### **LANGUAGES**

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**Persian** (Native) · **English** (Proficient — TOEFL iBT 89) · **Italian** (Beginner)