Zahra Ahmadi

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About Me

I hold a Bachelor's degree in **Computer Engineering** and am currently pursuing an MSc in **Artificial Intelligence** at the University of Amsterdam. My academic and research background combines strong foundations in **mathematics**, **algorithms**, and **software engineering** with advanced knowledge of **machine learning** and **deep learning**. My research interests include **Large Language Models** (**LLMs**), **Vision-Language Models** (**VLMs**), **Explainable Interpretable AI**, and **AI Safety Security**. I am proficient in **Python** and have hands-on experience developing and evaluating AI systems through research projects and practical applications. Passionate about advancing trustworthy and human-centered AI, I seek opportunities to contribute to cutting-edge research and real-world intelligent systems.

EDUCATION

University of Amsterdam — **Amsterdam, The Netherlands**
Master in Artificial Intelligence — *Sep 2025*

University of Guilan — **Rasht, Iran**
B.Sc in Computer Engineering — *Sep 2019 - Aug 2023*

- **GPA:** 17.95/20

KEY SKILLS

Programming Languages	Python, C++, Java
Machine Learning Frameworks:	PyTorch, TensorFlow, Keras, Hugging face, LangChain, OpenAI API
Data Visualization	Numpy, Pandas, Matplotlib, Seaborn, Power BI, EDA
Database Management	SQL
Technical	LLMs, RAG
Extra Tools	Git, Docker, AWS, Metabase, Linux

EXPERIENCE

Data Analyst — **Tehran, Iran**
Anhar Company — *March 2025 - September 2025*

Developed AI protocols for project control using LLM and RAG, integrating these solutions with databases. Designed interactive dashboards to enhance project monitoring and decision-making. The goal was to optimize project management through AI-driven automation and data visualization.

Undergraduate Research Assistant — **Rasht, Iran**
University of Guilan — *Jan 2023 - September 2025*

Research on sperm abnormality detection. Using meta-learning and transformer models, and recently, incorporating active learning and contrastive learning techniques.

PROJECTS (*Extra Projects on GitHub*)

Collapsed Language Models Promote Fairness — *GitHub* Pytorch/Python

- Conducted a reproducibility study of the ICLR 2025 paper Collapsed Language Models Promote Fairness, evaluating Uniform **Neural Collapse** (**U-NC3**) as a fairness indicator in encoder-only language models.
- Built a unified experimental pipeline, adapted Neural Collapse metrics for **BERT-based masked language models**, and verified hyperparameter settings to ensure faithful replication and fairness analysis.

OCR App — *GitHub* FastAPI/Python/Docker

- Developed a **Dockerized OCR** web application that extracts text from uploaded images using an image-to-text processing pipeline.
- Built and integrated **FastAPI** backend services with a web interface, exposing OCR functionality through a **RESTful API**.

Universal Dependencies LinguisticStudy — *GitHub* PyTorch/Hugginface

- Investigated partial layer freezing in **DistilBERT** fine-tuning for PoS tagging using the UD dataset.
- Focused on model performance and training efficiency in multilingual linguistic analysis.

FigMERU: Figurative Language Understanding in Vision-Language Models PyTorch/Transformers

- Investigated figurative language understanding in **Vision-Language Models** by modeling image–text relationships as hierarchical visual-semantic structures.
- Fine-tuned a hyperbolic representation learning model on the IRFL benchmark, improving generalization to unseen figurative concepts such as metaphors.

Analyzing Human Metaphase II Oocyte Images — *GitHub* PyTorch

- This project showcases a robust deep learning-based **multi-class semantic segmentation** method designed for human metaphase II oocyte image analysis.

RESEARCH PAPERS

Sparse-Attention Transformers for Efficient Whole-Slide Image Classification **Submitted to NeurIPS 2026**
Supervisor: Erik Bekkers

- Investigated data-efficient and scalable transformer architectures for Whole-Slide Image classification using sparse attention mechanisms.
- Benchmarked state-of-the-art sparse-attention Vision Transformers against Multiple Instance Learning methods for computational pathology applications.

CERTIFICATIONS

- **Build Basic Generative Adversarial Networks (GANs)** | Coursera, DeepLearning.AI | certificate **2023**
- **Deep Learning Specialization** | Coursera, by Andrew Ng | certificate **2023**
- **Machine Learning** | Coursera, by Andrew Ng | certificate **2022**
- **Convolutional Neural Networks in TensorFlow** | Coursera, by Laurence Moroney | certificate **2022**
- **Introduction to Data Science in Python** | Coursera, by University of Michigan | certificate **2021**
- **Divide and Conquer, Sorting and Searching, and Randomized Algorithms** | Coursera, by Stanford University **2021** | certificate
- **Graph Search, Shortest Paths, and Data Structures** | Coursera, by Stanford University | certificate **2021**

LANGUAGES

English - Fluent (IELTS Score: Overall 7), **Persian** - Native