Omid Naeej Nejad

omid-naeej-nejad | omidnaeej | omidnaeejnejad@gmail.com | omidnaeej.github.io | Tehran, Iran

Education

- **B.Sc. in Computer Science** — *Sep 2022 – Present*
  University of Tehran — Tehran, Iran
  - GPA: 17.88/20.00 (3.645/4.00)
  - Focus areas: AI, DL, CV, IR

Research Interests

- Explainable & Unified Multimodal AI (text, image, audio, video)
- Intelligent Multi Agent Systems & Autonomous Decision Making
- Vision Language Models & Object-Centric Scene Understanding
- LLMs as high level decision makers (AVs, robotics, automated systems)

Research Experience

- **Vision Researcher (Writing a Survey about Semantic Scene Understanding)** — *Oct 2025 – Feb 2026*
  Computer Vision Lab, University of Tehran
  Coauthoring an object centric ViT based scene understanding survey (in preparation).
- **AI Researcher & Developer** — *Nov 2024 - Oct 2025*
  Applied AI Lab, University of Tehran
  Contributed to projects in AI for Finance, Digital Transformation, and RAG based chatbot systems.

Work Experience

- **AI/BI Engineer (Part-Time)** — *May 2025 - Nov 2025*
  Strategy & Development Department, GREEN (Pardis Sanat Siyare Sabz Company) — Tehran, Iran
  - Investigated modern data management pipelines and designed business intelligence dashboards.
- **ZAI Bootcamp Participant** — *Jan 2026*
  Azadi Innovation Factory — Tehran, Iran
  - Gained hands-on experience in business-AI cross-product principles by collaborating with domain expert mentors, focusing on AI product development, MVP creation, and strategic problem-solving.

Teaching Experience

- **Chief Teaching Assistant** — *Feb 2025 - Feb 2026*
  Managing the TA team, overseeing the development of assignments, and contributing to project design. — University of Tehran
  - Courses: Advanced Information Retrieval, Bio-Computing, Data Structures & Algorithms
- **Teaching Assistant** — *Sep 2024 - Feb 2026*
  Designed and graded assignments, quizzes, and supported students throughout their studies. — University of Tehran
  - Courses: Data Mining, Basic Programming (twice), Advanced Programming, Operating Systems, Compilers

Projects

- **Group Activity Recognition for Sports Video Analysis** — ***Bachelor Thesis*** *- Jun 2026*
  Tools: PyTorch, TimeSformer, Spatio-Temporal Modeling — Link to GitHub
- **Attribute-conditioned Cartoon Face Generation with GAN + diversity aware RL** — *Dec 2025*
  Tools: Pytorch, Generative Adversarial Network, Reinforcement Learning — Link to GitHub
- **Mini GPT (Trained on Friends Dialogue Dataset)** — *Jun 2025*
  Tools: Pytorch, Transformers — Link to GitHub
- **Modern CNN Architectures & Siamese Networks (Classification and Face Recognition)** — *Mar 2025*
  Tools: Pytorch, EfficientNetB0 — Link to GitHub
- **Anomaly Detection for Medical Images Using Heterogeneous-AE (Collaborated in a team)** — *Aug 2025*
  Tools: Pytorch, Torchvision — Link to GitHub
- **Image Captioning with Encoder–Decoder + Attention** — *May 2025*
  Tools: Pytorch, ResNet101, LSTM — Link to GitHub
- **Medical Question Summarization by Round Trip Translation** — *Jul 2024*
  Tools: Pytorch, Transformers, NLTK, Scikit-Learn, Googletrans, Scipy — Link to GitHub
- **Speech Emotion Recognition by Mel Spectrograms & HuBERT Embeddings** — *Aug 2025*
  Tools: Pytorch, ResNet101, LSTM — Link to GitHub
- **Artificial Intelligence Course Assignments** — *Oct 2025 - Dec 2025*
  Tools: Python, LaTeX, NumPy — Link to GitHub
- **Data Mining Course Assignments** — *Feb 2025 - Apr 2025*
  Tools: Python, Jupyter Notebook, Scikit-Learn, Pandas, Numpy, Matplotlib, LaTeX — Link to GitHub

- **Information Retrieval Course Assignments** *Oct 2024 - Feb 2025*
  Tools: Python, Jupyter Notebook, NLTK, Scikit-Learn, Scipy, Seaborn, Matplotlib Link to GitHub
- **Metaheuristic Algorithms for NP-Hard Problems (Bio-Computing Course Assignments)** *Feb 2024 - Apr 2024*
  Tools: Python, Jupyter Notebook, Pandas, Numpy, Matplotlib Link to GitHub
- **C Simplified Compiler** *Apr 2025 - Jun 2025*
  Tools: Java, ANTLR4 Link to GitHub
- **Assembly SQL Parser (Machine Language and Assembly Course Project)** *Jul 2025*
  Tools: Assembly Link to GitHub
- **Morris Mano Basic Computer in Logisim (Principles of Computer Systems Course Project)** *Jul 2024*
  Tools: [Logisim] Link to GitHub

Skills

- **Programming:** Python, C++, C, Java, Assembly
- **Data Science, ML & AI:** PyTorch, Transformers, LangChain, TensorFlow, Scikit-Learn, NLTK, Pandas, Matplotlib
- **Databases:** MySQL, relational data modeling, No-SQL, Data Warehouses
- **Tools:** Git/GitHub, Docker (basic), LaTeX, Excel
- **Other:** Solid mathematical foundations in linear algebra, probability, optimization

Honors & Competitions

- **1st Place — Hackathon Pol 1st** *June 2026*
  Iran AI Factory, Azadi Innovation Factory LinkedIn Post
  Collaborated in a team to develop a data-driven solution for analyzing and forecasting FMCG sell-in data.

Relevant Coursework

- Deep Learning with Applications - Graduate Course (16.75/20)
- Machine Vision - Graduate Course (14.5 / 20)
- Advanced Information Retrieval (20/20)
- Data Mining (20/20)
- Artificial Intelligence (20/20)
- Bio-Computing (19.05/20)
- Non-Linear Programming (17.3/20)
- Design and Analysis of Algorithms (20/20)
- Data Structures and Algorithms (20/20)
- Advanced Programming (17.75/20)
- Basic Programming (20/20)
- Linear Algebra (17/20)
- Probability (17.6/20)
- Principles of Computer Systems (20/20)
- Operating Systems (20/20)

Presentations

- **Hierarchical Reinforcement Learning** *Dec 2025*
  Artificial Intelligence Course, University of Tehran Link to Slide
  ◦ Presented the motivation, structure, and key algorithms of hierarchical reinforcement learning, including temporal abstraction, options framework, and benefits over flat RL.
- **Web Crawlers and Indexing Pipelines** *Dec 2024*
  Advanced Information Retrieval Course, University of Tehran Link to Slide
  ◦ Explained the architecture and functioning of web crawlers, indexing pipelines, and critical challenges related to large scale web data processing.
- **PCA Theory and Application in Face Recognition** *Dec 2023*
  Linear Algebra Course, University of Tehran Link to Slide
  ◦ Presented the theoretical foundations of Principal Component Analysis and demonstrated its use in face recognition through eigenfaces, dimensionality reduction, and feature extraction.

Volunteer Activities

- **AI Instructor – Teaching Team Member** *Dec 2025 – Jan 2026 (Biweekly)*
  Institute for Research in Fundamental Sciences (IFS)
  ◦ Co-taught AI-focused extracurricular courses in secondary schools, covering Foundations of AI and Prompt Engineering while coordinating lesson design and class management with a co-instructor.
- **Seminar Planning Team Member | CS Talks** *Dec 2023 - Jul 2024*
  University of Tehran
  ◦ Organized academic seminars, designed promotional content, and improved student engagement.

Selected Online Certificates

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

Languages

Persian: Native
English: Proficient (TOEFL iBT 89, Reading 25, Listening 21, Speaking 19, Writing 24, December 2025)
Italian: Begineer