ALI NIKKHAH

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RESEARCH INTERESTS

Agentic AI Systems & Multi-Agent Architectures
Retrieval-Augmented Generation (RAG) & Knowledge-Oriented LLMs
Multi-Modal Learning & Vision–Language Models
Reinforcement Learning & Autonomous Reasoning Agents

EDUCATION

Sharif University of Technology *Sept 2020 – Jul 2024*
B.Sc. Electrical Engineering — Digital Systems
Overall GPA 3.65 Major GPA 3.91*

Iranian University Entrance Exam (Konkoor) *Aug 2020*
Ranked **14th** nationwide (Maths & Physics)

TECHNICAL SKILLS

Languages	Python, TypeScript, C++, SQL, Bash
Deep Learning	PyTorch, TensorFlow, HuggingFace, JAX, LangChain, LlamaIndex
RAG & Agents	FAISS, ChromaDB, Pinecone, CrewAI, LangGraph, AutoGen
MLOps	Docker, Kubernetes, MLflow, Airflow, Terraform, FastAPI, Triton
Vision & Audio	OpenCV, BLIP, ViT, Whisper, wav2vec2, librosa, ESPnet
Monitoring	Weights & Biases, Prometheus, Grafana, ELK Stack

SELECTED CERTIFICATIONS & ONLINE COURSEWORK

- Introduction to Machine Learning in Production — DeepLearning.ai
- Building Systems with the ChatGPT API — OpenAI
- ChatGPT Prompt Engineering for Developers — OpenAI
- Diffusion Models — DeepLearning.ai
- Project-Oriented Course in Web Development with PHP

INDUSTRY EXPERIENCE

Digital Turquoise Aug 2025 – Nov 2025
Senior Data Scientist *Tehran, Iran*

· Designed and deployed large-scale predictive analytics and recommendation systems integrating structured and multimodal data.
· Optimized inference pipelines and ensured model governance, improving reliability and compliance in data-driven operations.

Digikala Nov 2024 – Aug 2025
AI Engineer → R&D Lead *Tehran, Iran*

- Led the development of Modular Control Pipelines (MCP) and Retrieval-Augmented Generation (RAG) frameworks for enterprise-scale automation.
- Designed and deployed Agentic RAG systems coordinating retrieval, reasoning, and response generation across evolving knowledge sources.
- Built multi-agent orchestration frameworks integrating specialized reasoning agents for adaptive decision-making.
- Architected hybrid retrieval pipelines with FAISS and keyword search, boosting precision and recall.
- Improved latency, reliability, and cost-efficiency through caching, synchronization, and continuous evaluation feedback loops.

HomaCloud May 2021 – Feb 2022
MLOps Engineer *Tehran, Iran*

- Built scalable MLOps pipelines for distributed model training and deployment across Dockerized and Kubernetes-based clusters.
- Automated CI/CD workflows integrating MLflow, Terraform, and GitHub Actions for seamless retraining and deployment.
- Developed high-performance model-serving APIs with FastAPI and TensorFlow Serving achieving low-latency inference at scale.

Mapna-MD2 Nov 2020 – May 2021
Full Stack Engineer *Tehran, Iran*

- Developed RESTful services and integrated backend analytics pipelines with interactive data dashboards.

LANGUAGES

Persian (Native) English (C2; IELTS Academic Band 8.0) Arabic (Professional) French (Limited)

RESEARCH EXPERIENCE

Trinity College Dublin May 2025 – Nov 2025
Machine Learning Researcher — EmoDub Project *Dublin, Ireland*

- Conducted research on emotion-aware voice translation bridging linguistic and affective fidelity across languages.
- Developed multimodal fusion architectures combining acoustic, semantic, and contextual embeddings.
- Implemented transformer-based speech emotion recognition modules (wav2vec2.0, Whisper) improving expressivity and translation quality.

University of British Columbia Feb 2024 – Nov 2025
Ultrasound Report Generation Research Assistant *Remote (Tehran, Iran)*

- Built vision–language models for automatic ultrasound report generation using contrastive and self-supervised learning.
- Designed image-to-text generation pipelines (ViT, BLIP, T5) aligned with DICOM-compliant medical standards.
- Enhanced interpretability via attention visualization and achieved state-of-the-art BLEU and ROUGE-L scores.

L3S Research Center Apr 2023 – Feb 2024
Video Motion Classification Research Assistant *Hannover, Germany*

- Developed texture-free motion classification models leveraging 3D CNNs and transformer encoders for robust generalization.
- Achieved state-of-the-art accuracy on UCF-101 and HMDB-51 datasets through domain-invariant feature extraction.

Sharif University of Technology Jul 2025 – Sep 2025
Applied Machine Learning Researcher *Tehran, Iran*

- Explored robust and interpretable machine learning frameworks emphasizing transparency and reliability.

TEACHING EXPERIENCE

Sharif University of Technology Jan 2021 – Jul 2024
Teaching Assistant *Tehran, Iran*

- Courses: Deep Learning, NLP, Generative Models, Machine Learning, Data Science, Circuit Theory, Probability & Statistics.
- Led tutorials, supervised lab sessions, and co-authored course materials across multiple graduate and undergraduate levels.

REFERENCES

Prof. Babak Khalaj	Head, EE Dept.	Sharif University
Dr. Ehsan Asgari	Head, NLP Institute	Qatar Research Institute
Dr. Amir Mirzaenia	Professor, Computer Science	University of North Texas
Dr. Fatemeh Akbar	Professor, Electrical Engineering	Sharif University
Dr. Abbas Kazerouni	Sr. Research Scientist, RL	Apple R&D
Dr. Rohban	Professor, ECE Dept.	Sharif University