

MILAD MOHAMMADI

Email ◇ Homepage ◇ GitHub ◇ Google Scholar ◇ LinkedIn

Research Interests

Keywords: Language Agents; Large Language Models (LLMs); Multimodal Large Language Models (MLLMs); Self-evolving Agents; Digital Mental Health; Modeling Human Behavior with LLMs; Machine/Agent Behavior; LLM Safety and Alignment; Interpretability and Explainability of Agents; Human-Agent Interaction; Agent-based Simulation; Personalization & Recommender Systems using LLMs; User Profiling; Human-Centered AI; Cultural Studies & Biases in LLMs

Education

University of Tehran

Sep. 2023 – present

M.Sc. in IT Engineering – GPA: 19.14/20

- **Thesis:** *Design and Implementation of an Intelligent Assistant for Clinical Assessment and Diagnosis of Mental Disorders Using Large Language Models*

University of Isfahan

Sep. 2018 – Jul. 2023

B.Sc. in Computer Engineering (IT Major) – Major GPA: 15.72/20

- **Final Project:** *Design and Development of a Structured Feedback Collection and Evaluation System for University Teaching and Research Assistants to Enhance Instructional and Research Support Quality*

Publications

SchemaGraphSQL: Efficient Schema Linking with Pathfinding Graph Algorithms for Text-to-SQL on Large-Scale Databases, *Accepted at EACL 2026*

Safdarian, A., **Mohammadi, M.**, Jahanbakhsh, E., Naderi, M. S., & Faili, H.

PerMedCQA: Benchmarking Large Language Models on Medical Consumer Question Answering in Persian Language, Jamali, N., **Mohammadi, M.**, Baledi, D., Rezvani, Z., & Faili, H.

UT-NLP at SemEval-2025 Task 11: Evaluating Zero-Shot Capability of GPT-4o mini on Emotion Recognition via Role-Play and Contrastive Judging, *SemEval 2025*

Mohammadi, M.*, Safdarian, A.*, & Faili, H. (*Equal Contribution)

Awards

Ranked 1st nationwide in IT Engineering, Graduate Entrance Exam (Konkur) 2023

Iran national graduate admissions exam

Research Experience

NLP Lab, University of Tehran, Research Assistant (M.Sc.)

Jan. 2024 – present

↔ Advisor Prof. Hesham Faili

- Contributed regularly to weekly lab research meetings (discussion, paper critique, project planning) and collaborative development led by the supervisor. Also mentored incoming lab M.Sc. students to scope research problems in language agents.

Computational Cognitive Psychology Lab, University of Tehran, Research Assistant (M.Sc.)

↔ Advisor Prof. Hadi Moradi

Jan. 2024 – present

- Initiated a lab track on LLMs for psychological applications, especially agentic modeling of mental states and behaviour.

Industry Experience

IntRest (Remote) Senior AI (Research) Engineer (Part-time, Remote)

Feb. 2026 – present

- Own the end-to-end AI microservice for food analysis: refactored the full codebase, built an agentic RAG system over food and ingredient data for accurate and efficient analysis, and lead the software layer from requirements and backend design to API endpoints and production integration.

Adan AI AI Software Engineer (Part-time)

Jun. 2024 – Nov. 2025

- Led architecture and delivery of an agentic customer-service chatbot for a national bank: translated PM requirements into user stories; designed a ReAct/Reflexion workflow with >15 tool steps; implemented/reviewed LangGraph+OpenAI modules; defined and tracked evaluation metrics for production.
- Built an end-to-end PDF→chunking pipeline for Persian documents (table/chart-aware parsing, entity extraction); reduced processing cost by 50% and improved retrieval accuracy by 8% (measured on human annotated RAG eval set).
- Created an automatic FAQ-bot generator: ingests Excel FAQs, cleans, synthesizes data from seed, and deploys a ready-to-use chatbot, cutting onboarding from days to <1 hour with no manual coding.
- Engineered reusable agent-infrastructure modules (session-level user-token mgmt, conversation summarization, entity/metadata enrichment) adopted across LangGraph projects, eliminating duplicate code and accelerating new-bot delivery.

Teaching Experience

CHIEF / HEAD TEACHING ASSISTANT	ECE @ University of Tehran
SPRING 2026	
Natural Language Processing	Dr. Yadollah Yaghobzadeh
Managed the TA team in designing and grading CAs, organized class quizzes, and coordinated and scored student paper presentations.	
FALL 2025	
Natural Language Processing	Prof. Hesham Faili
Led a 12-member TA team and coordinated course planning, weekly schedules, quizzes, and exams.	
GRADUATE TEACHING ASSISTANT	ECE @ University of Tehran
SPRING 2025	
Large Language Models	Dr. Yadollah Yaghobzadeh; Dr. Mohammad Javad Dousti
Designed a multi-stage course assignment on <i>language agents</i> : from prompt-router baselines to ReAct-style agents solving text-to-SQL on the BIRD dataset; authored rubric and graded the assignment, midterm, and final. [GitHub] Led a hands-on workshop on building agents with <i>LangGraph</i> ; recording available in Persian on YouTube. [YouTube]	
FALL 2024	
Natural Language Processing	Prof. Hesham Faili
Authored the final project <i>ChatFood</i> : an agentic food-ordering chatbot with RAG over a “food book,” tool use for order/track/cancel, and a Reflexion-based recommender; provided runnable backend and DB starter code. [GitHub] Ran a 4-hour workshop on chatbots & agents with <i>LangGraph</i> , <i>LanceDB</i> , and <i>Chainlit</i> covering design patterns and evaluation. [YouTube]	
Intelligent Information Retrieval	Dr. Azadeh Shakeri
Designed <i>NanoSparseRetriever</i> : a from-scratch Python assignment covering indexing, query/document processing, and pluggable scoring, students implemented TF-IDF/BM25 and probed parameter effects. [GitHub] Taught a project workshop on <i>OpenAI API</i> and RAG pipelines using <i>LanceDB</i> and open-source dense retrievers. [YouTube]	
Deep Learning & Neural Networks	Dr. Ahmad Kalhor
Designed the course project on LLM fine-tuning: <i>Gemma 2</i> for Persian chat via Prefix-Tuning, LoRA, and QLoRA; delivered a workshop on LLM architecture and fine-tuning with <i>Hugging Face Transformers</i> .	
WORKSHOP INSTRUCTOR	University of Tehran
SPRING 2025	
Artificial Intelligence & Digital Transformation	Prof. Majid Nili Ahmadabadi
Delivered two large-venue lectures (500+ students) in the course’s inaugural <i>university-wide</i> offering open to all fields, covering prompting, Language-Agent concepts, and building simple workflow agents in <i>n8n</i> , tailored for non-engineering cohorts.	
UNDERGRADUATE TEACHING ASSISTANT	University of Isfahan
2019–2023	
Undergraduate Computer Engineering Courses	
Algorithm Design; Discrete Mathematics; Programming Foundations; IT Foundation; E-Commerce	

Technical Skills

Software Engineering	Python; FastAPI; Pydantic; Testing (pytest); Packaging (uv, pip-tools)
LLM Agents	LangGraph; OpenAI SDK; ReAct; Plan-and-Execute; Multi-Agent; Memory; LangFuse
Inference & Fine-tuning	vLLM; HF Transformers; PEFT/LoRA/QLoRA; TRL; Tokenizers;
Retrieval & RAG	Milvus; LanceDB; Hybrid Search; Rerankers; Chunking; Evaluation (LLM-as-Judge)
Machine Learning	PyTorch; scikit-learn; NumPy; Pandas; Matplotlib; Feature Engineering;
Backend Development	PostgreSQL; SQLite; REST/gRPC; WebSockets; OAuth2/OIDC; JWT
MLOps & DevOps	Docker; Docker Compose; CI/CD; Observability (metrics/logs/traces);
Product & Delivery	Agile; Requirements Analysis; Documentation; Roadmaps/OKRs/KPIs

English Proficiency

TOEFL iBT (Test Center)	July 25, 2026
Overall: 5.5 (110/120), C1 — Reading: 6.0/6 — Listening: 6.0/6 — Writing: 5.5/6 — Speaking: 5.0/6	

Selected Projects

Text-to-Insight Data Analyst Agent (Text2SQL & Data Visualization)	LLMs course final project; Team of 3 [GitHub]
End-to-end agent converting natural-language questions into SQL over a curated SQLite DB (from the BIRD dataset), then auto-generating Python analysis code for tables/plots and a written report; included an LLM-as-judge framework to evaluate component quality and end-to-end answers (report accuracy and SQL exact-match).	
MedYar: Health Reservation Agent (Triage & Booking)	48-hour hackathon; Team of 3 [GitHub]
Doctor-visit assistant performing symptom intake and specialty routing, collecting user preferences (e.g., physician/time), checking availability, and booking on <i>Paziresh24</i> ; implemented as a ReAct-style tool-use agent with web automation for a full booking flow (demo end-to-end success rate reported).	

Volunteering Experience

ACM Student Chapter, University of Isfahan	Committee Member	Oct. 2019 – Dec. 2022
Organized programming contests and taught algorithm design; participated in weekly ICPC trainings.		
TEDxUniversityOfIsfahan	Team Lead & Organizer	Feb. 2015 – Dec. 2020
Founded <i>TEDxUniversityOfIsfahan</i> (2019) and led end-to-end (planning, budgeting, sponsorship, marketing, speaker coaching); the series now runs annually via the student community, with talks reaching thousands of views.		