

ERFAN SHAHABI

NLP, LLM Researcher

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Research Interests

Natural Language Processing, Large Language Models, Strategic Reasoning and Behavior of LLMs, Social Intelligence, Computational Social Science, Machine Behavior

Education

M.Sc in Information Technology Engineering, GPA: 4.00/4.00 Sep 2024 – Present
(17.76/20) Tehran, Iran

University of Tehran, School of ECE

- Supervisors: [Dr. Azadeh Shakery](#), [Dr. Yadollah Yaghoobzadeh](#)
- Thesis: An Investigation and Enhancement of Strategic Behavior of Large Language Models in Social Context

B.Sc in Industrial Engineering, GPA: 4.00/4.00 (18.07/20) Sep 2019 – Aug 2023
Islamic Azad University, Science and Research Branch Tehran, Iran

- Supervisor: [Dr. Abbas Saghaei](#)
- Thesis: Used Car Price Prediction Using Machine Learning Methods

Publications

- **AuDipe: Behavior-Grounded User Simulation via Audited Dialogue-based Profile Enrichment for Conversational Recommender Systems**
Under Review at *EMNLP 2026 Main Conference* 🔗
A Roshandel*, E Shahabi*, MS Sadeghi, A Shakery (*equal contribution, ordered randomly)
- **PerSo: Evaluating Social Intelligence of LLMs using Real-World Persuasion Scenarios**
Under Review at *EACL 2027 Main Conference* 🔗
A Zamani, S Esfahanian, E Shahabi, MT Pilehvar, A Shakery, Y Yaghoobzadeh

Professional Experience

Researcher Sep 2024 – Present
Intelligent Information Systems Lab ECE @ University of Tehran

- Supervisors: [Dr. Azadeh Shakery](#), [Dr. Yadollah Yaghoobzadeh](#)
- Research Area: Strategic Behavior and Social Reasoning of LLMs

AI Engineer / Data Scientist Jul 2026 – Present
Potk.ir Tehran, Iran

- Built data analysis and forecasting pipelines to predict market trends in electrical cable purchasing and sales
- Developed AI-powered tools leveraging LLMs and information retrieval techniques to support business decision-making

AI Engineer Feb 2026 – Jul 2026
Mofid Stock Brokerage Tehran, Iran

- Developing AI-powered financial tools leveraging LLMs and information retrieval techniques

Leadership Experience

Supervised 2 Bachelor Students for Research Project Mar 2026 – Aug 2026
Intelligent Information Systems Lab ECE @ University of Tehran

- Supervised undergraduate research on LLM social intelligence evaluation
- Resulted in a paper submission to ACL ARR 2026

Teaching Experience

Teaching Assistant, Natural Language Processing (Graduate)

Sep 2025 – Present

Course Website · Instructor: [Dr. Heshaam Faili](#)

ECE @ University of Tehran

- Designed TravelBot assignment: a conversational travel assistant using ReAct architecture and LangGraph for flight search, hotel booking, and trip planning
- Implemented RAG pipeline for retrieving destination information and generating personalized travel recommendations
- Led workshops mentoring students on LangChain and LangGraph frameworks for building agent-based systems

Teaching Assistant, Intelligent Information Retrieval (Graduate)

Sep 2025 – Present

Course Website · Instructor: [Dr. Azadeh Shakery](#)

ECE @ University of Tehran

- Designed assignments on conversational search, RAG systems, and multi-agent architectures
- Conducted workshops on probability theory and machine learning foundations for information retrieval
- Led technical workshops on LLMs in IR, covering LangChain, LangGraph, and ReAct patterns
- Guided students in implementing practical retrieval systems using state-of-the-art language models

Teaching Assistant, Advanced Data Mining (Graduate)

Feb 2026 – Present

Instructor: [Dr. Azadeh Shakery](#)

ECE @ University of Tehran

- Designed GNN-based assignment on academic network analysis, where students predict paper authorship and inter-paper relationships using graph neural networks
- Conducted hands-on workshops on GNN architectures and their applications in network data mining

Teaching Assistant, Natural Language Processing (Graduate)

Feb 2026 – Present

Instructor: [Dr. Yadollah Yaghoobzadeh](#)

ECE @ University of Tehran

- Designed and managed a financial advisory chatbot assignment, guiding students in building domain-specific conversational agents using LLMs
- Led workshops on fine-tuning and prompt engineering for task-specific NLP applications

Selected Projects

- Fine-Tuning LLaMA-3.2 using ORPO and DPO for Human-Preference-Based Alignment [🔗](#)
- Quantization-Aware Reasoning and Text-to-SQL Agent Design using ReAct and LangGraph [🔗](#)
- ChatFood: Building a ReAct-based Conversational Food chatbot with LangGraph and Gemini [🔗](#)
- Conversational Search with RAG: Dataset Construction and Multifaceted Evaluation [🔗](#)
- Developing a RAG pipeline for oil and gas drilling chatbot for Binvest Co. [🔗](#)
- Deep Learning for Sequence Labeling and Text Summarization with RNNs and Attention [🔗](#)
- Sentiment Classification of IMDB Reviews using Text Preprocessing and Classical IR Techniques [🔗](#)
- Relevance Classification using BERT for Query-Document Pairs in IR Tasks [🔗](#)
- Semantic Clustering of StackOverflow Questions using Sentence Embeddings [🔗](#)
- Forecasting Community Dynamics in Social Graphs using Multi-Task GNNs [🔗](#)

Technical Skills

- **Soft Skills:** Teamwork, Meeting Tight Deadlines
- **Programming Languages:** Python
- **Large Language Models:** Hugging Face, LangChain, LangGraph, LangFuse, Unsloth, PEFT, Datasets, TRL
- **Databases:** SQL, LanceDB
- **Machine Learning:** PyTorch, Scikit-Learn, Evaluate, TensorFlow
- **Retrieval:** Sentence Transformers, Lexical Retrieval, Semantic Retrieval, BM25

Honors and Awards

- Ranked 14 in Nationwide Graduate Level University Entrance Test of Information Technology Engineering

Languages

- **Persian:** Native **English:** Fluent