

ERFAN SHAHABI

NLP, LLM Researcher

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RESEARCH INTERESTS

Natural Language Processing, Large Language Models, Social Intelligence, Computational Social Science, Machine Behavior

EDUCATION

M.Sc in Information Technology Engineering, GPA: 4.00/4.00 (18.4/20) Sep 2024 – Present
University of Tehran, School of ECE Tehran, Iran

- Supervisors: Dr. Azadeh Shakery, Dr. Yadollah Yaghoobzadeh

- Thesis: An Investigation into Enhancing 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

PUBLICATIONS

- ProDAKD: A Profile-based Dialogue Agents Knowledge Distillation Approach for User Simulation in Conversational Recommender Systems**
Under Review at ECIR 2026 Main Conference
E Shahabi*, A Roshandel*, M Sadeghi, V Rahimzadeh, A Shakery (*equal contribution)

PROFESSIONAL EXPERIENCES

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

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. ↗
- Multilingual NER and Efficient Summarization with LLMs and Model Compression ↗
- 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 Graph Neural Networks ↗

COURSES

Natural Language Processing

University of Tehran

Instructor: Dr. Hesham Faili

- Progressed from fundamental NLP concepts to advanced techniques
- Implemented a chatbot as final project using tool-use strategies
- Utilized APIs, Transformers, Hugging Face, Langchain, Langgraph, and agents

Large Language Models

University of Tehran

Instructors: Dr. Yadollah Yaghoobzadeh, Dr. MJ Dousti

- Gained strong skills working with LLMs through multiple practical projects
- Worked extensively with APIs, Transformers, Hugging Face, and agent frameworks
- Developed use cases showcasing model integration and API utilization

Intelligent Information Retrieval

University of Tehran

Instructor: Dr. Azadeh Shakery

- Started with ad-hoc retrieval methods and embeddings
- Worked with BERT models for improved retrieval performance
- Explored application of LLMs in retrieval-augmented generation (RAG)

Advanced Data Mining

University of Tehran

Instructor: Dr. Azadeh Shakery

- Learned data fundamentals including cleaning and preprocessing
- Covered data cubes, classification, clustering, and deep learning applications
- Applied techniques in real-world datasets

Social Networks

University of Tehran

Instructor: Dr. Masoud Asadpour

- Studied graph theory, centrality measures, and community detection
- Applied concepts to analyze real-world network data through projects

TECHNICAL SKILLS

- **Soft Skills:** Teamwork, Meeting Tight Deadlines
- **Programming Languages:** Python
- **Large Language Models:** Hugging Face, LangChain, LangGraph, LangFuse, Unslot, 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