Mohammadali Mohammadkhani

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EDUCATION

- **M.Sc. in Computer Science** at **Saarland University** Oct. 2025 - Present
  - GPA: 1.6/1.0 (German scale; 1.0 best)
- **B.Sc. in Computer Engineering** at **Sharif University of Technology** Sep. 2019 - July 2024
  - GPA: 3.671/4 (Average: 18.09/20)
- **Diploma of Mathematics** at **Ehsan High School** Sep. 2015 - Sep. 2019
  - GPA: 4/4 (Average: 19.45/20)

RESEARCH INTERESTS

- **Natural Language Processing**
- **Human-centered Computing**
- **Machine Learning**

PUBLICATIONS

- **M. Mohammadkhani**, M. Krishna, Y. Sarrof, and M. Hahn. **Hidden Reasoning Must Leak, but Need Not Be Readable: Fundamental Opportunities and Limits for Chain-of-Thought Monitoring.** *Preprint, under review*, 2026. [Paper]
- S. Elahimanesh, **M. Mohammadkhani**, S. Zahedi, M. M. Abootorabi, S. Salehi, and A. Edalat. **Structure Matters: Evaluating Multi-Agents Orchestration in Generative Therapeutic Chatbots.** *ACM CUI*, 2026. [Paper]
- S. Elahimanesh, **M. Mohammadkhani**, and S. Kasaei. **Feeds Don't Tell the Whole Story: Measuring Online-Offline Emotion Alignment.** *ACM CHI Extended Abstracts*, 2026. [Paper]
- M. M. Abootorabi, A. Zobeiri, M. Dehghani, **M. Mohammadkhani**, B. Mohammadi, O. Ghahroodi, M. S. Baghshah, and E. Asgari. **Ask in Any Modality: A Comprehensive Survey on Multimodal Retrieval-Augmented Generation.** *Findings of ACL*, 2025. [Paper]
- **M. Mohammadkhani**, S. Zahedi, H. Khalajzadeh, M. Shahin, and K. Tran. **Toward Inclusive Low-Code Development: Analyzing Accessibility Issues in User Reviews.** *EASE*, 2025. [Paper]

RESEARCH EXPERIENCE

- **Hidden Reasoning and Chain-of-Thought Monitoring**
  - **Feb. 2026 - Present | LaCoCo Lab, Saarland University**, under the supervision of **Prof. Dr. Michael Hahn**.
  - Led the experimental design and implementation of a research project investigating the fundamental opportunities and limitations of chain-of-thought monitoring in large language models.
  - Analyzed experimental findings in relation to theoretical predictions, investigating when hidden computations leave detectable traces in model-generated reasoning.
  - Resulted in a **first-author paper under review**: *Hidden Reasoning Must Leak, but Need Not Be Readable*.
- **Graph-Based Multimodal Reasoning**
  - **Mar. 2026 - Present | UKP Lab, Darmstadt University**, under the supervision of **Prof. Yue Feng**.
  - Leading research on graph-based approaches to improve reasoning in vision-language models, including literature review, method development, and the design and execution of experiments to evaluate their effectiveness.

- **Murano: A Framework for Mechanistic Interpretability of LLMs**
  - **Fall 2025 - Winter 2025/26 | UKP Lab, Darmstadt University**, under the supervision of **Prof. Iryna Gurevych**. Worked as a research assistant on the design and development of *Murano*, a modular framework for reproducible mechanistic interpretability research.
  - Designed and implemented components for activation probing, activation patching, and computing and applying steering vectors, supporting systematic analysis and controlled interventions on model representations.

HONORS AND AWARDS

- **Zuse School ELIZA Scholarship, 2025**
  - Awarded a competitive, merit-based scholarship for Master's studies in Artificial Intelligence at Saarland University.
- **National University Entrance Examination, 2019**
  - Ranked **47th** among approximately 150,000 candidates (**top 0.04%**).

TEACHING EXPERIENCE

Teaching Assistant: *Saarland University*

- **Neural Networks: Theory and Implementation** Winter 2025/26

Teaching Assistant: *Sharif University of Technology*

- **Data Structures and Algorithms** 2 semesters
- **Linear Algebra** Spring 2022
- **Advanced Programming** Spring 2021
- **Software Engineering** Fall 2023
- **Computer Structures and Languages** 3 semesters
- **Computer Architecture** Fall 2022
- **Computer Networks** Spring 2023

RELEVANT COURSEWORK

Saarland University German grading scale: 1.0 (best)

- **Machine Learning** 1.7
  Prof. Isabel Valera
- **Neural Networks: Theory and Implementation** 1.3
  Prof. Dietrich Klakow
- **Elements of Machine Learning** 2.0
  Prof. Isabel Valera
- **Human-Computer Interaction** 1.7
  Prof. Jürgen Steimle

Sharif University of Technology Grading scale: 20 (best)

- **Machine Learning (Graduate)** 20/20
- **Modern Information Retrieval** 20/20
- **Linear Algebra** 20/20
- **Artificial Intelligence** 18.8/20
- **Design of Algorithms** 20/20
- **Software Engineering** 20/20

SKILLS

- **Programming:**
  - Python, Java, Javascript
- **Machine Learning:**
  - PyTorch, Hugging Face Transformers, NumPy, Pandas, NLTK
- **Web Development:**
  - HTML, React, FastAPI, and React-native

- **OS and Utilities:**
  - Git, Linux, LaTeX, Condor, Slurm

INDUSTRIAL WORK EXPERIENCE

- **Software Engineer, Digikala** July 2022 – August 2025
  - Refactored and redesigned the architecture of Digikala's large-scale mobile application, improving code maintainability and modularity.
  - Designed and implemented new features using React, React Native, and TypeScript, and developed backend services using Java and Spring Boot.
  - Collaborated with cross-functional engineering teams on system design, development, and integration of production software.

LANGUAGES

- **English** (TOEFL iBT 106), **German** (A2), **Persian** (native).

REFERENCES

- Prof. Dr. Michael Hahn
  - Professor at Saarland University
  - mhahn@lst.uni-saarland.de

- Dr. Mojtaba Shahin
  - Assistant Professor at RMIT University
  - mojtaba.shahin@rmit.edu.au