Ali Imanifard

Tehran, Iran aliimanifard13@gmail.com aliimanifard.github.io
Google Scholar: Ali Imanifard aliimanifard AliImanifard

Summary

Ranked **1st out of 100+** students in my M.Sc. cohort for two consecutive years and in my final 18 months of B.Sc. study, achieving a **GPA of 20.00/20.00**, with top performance throughout. Authored **13+ publications**, including **two IEEE Best Paper Awards**; placed 1st out of 150 submissions at IEEE SGC 2024. Served two years as a Research Assistant and Teaching Assistant for multiple faculty members, including teaching under Dr. Seyed-Hassan Mirian-Hosseinabadi (adjunct at my university; faculty at **Sharif University of Technology**, **Iran's most eminent & top-ranked institution**). Conducted research in AI, ML, NLP, LLMs, and Agents. Committed to producing high-impact research and contributing meaningfully to the academic community at the Ph.D. level.

Education

M.Sc. Computer Engineering, Software, Khatam University, Tehran, Iran — 2023 – 2025
Grad. date: Sept. 2025

University ranked 6th among Iran's 269 non-governmental universities by the Islamic World Science Citation Center (ISC) in 2025.

- Thesis: *Human-Centered Artificial Intelligence for Enhancing Educational Communication and Student Well-being*
- GPA: **20.00/20.00**, 4.0 (out of 4.0) — *full marks in every course*

B.Sc. Computer Engineering, University of Eyvanekey, Semnan, Iran — 2019 – 2023

University ranked 12th among Iran's 269 non-governmental universities by the ISC in 2025 and 1st by the Ministry of Science, Research and Technology in 2014.

- GPA: 18.25/20.00, 3.78 (out of 4.0)
- Final 18 months GPA: 19.34/20.00, 3.91 (out of 4.0)

Publications

Journal Articles

1. ***A. Imanifard***, B. Majidi, and A. Shamisa, "SmartGridAgent: An Educational Framework for Reliable Digital Twin-Based Smart Grid Workforce Training with Locally Hosted LLMs," *Smart Grids and Sustainable Energy*, Vol. 10, no. 2, p. 41, May 2025, doi: 10.1007/s40866-025-00274-0.
2. M. Imani, ***A. Imanifard***, B. Majidi, and A. Shamisa, "Dashboard-Driven Machine Learning Analytics and Conceptual LLM Simulations for IIoT Education in Smart Steel Manufacturing," *In revision for International Journal of Web Research*.
3. ***A. Imanifard***, E. Akhtarkavan, and B. Majidi, "Preserving Intellectual Property in AI-Generated Student Artworks via A_8 Lattice Vector Quantization in Visual Arts Education," *Under review for Journal of Visual Communication and Image Representation*.
4. ***A. Imanifard*** and B. Majidi, "EducationSafetyAgent: Modeling Students' Emotionally Motivated Haptic Behaviors to Address Touchscreen Usability Risks in Digital Education," *Under review for International Journal of Artificial Intelligence in Education*.
5. M. Imani, ***A. Imanifard***, B. Majidi, and A. Shamisa, "AI-Integrated Vocational Education and Workforce Reskilling for Steel Industry 4.0," *Under review for International Journal of Research and Technology in Electrical Industry*.
6. ***A. Imanifard*** and B. Majidi, "LiveTutorAgent: Enhancing Educational Communication and Student Well-being With LLM-based Agents for Smart Digital Reality Classroom," *(In Preparation — Analysis and Drafting)*.

7. ***A. Imanifard***, B. Majidi, and M. Imani, "RecomPath: An LLM-Empowered Multi-Agent-based Framework for Intelligent Learning and Research Path Recommendation for Academic Advantage in Competitive Education Market," *(In Preparation — Analysis and Drafting)*.
8. A. Shokri, ***A. Imanifard***, B. Majidi, "Immersive Virtual Reality Wildfire Simulation with Digital Twin Technology for Emergency Training," *(In Preparation — Pre-Submission Revision)*.
9. ***A. Imanifard***, S.H. Mirian, and B. Majidi, "Software Testing Education with Large Language Model-empowered Agents," *(In Preparation — Data collection ongoing)*.
10. ***A. Imanifard***, B. Majidi, and A. Shamisa, "LLM-based Virtual Assistant Agent for Electric Vehicle Mechanics to Predict Defects and Maintain the Supply Chain," *(In Preparation — Data collection ongoing)*.

Conference Papers

1. M. Imani, ***A. Imanifard***, B. Majidi, and A. Shamisa, "Applications of Large Language Models in Industrial Internet of Things Education," in *2025 11th International Conference on Web Research (ICWR)*, 2025: *IEEE Xplore*, doi: 10.1109/ICWR65219.2025.11006194. **[Best Paper Award]**
2. ***A. Imanifard***, B. Majidi, and A. Shamisa, "Trustworthy Large Language Model Prompt Engineering for Risk-Free Smart Grid Management Education," in *2024 14th International Smart Grids Conference (SGC)*, 31 Dec. 2024-1 Jan. 2025, 2025: *IEEE Xplore*, pp. 1-6, doi: 10.1109/SGC64640.2024.10983889. **[Best Paper Award]**
3. ***A. Imanifard*** and B. Majidi, "Effective Android Malware Detection using Emotional Reactions to Sudden Events," in *2024 10th International Conference on Web Research (ICWR)*, 2024: *IEEE Xplore*, pp. 390-396, doi: 10.1109/ICWR61162.2024.10533349.

Research Interests

- Large Language Models
- LLM Agents
- Natural Language Processing
- LLM Applications
- LLM Interpretability
- Educational Technology

Honors & Awards

- **Best Paper Award**
  - The *14th International Smart Grids Conference, IEEE*, 2025.
  - Ranked 1st among 150 papers
  - Received perfect score (100/100) from all reviewers
- **Best Paper Award**
  - The *11th International Conference on Web Research (ICWR), IEEE*, 2025.
- **Ranked 1st in Cumulative GPA & Academic Performance** among all M.Sc. graduates, Khatam University, 2025.
- **Outstanding Graduate Student**, Khatam University, 2023–2025.
- **Outstanding Graduate Researcher**, Khatam University, 2023–2025.
- **Merit-based Scholarship for Outstanding Academic Achievement**, Master's Degree, Khatam University, 2023–2025.
  - Awarded a partial tuition exemption for outstanding academic achievement.
- **Ranked 2nd in Cumulative GPA & Academic Performance** among all B.Sc. graduates, University of Eyvanekey, 2023.
  - Ranked 1st during the final 18 months of the program
- **Outstanding Undergraduate Student**, University of Eyvanekey, 2020–2023.
- **Merit-based Scholarship for Outstanding Academic Achievement**, Bachelor's Degree, University of Eyvanekey, 2021–2023.
  - Awarded a partial tuition exemption for outstanding academic achievement.
- **Ranked in Top 5%** Nationally among 20,000 participants, National University Entrance Exam for M.Sc. of Computer Engineering, Tehran, Iran, 2023.

Teaching & Research Experiences

Graduate Research Assistant

- **Smart Digital Reality Lab**

  Khatam University

  2023 – *present*

  - **Director:** Prof. Dr. Babak Majidi
  - **Contributed to 13 publications** by conducting comprehensive literature reviews, synthesizing key findings, and authoring manuscript sections.
  - **Designed and implemented data-collection protocols**, including surveys, questionnaires, and experimental setups, gathering qualitative and quantitative data across fieldwork and laboratory studies.
  - **Developed research methodologies and hypotheses**, co-designing over a dozen experiments and surveys to rigorously test research questions.
  - **Analyzed complex datasets** using statistical and computational techniques, presenting actionable insights that informed iterative study designs.
  - **Maintained laboratory and field operations**, ensuring meticulous documentation of procedures, results, and compliance with research standards.
  - **Prepared manuscripts, presentations, and posters**, proofreading and editing for clarity, cohesion, and adherence to journal and funding guidelines.

Graduate Teaching Assistant

- **Software Testing**

  Khatam University

  2025 – *present*

  - Prof. Dr. Seyed-Hasan Mirian-Hosseinabadi, Sharif University of Technology
  - **Mentored student groups** in designing and executing academic projects, providing technical guidance and feedback throughout the course.
  - **Delivered a video lecture on JUnit**, hosted on the university's Moodle LMS, as a reusable learning resource for students.
  - Provided **one-on-one tutoring** and academic guidance to **30 students** by developing, administering, and grading assignments, quizzes, and exams while offering constructive feedback to enhance their understanding and performance.
  - Fostered a positive and engaging learning environment by holding regular office hours, effectively communicating course updates, and addressing student questions and concerns regarding the curriculum and assignments.

- **Advanced Software Engineering**

  Khatam University

  2024 – *present*

  - Prof. Dr. Seyed-Hasan Mirian-Hosseinabadi, Sharif University of Technology
  - Delivered individualized tutoring and comprehensive academic support to students by managing the **grading process for a class of 30 students**, developing and grading assignments, quizzes, and exams, and providing constructive feedback on their performance.
  - Fostered a collaborative and engaging learning environment by mentoring students, addressing their inquiries and concerns regarding course material and assignments, and holding regular office hours for personalized support.
  - Effectively communicated course updates and essential information, consistently earning positive student feedback for my contributions as a teaching assistant.

- **Advanced Artificial Intelligence**

  Khatam University

  2024 – *present*

  - Prof. Dr. Babak Majidi
  - Led student mentorship on **LLM Agents** and generative AI workflows, introducing **chain-of-thought prompting** techniques and coaching learners to build custom LLM Agents for real-world NLP tasks.
  - Guided **70+ students** on **transformer-based LLMs** (e.g., GPT, BERT) during lectures

and virtual meetings, providing real-time feedback on hands-on prompt-engineering exercises.
- Compiled and communicated cutting-edge LLM research trends—including prompting best practices, retrieval-augmented generation, and LLM Agent integration with external APIs—enabling students to critically appraise and apply recent publications.
- Provided one-on-one tutoring in advanced NLP frameworks, locally hosted LLM integration, and ethical AI considerations, resulting in a measurable increase in student project quality.
- Earned consistently outstanding feedback for clarity and engagement in explaining lessons on machine learning, deep learning, and deploying LLMs in real-world applications.

- **Statistical Learning Theory**

  Khatam University

  2024 – 2024

  - Prof. Dr. Shiva Kamkar
  - **Delivered lectures** on "An Introduction to the R Programming Language" and "Data Visualization in R with ggplot2 (Beginning to Advanced)," **led weekly discussion** sections, and conducted **13 recitation sessions**, effectively clarifying complex concepts while guiding students through problem-solving and application of statistical learning theory.
  - Developed, administered, and graded assignments, quizzes, and exams, and provided constructive feedback to improve student understanding.
  - Provided comprehensive academic support by addressing student questions and concerns regarding course material and assignments, thereby contributing to a positive and engaging learning environment.

Skills

- **Programming Languages**
  - Python, R, Java, C, C++, SQL, Julia, MATLAB
- **LLM & AI Development Environments**
  - LLM Agent Frameworks
    - CrewAI, LangChain, Llama Index, OpenAI Agents SDK
  - Embeddable Local AI Engines
    - llama.cpp, Ollama, PrivateGPT, GPT4All, Msty, LM Studio, Jan
  - LLM-Specific Tools and Techniques
    - Transformers (Hugging Face)
    - Prompt Engineering
    - Few-Shot Prompting, Chain-of-Thought Prompting, Retrieval Augmented Generation (RAG), Generate Knowledge Prompting, Program-Aided Language Models (PALs), Tree of Thoughts (ToT), ReAct, Reflexion, etc.
  - NLP Libraries
    - spaCy, NLTK
  - General AI Development Frameworks
    - TensorFlow, Keras, PyTorch, scikit-learn
  - Visualization Tools
    - Matplotlib, Seaborn, Plotly, ggplot2
  - Data Processing Tools
    - Pandas, NumPy, dplyr
- **Engineering Software Skills**
  - IDEs: Anaconda, RStudio, PyCharm, Visual Studio Code, IntelliJ IDEA
  - Interactive Application Development Tools: Gradio, Streamlit

  - Data Science and Analytics Platforms: RapidMiner
- **Academic Writing Tools**
  - LaTeX, Overleaf, EndNote, Mendeley, Zotero
- **Core Competencies**
  - Git, GitHub
  - Jupyter Notebook, Google Colab, Kaggle Notebooks
  - MySQL, Microsoft SQL Server, PostgreSQL, MongoDB, SQLite
  - Apache Spark, Hadoop
  - Microsoft Office, Google Workspace (formerly G suite)
  - Canva, Figma
- **English Test Scores**
  - TOEFL (iBT)
    - Test planned for 2025
    - Actively preparing, targeting CEFR C1 proficiency
  - Duolingo English Test
    - Considering as a convenient alternative due to accessibility and logistics

Voluntary Services

Master's Thesis Guidance and Feedback Facilitator — Khatam University, 2024 – *present*

- Provided comprehensive feedback and full reviews for master's students before their thesis defense, assisting with structure, content, and defense preparation.

Peer Support in Academic Writing and Research — Khatam University, 2024 – *present*

- Provided academic support to university students by reviewing their theses and articles. Assisted with research design, academic writing, and presentation prior to faculty review.

Organizer of Free Research Training Sessions — Khatam University, 2024 – *present*

- Organized and led online sessions on research methodologies, proposal writing, and scientific paper drafting, providing valuable resources and training to participants at no cost.

Educational Case Advisor — Khatam University, 2024 – *present*

- Assisted master's students in selecting thesis topics, advising on feasibility and research potential to align with academic and career aspirations.

Academic Mentor and Study Group Leader — Khatam University, 2024 – *present*

- Led undergraduate study groups, managing project timelines, task delegation, and progress reporting. Provided leadership, project management, and mentorship to facilitate successful project completion.

Selected Academic Projects

LLM-Empowered Multi-Agent Framework for Academic and Career Path Optimization Using Newly Collected GradCafé Dataset, 2025 — Repository available upon publication acceptance

- Developed a multi-agent system utilizing a newly scraped, comprehensive GradCafé dataset to predict university admission chances, recommend resume improvements, and provide personalized academic and career guidance powered by LLM.

Emotion-Aware Modeling of Student Safety in E-Learning via Touchscreen Response Analysis, 2025

Repository available upon publication acceptance

- Developed an emotion-aware framework that analyzes touchscreen interactions and behavioral patterns in mobile e-learning to model student safety, using NLP, machine learning, and LLM agents for real-time, privacy-preserving risk detection.

LLM-Based Disaster Management Multi-Agent System, 2025

github.com/AliImanifard/LLM-Disaster-Management-Agents

- Developed a multi-agent system using LLMs with Vulkan-accelerated inference to simulate and optimize disaster response—including forecasting earthquakes, issuing flood alerts, and planning logistics under constraints.

SmartGridAgent: Autonomous Grid Operations Using Locally Hosted LLMs, 2025

github.com/AliImanifard/SmartGridAgent-LocalLLM

- Designed and implemented a digital twin-based training environment for smart grid operations, leveraging locally hosted LLMs to enable autonomous decision-making and control within the grid environment.

Vision Transformer (ViT)-based Evaluation and Stable Diffusion Metadata Generator for Academic Image Datasets, 2025

github.com/AliImanifard/Stable-Diffusion-metadata-generator

- Developed a metadata generation pipeline for Stable Diffusion datasets and designed an evaluation framework using ViT and SSIM to assess image quality and metadata retrieval performance by comparing original and reconstructed images.

Analysis of Socioeconomic Factors on Student Academic Performance and Outcomes: A Statistical Learning Theory Approach, 2024

github.com/AliImanifard/Student-Performance-Analysis-SLT

- Investigated the impact of socioeconomic factors and student academic choices on educational attainment using advanced Statistical Learning Theory methods. Performed data preprocessing, feature engineering, outlier detection, and statistical modeling to analyze student performance and graduation likelihood.

Enhancing Student Engagement in Software Testing Education Using JUnit, 2024

github.com/AliImanifard/junit-engagement-software-testing

- Designed and implemented superhero-themed JUnit lecture and interactive materials to improve student understanding of software testing concepts. Implemented in Java using NetBeans IDE with an emphasis on practical unit testing skills.

Distributed Natural Join Implementation Using PySpark and MapReduce, 2023

github.com/AliImanifard/spark-natural-join-mapreduce

- Developed a PySpark-based system to execute a natural join on distributed CSV datasets using RDD transformations, simulating MapReduce logic in a Hadoop environment.

Analysis of Android Application Behaviors Using Business Intelligence and Machine Learning, 2023

Code not retained due to institutional constraints.

- Applied machine learning and data mining techniques in RapidMiner to analyze Android app behaviors based on native and custom user permissions using a business intelligence approach.

References

Babak Majidi
(Master's Supervisor)
Associate Professor
Dept. of Computer Engineering
Khatam University,
Tehran, Iran
Email: b.majidi@khatam.ac.ir

Seyed-Hasan Mirian-Hosseinabadi
(TA / Course Student / Co-author)
Associate Professor
Dept. of Comp. Science & Eng.
Sharif University of Technology,
Tehran, Iran
Email: hmirian@sharif.edu

Shiva Kamkar
(TA / Course Student / Co-author)
Assistant Professor
Dept. of Computer Engineering
Khatam University,
Tehran, Iran
Email: sh.kamkar@khatam.ac.ir