

# ALI KERAMATI

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## Education

### University of California Irvine

Jan. 2025 – Now

*Ph.D in Educational Data Science (GPA: 4/4)*

*Irvine, CA, USA*

- Relevant Courses: NRL NTWKS&DEEP LRNG (4/4), LEARNING ANALYTICS FUNDAMENTALS (4/4), QUAL RSCH MTHDS (4/4), NEURAL ARCH OF LANGUAGE (4/4), LEARNING ANALYTICS PRACTICUM (4/4)

### University of Tehran

Sep. 2019 – Jul. 2024

*B.Sc. in Computer Engineering (GPA: 18.51/20) & Minor in Educational Science (GPA: 19.21/20)*

*Tehran, Iran*

- Major Courses: Discrete Mathematics (20/20), Data Structures and Algorithms (20/20), Artificial Intelligence (19.1/20), Machines and Language Theory (18.9/20), Engineering Probability and Statistics (17.8/20), Internet Engineering (20/20), Foundations of IT (19.6/20), Large Language Models (20/20)
- Minor Courses: Educational Psychology (18.75/20), Instructional Design (19/20), Curriculum Development (20/20), Intro to Psychological Tests (20/20), Teaching Methods (20/20), Qualitative and Quantitative Research Methods (19/20)

### Allame Helli 4 High School

Sep. 2016 – Jul. 2019

*Diploma in Mathematics and Physics*

*Tehran, Iran*

- Part of the National Organization for Development of Exceptional Talents (NODET)

## Research Interests

- Learning Analytics
- AI-Driven Personalized Learning
- Human-AI Collaboration — CSCL
- Cognitive Evaluation of LLMs
- Multi-Agent LLM Systems
- LoRA Fine-tuning — RAG

## Work Experience

### Graduate Student Researcher

Jan. 2025 – Present

*Digital Learning Lab, PI: Prof. M. Warschauer*

*UC Irvine*

- SWE Agent for Educational Tools — Research on Multi-Agent LLM Systems — Fine-tuned LLaMA and BERT for argumentative essay scoring and segmentation using the PERSUADE dataset (25k+ essays) — PapyrusAI, a GPT-4-based generative writing tutor for scaffolded feedback, deployed in university and K–12 settings.

### AI/ML Engineer

Sep. 2022 - Sep. 2024

*Tadvin Farayand Co.*

*Tehran, Iran*

- Conducted data analysis on structured ERP records and unstructured industrial data — Applied research of AI solutions within ERP and industrial software ecosystems by designing multi-agentic LLM workflows to enable autonomous collaboration across modules for tasks such as inventory analysis, document processing, and predictive maintenance.

### Teaching Assistant

Sep. 2020 - Jul. 2023

*University of Tehran*

*Tehran, Iran*

- Part-time on-campus TA for courses such as: *Discrete Mathematics · Data Structures and Algorithm Design · Software Engineering · Internet Engineering · Engineering Probability and Statistics · Electrical Circuits · Database Design · Unity Game Development*

### Editor

Sep. 2019 - Sep. 2020

*Zendegiye Shad Publication*

*Tehran, Iran*

- Edited five Persian language books in the field of education, including "Implementation of Collaborative Learning," "New Approaches and Methods in Mathematics Education," "Effective Teaching-Learning in Higher Education," "Curriculum Evaluation," and "Co-Teaching."

## Publications

Keramati A., Keramati M. R., and Arefian M. H. (2024). **Students' Reflection on the Effect of Collaborative Learning on Learning Environment and Academic Achievement in Online Reflective Platforms**, *Reflective Practice*

Fallah A., Keramati A., Nazari M., and Mirfazeli F. (2024). "Automating Theory of Mind Assessment with a LLaMA-3-Powered Chatbot: Enhancing Faux Pas Detection in Autism", *14th International Conference on Computer and Knowledge Engineering (ICCKE 2024)*

Shahhoseini N., Taghiyareh F., and Keramati A. (2025). "iTAG: Easy, Rapid, Automatic Intelligent Tagging for Educational Contents", *2025 29th International Computer Conference, Computer Society of Iran (CSICC)*

Keramati M. R., Gillies R., Ansarizadeh F., and Keramati A. (2024). **Challenges and Solutions of Implementing Cooperative Learning in Classroom Environments: Lived Experiences of Primary School Teachers in Iran**, *International Journal of Early Years Education*

Vatandoust M., Mohajeri M. M., Keramati A., and Ahmadabadi M. N. (2024). "AI-powered Digital Framework for Personalized Economical Quality Learning at Scale", *Journal of Computer Assisted Learning* (Under Review)

Keramati M. R., Gillies R., Ansarizadeh F., and Keramati A. (2023). **The Concept of Cooperative Learning in Australia and Iran**, *Iranian Journal of Comparative Education*

Keramati A. and Warschauer M. (2025). **"From General to Specific: Enhancing Automated Essay Scoring through Sequential Fine-Tuning"**, (In Preparation)

Keramati A., Rismanchian S., and Doroudi S. (2025). **"Learning or Leveraging? The Unseen Impact of Generative AI on Reused University Quizzes"**, (In Preparation)

## Research Experience

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### Mathe Lab

Jan. 2025 – Present

*Researcher under Prof. S. Doroudi*

*UC Irvine*

- LLMs benchmarking Quiz — Students Performance Analysis — Predicting student outcomes — A/B Tests on Student Engagement Metrics

### LaLA-Lab

Apr. 2025 – Present

*Researcher under Prof. N. Nixon*

*UC Irvine*

- Developing AI chatbots as collaborative agents in real-world classrooms

### Cognitive Systems Lab

May 2023 – Dec. 2024

*Researcher under Prof. M. N. Ahmad Abadi*

*University of Tehran*

- Open Learner Model — Personalized learning with LLMs — Cognitive processes in learning — RLHF integration  
[aiedut.ir](http://aiedut.ir): Customized LMS — Integrated with Google Classroom and GPT-based Chatbot — Database using Postgres with Redis

### Remote Project

Sep. 2021 – Dec. 2024

*Researcher under Prof. R. Gillies*

*University of Queensland*

- Collaborative and interactive learning environments — Conducted mixed-method research using ATLAS.ti and quantitative tools

### UT NLP Group

Feb. 2024 – Dec. 2024

*Researcher under Prof. M. J. Dousti & Prof. H. Faili*

*University of Tehran*

- Fine-tuning LLMs using LoRA and Adapter methods alongside RAG (LangChain) — LLMs knowledge representation and reasoning

### Technology Enhanced Learning Lab (TELAB)

Mar. 2023 – Aug. 2023

*Researcher under Prof. F. Taghiyareh*

*University of Tehran*

- Extracted IEEE-LOMs and integrated Avida-ED for generating interactive and personalized LOs using genetic algorithms

### National Brain Centre

Jul. 2024 – Sep. 2024

*Researcher under Prof. F. S. Mirfazeli*

*Iran Univ. of Medical Sciences*

- Studied autistic brain learning processes — Automated Theory of Mind assessment and rehabilitation using LLaMA-3 chatbot

## Academic Projects

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### Handwriting Recognition Neural Network | *Keras, TensorFlow*

Artificial Intelligence

- Built Feed-Forward Neural Network from scratch — Developed model with Keras and TensorFlow

### Baloot Online Shop Website | *Java, JavaScript, Spring, Tomcat, React*

Internet Engineering

- Fully functioning Amazon clone — Used CI/CD pipelines, JDBC, JUnit, and Github OAuth

### Pong Game Using Mobile Sensors | *Java, Android Studio, Canvas*

Real-time Embedded Systems

- Implemented accelerometer and gyroscope sensors — Applied real-world physics for ball and paddle movement

## Technical Skills

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**Programming Languages:** C/C++/C#, Python, Java, JavaScript, R, HTML/CSS, Verilog, Assembly, Stata, SQL

**Frameworks & Libraries:** LangChain, CrewAI, ReAct, PyTorch, TensorFlow, React, Spring

**Technologies & Tools:** CUDA, Git, Docker, Kubernetes, Maven, Makefile, Tomcat

**Databases:** MySQL, Postgres, MongoDB, Neo4j, Redis, Elasticsearch

**Operating Systems:** Linux, Windows, macOS, Unix

**Qualitative Analysis Tools:** ATLAS.ti, Dedoose

## Awards

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### Ranked Top 0.2% in Konkour

Jul. 2019

*National Organization of Educational Testing (NOET)*

### TPC Mentorship Fellowship

Jan. 2025 – Jul. 2025

*UCI School of Education*