

# Ali Keramati

Cognition <-----> LLMs <-----> Learning

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## Education

### Ph.D in Educational Data Science

UNIVERSITY OF CALIFORNIA IRVINE

Irvine, USA

Jan. 2025 - present

- CGPA: 4/4
- Related 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)

### B.Sc. in Computer Engineering (Major Study)

UNIVERSITY OF TEHRAN

Tehran, Iran

Sep. 2019 - Jul. 2024

- Last 2 Year GPA: 4/4 · CGPA: 18.51/20 (3.85/4)
- Related Courses: Discrete Mathematics(20/20) · Engineering Probability and Statistics(17.8/20) Data Structures and Algorithms(20/20) · Machines and Language Theory(18.9/20) · Artificial Intelligence(19.1/20) Foundations of Information Technology(19.6/20) · Internet Engineering(20/20) · Large Language Models(20/20)

### Minor Study in Educational Science

UNIVERSITY OF TEHRAN

Tehran, Iran

Sep. 2021 - Jul. 2023

- CGPA: 19.3/20 (4/4)
- Related Courses: Educational Psychology(18.75/20) · Introduction to Psychological Tests (20/20) Patterns and Teaching Methods(20/20) · Basics of Qualitative and Quantitative Research Methods(19/20) The Principles of Curriculum Development(20/20) · Instructional Design(19/20)

### Diploma in Mathematics and Physics

ALLAME HELLI 4 HIGH SCHOOL

Tehran, Iran

Sep 2016 - Jul. 2019

- CGPA: 19.66/20
- As a 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

## Publications

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)

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)

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).

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*.

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*.

## Research Experience

### Digital Learning Lab

UNDER THE SUPERVISION OF PROF. M. WARSCHAUER

SWE Agent · LLMs Fine-tuning for Argumantative Essay Scoring (PERSUADE 2.0) · RAG integration to PapyrusAI

UC Irvine  
Jan. 2025 - Present

### Mathe Lab

UNDER THE SUPERVISION OF PROF. S. DOROUDI

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

UC Irvine  
Jan. 2025 - Present

### LaLA-Lab

UNDER THE SUPERVISION OF PROF. N. NIXON

AI Chatbot as a Collaborative Agent in Real-World Classroom

UC Irvine  
Apr. 2025 - Present

### Cognitive Systems Lab

UNDER THE SUPERVISION OF PROF. M. N. AHMAD ABADI

A new pedagogy model for Deep Learning · LLMs for Personalized Learning · Cognitive Processes in Human Learning · RLHF

University of Tehran  
May. 2023 - Dec. 2024

### Remote-University of Queensland

UNDER THE SUPERVISION OF PROF. R. GILLIES

Collaborative Learning · Interactive Learning Environments · Data Analysis using ATLAS.ti · Quantitative and Qualitative Research

University of Queensland  
Sep. 2021 - Dec. 2024

### UT NLP group

UNDER THE SUPERVISION OF PROF. M. J. DOUSTI & PROF. H. FAILI

Large Language Models · Retrieval-Augmented Generation · Fine-tuning (LoRA and Adapters) · Knowledge and Reasoning

University of Tehran  
Feb. 2024 - Dec. 2024

### Technology Enhanced Learning Lab (TELAB)

UNDER THE SUPERVISION OF PROF. F. TAGHIYAREH

Interactive Learning Object · Personalized Learning · IEEE-LOMs extraction · Avida-ED for generating LOs based on Genetic Algorithm

University of Tehran  
Mar. 2023 - Aug. 2023

### National Brain Centre

UNDER THE SUPERVISION OF PROF. F. S. MIRFAZELI

Autistic Brain and Learning Process · Automating ToM Assessment and Rehabilitation in Autism with a LLaMA-3-Powered Chatbot

Iran University of Medical Sciences  
Jul. 2024 - Sep. 2024

### Embodied Design Research Lab

UNDER THE SUPERVISION OF PROF. D. ABRAHAMSON

Reading a paper weekly · A nice feature of these meetings is that we always have the author(s) of the paper join us for more clarification.

University of California, Berkeley  
Jan. 2024 - Dec. 2024

## Teaching Experience

### COURSE MENTOR

Unity Game Development Course Mentor · SUMMER OF CODE AT ACM STUDENT CHAPTER

Jul. 2022 - Oct. 2022

### TEACHING ASSISTANT

Reinforcement Learning

Discrete Mathematics · HEAD TA

Internet Engineering · HEAD TA

Data Structures · SUPERVISOR

Engineering Probability and Statistics

Software Engineering · HEAD TA

Algorithm Design

Database Design

Electrical Circuit

## Honors & Awards

2019 **Ranked Top 0.2% in Konkour**, National Organization of Educational Testing (NOET) *Tehran, Iran*

2025 **TPC Mentorship Fellowship**, UCI School of Education *Irvine, USA*

## Academic Projects

Customized LMS to Enhance Learning Experience · Integration with Google Classroom and GPT-based Chatbot · Database Utilizes Postgres with Redis

## Discord Bot in a Discord Classroom (CSCL)

TA AGENT

Gathers Students' Activity · Monitors Server · Makes Interventions to Encourage Students to be Engaged and Collaborate

## IEEE-LOM Extractor

COMPATIBLE WITH PPTX, DOCX, PDF

Automated IEEE-LOM Extraction · NLP algorithms · Image and Video Processing

## Handwriting Recognition (HWR)

NEURAL NETWORK

Phase 1: Feed-Forward Neural Network from scratch · Phase 2: Neural Network model using Keras and TensorFlow

## Baloot

ONLINE SHOP WEBSITE

A Fully Functioning Amazon clone · Used Tools: CI/CD pipelines, JDBC, JUnit, Github Oauth apps

## Pong Game

ANDROID OS AND MOBILE PHONE SESNORS

Accelerometer and Gyroscope sensors · Real-World Formulas for the movement of the Ball and Paddle

# Work Experience

## Zendegiye Shad Publication

EDITOR

Tehran, Iran

Sep. 2019 - Sep. 2020

- Edited five Persian language books in the field of education, ensuring their clarity, consistency, and adherence to grammatical standards. My contributions to these books include "Implementation of Collaborative Learning," "New Approaches and Methods in Mathematics Education," "Effective Teaching-Learning in Higher Education," "Curriculum Evaluation," and "Co-Teaching."

# Certifications

Introduction to EdTech EDHEC BUSINESS SCHOOL

Sep. 2023

Generative AI with Large Language Models DEEPLARNING.AI

Jul. 2022

Fundamentals of Reinforcement Learning UNIVERSITY OF ALBERTA

Aug. 2023

LangChain: Chat with Your Data DEEPLARNING.AI

Jul. 2024

# Volunteer Activities

## Mathematics Teacher

TEACHER

Tehran, Iran

Sep. 2019 - Sep. 2021

- Engaged in voluntary teaching of mathematics to students who can't afford it.

# Skills

## Programming

Advanced: C/C++, Python, Java, Javascript

High Intermediate: C#, SQL, R, HTML/CSS

Intermediate: Verilog, Assembly

Familiar: Stata, GoLang, ShellScript

## Frameworks

LangChain, CrewAI, PydanticAI, PyTorch, TensorFlow

## Technologies

Git, Docker, Kubernetes, Maven, Makefile

## Web Development

React, TomCat, Spring

## Database

MySQL, Postgres, MongoDB, Neo4j, Redis, ElasticSearch

## Operating Systems

Linux, Windows, MacOS, Unix

## Qual Analysis Software

ATLAS.ti, Dedoose

# Languages

<b>Persian</b>	Native
<b>English</b>	Professional working proficiency · TOEFL: 97/120 [R:25, L:23, S: 23, W:26] (Oct. 2023)
<b>Azerbaijani</b>	Fluent
<b>Kurmanji</b>	Familiar
<b>Arabic</b>	Basic