

Mohammad Mahdi Abootorabi

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For comprehensive insights into each section, kindly refer to my Homepage.

Education

The University of British Columbia

MASTER OF APPLIED SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING

- Under the supervision of Professor Purang Abolmaesumi

Vancouver, Canada

Sep. 2025 - Aug. 2027 (expected)

Sharif University of Technology (SUT)

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

- Overall GPA: 3.93/4.00 (Average: **19.38/20**)
- Major GPA: 3.97/4.00 (Average: **19.73/20**)

Tehran, Iran

Sep. 2019 - Feb. 2024

Allameh Helli 10 High School (NODET)

MATHEMATICS AND PHYSICS DIPLOMA

- Overall GPA: 4.00/4.00 (Average: **19.81/20**)

Tehran, Iran

Sep. 2016 - Jul. 2019

Research Interests

- Natural Language Processing (NLP)
- Multimodal Learning
- Representation Learning & Information Retrieval
- AI for Healthcare

Publications

- M. M. Abootorabi and E. Asgari. Clasp: Contrastive language-speech pretraining for multilingual multimodal information retrieval. In *47th European Conference on Information Retrieval (ECIR2025)*, Lucca, Italy, April 2025 [arXiv](#) [Springer Nature](#) [ACM Digital Library](#) [Website](#) [Models](#) [Newly Introduced Dataset](#) [Code](#)
- 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. In *Findings of the Association for Computational Linguistics: ACL 2025*, pages 16776–16809, Vienna, Austria, July 2025 [ACL Anthology](#) [Github](#) [Website](#)
- M. M. Abootorabi, O. Ghahroodi, P. S. Zahraei, H. Behzadasl, A. Mirrokni, M. Salimipannah, A. Rasouli, B. Behzadipour, S. Azarnoush, B. Maleki, E. Sadraiye, K. K. Feriz, M. T. Nahad, A. Moghadasi, A. E. Abianeh, N. Nazar, H. R. Rabiee, M. S. Baghshah, M. Ahmadi, and E. Asgari. Generative ai for character animation: A comprehensive survey of techniques, applications, and future directions, April 2025 [arXiv](#) [Github](#) [Website](#)
- M. M. Abootorabi, A. Ghahramani Kure, M. Mohammadkhani, S. Elahimanesh, and M. A. Ali Panah. MultiMind at SemEval-2025 task 7: Crosslingual fact-checked claim retrieval via multi-source alignment. In *Proceedings of the 19th International Workshop on Semantic Evaluation (SemEval-2025)*, pages 2325–2335, Vienna, Austria, July 2025. Association for Computational Linguistics [ACL Anthology](#)
- M. M. Abootorabi, N. Ghazizadeh, S. A. Dalili, A. Ghahramani Kure, M. Dehghani, and E. Asgari. AIMA at SemEval-2024 task 10: History-based emotion recognition in Hindi-English code-mixed conversations. In *Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024)*, pages 1704–1710, Mexico City, Mexico, June 2024. Association for Computational Linguistics [ACL Anthology](#)
- A. Ghahramani Kure, M. Dehghani, M. M. Abootorabi, N. Ghazizadeh, S. A. Dalili, and E. Asgari. AIMA at SemEval-2024 task 3: Simple yet powerful emotion cause pair analysis. In *Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024)*, pages 1698–1703, Mexico City, Mexico, June 2024. Association for Computational Linguistics [ACL Anthology](#)

Honors & Awards

- Selected for the Konrad Zuse School (ELIZA) Scholarship**, to join a graduate school of excellence connecting German units of the European ELLIS network and Germany's leading experts in machine learning-driven AI. Germany
- Ranked in the top 9%**, of Computer Engineering students based on GPA at Sharif University of Technology. (**16** out of 190) Iran
- Ranked 10th**, among nearly 165,000 participants in the nationwide university entrance exam (Konkour) in the Mathematics Branch, securing a fully funded B.Sc. (tuition fee waiver) period in Iran. Iran
- Admitted to Allameh Helli Middle School**, among nearly 80,000 students under the supervision of the National Organization for Developing Exceptional Talents (NODET). Iran

Professional Experience

Saarland University

RESEARCH ASSISTANT

- Enhance semantic gesture understanding and representation from video by designing novel methods.
- Submit a publication related to this research in the near future.

June. 2025 – Sep. 2025

Supervisor: Prof. Vera Demberg

Qatar Computing Research Institute (QCRI)

REMOTE RESEARCH ASSISTANT (VOLUNTARY, UNPAID)

- Write surveys on multimodal RAG and generative AI for animated characters.
- Enhance large vision-language models for the Arabic language.

July. 2024 – Sep. 2025

Supervisor: Dr. Ehsanedin Asgari

Imperial College London

REMOTE RESEARCH ASSISTANT (VOLUNTARY, UNPAID)

- Develop an LLM-based therapist chatbot for Persian, equipped with SAT (Self-Attachment Technique) capabilities.

Sep. 2024 – Sep. 2025

Supervisor: Prof. Abbas Edalat

Sharif University of Technology

RESEARCH ASSISTANT (VOLUNTARY, UNPAID)

- Design a shared encoder for speech and language to create rich representations and bypass automatic speech recognition in various tasks.

Jan. 2023 – Feb. 2024

Supervisor: Dr. Ehsaneddin Asgari

University of New South Wales

REMOTE RESEARCH ASSISTANT (VOLUNTARY, UNPAID, SUMMER INTERNSHIP)

- Design a model to automate and enhance medical report generation for Fundus Fluorescein Angiography images.

June. 2023 – Sep. 2023

Supervisor: Dr. Imran Razzak

Yektanet Technology Company

SOFTWARE ENGINEER

- Implement features in a large-scale service and mentor fresh software engineers to support their professional growth.
- Handle site reliability engineering tasks, including server maintenance and performance monitoring.
- Design efficient data storage methods and work with databases and architectures such as Redis master-slave to manage high request volumes.

Oct. 2020 - Oct. 2021

Languages

- Persian:** Native
- English:** Advanced
 - TOEFL iBT at Test Center: 101** (20 Sep. 2023) Reading: **28**, Listening: **27**, Speaking: **22**, Writing: **24**
 - GRE General:** (10 Nov. 2023) Quantitative Reasoning: **170**, Verbal Reasoning: **148**, Analytical Writing: **4**

Notable Courses

Natural Language Processing *	20/20	Machine Learning *	20/20
Artificial Intelligence	20/20	Linear Algebra	20/20
Modern Information Retrieval	20/20	Computer Simulation	20/20
Design Algorithms	20/20	Compiler Design	20/20

* Graduate Course

Skills

Programming Languages	Python, Java, C, C++, Android, HTML, JavaScript
Libraries	NumPy, PyTorch, Scikit-Learn, Transformers, NLTK, SciPy, Pandas
Frameworks	Django, Django REST
Databases	PostgreSQL, Redis, MongoDB
Operating Systems	Linux (Ubuntu), Microsoft Windows, macOS
Other Technologies	Git, Celery, RabbitMQ, Jupyter Notebook, LaTeX, Docker, Trello, Notion, Prompt Engineering
Soft Skills	Teamwork, Self-Learning, Problem Solving, Creativity, Flexibility, Mentorship, Willingness to Learn

*Experienced skills are indicated using bold font.

Teaching Assistant Experience

Artificial Intelligence (×3)

Prof. Mohammad Hossein Rohban (×2)
Prof. GholamReza GhassemSani

- Designing & Grading Assignments
- Designing Questions for Mid-terms

Fall 2023, Spring 2023, Spring 2022

Compiler Design (Head TA) (×5)

Prof. GholamReza GhassemSani

- Organizing Other Assistants
- Correcting Mid-term & Final Exams
- Designing & Grading Assignments

Spring 2024, Fall 2023, Spring 2023, Fall 2022, Spring 2022

Engineering Probability & Statistics

Dr. Ali Sharifi-Zarchi

- Designing a Practical Assignment
- Grading a Practical Assignment

Fall 2022

Modern Information Retrieval (×3)

Prof. Mahdiah Soleymani Baghshah
Prof. Hamid Beigy (×2)

- Designing & Grading Assignments
- Designing & Grading a Quiz

Spring 2023, Fall 2022

Data Structures & Algorithms (×2)

Prof. Masoud Seddighin
Dr. Mahdi Safarnejad-Boroujeni

- Conducting Workshops
- Revising & Selecting Assignments
- Designing & Grading Assignments

Spring 2022, Fall 2021

Advanced Programming (Head TA)

Dr. Vahid Salmani

- Organizing Other Assistants
- Grading Some Practical Assignments

Fall 2020

Linear Algebra (×3)

Prof. Hamid R. Rabiee
Ms. Maryam Ramezani

- Designing & Grading Assignments
- Designing & Grading a Practical Project
- Designing & Revising Lecture Slides

Spring 2023, Fall 2022, Spring 2022

Computer Simulation (×2)

Prof. Bardia Safaei

- Designing & Grading Assignments
- Designing & Grading a Practical Project

Spring 2023, Spring 2022

Hardware-related Courses

Dr. Laleh Arshadi

- Computer Architecture (×2)
- Computer Structure & Machine Language
- Logic Design

Spring 2023, Fall 2022, Spring 2022, Fall 2021

Academic Service & Volunteer Activities

Volunteer Staff at ACL 2025 Conference

Summer 2025

Assisted in organizing the conference by coordinating presentations and poster sessions, and supporting attendee registration.

Career Guidance Session at Allameh Helli High School

Spring 2023

Contributed to the Creation and Development of Persian Wikipedia Pages for Key Machine Learning Concepts

Fall 2022

Contributed to the expansion of machine learning knowledge in the Persian language by creating a Wikipedia page for the concept of Knowledge Distillation and developing an existing page on Autoencoders.

The pages can be accessed at the following links: ([Knowledge Distillation Page Link](#)) and ([Autoencoder Page Link](#))

Markov Decision Processes Lecture Note ([Note Link](#))

Fall 2021

Authored a comprehensive lecture note on Markov Decision Processes for the AI Group's website at our university, providing a self-learning resource for individuals interested in this concept.

"Made In Lobby" Presentation & Workshop Hosting

Summer 2021

Conducted a presentation and workshop on Django and the REST architectural style for students at Sharif University. This session provided insights into the responsibilities of software engineers and back-end developers and offered an introduction to the basic concepts of Django.

ICPC Staff Member

Spring 2020

Served as a staff member in preparing for the International Collegiate Programming Contest (ICPC), contributing to the execution of the event.

Remarkable Academic Projects

Health Retrieval Search Engine [Source Code](#)

Spring 2022

An advanced search engine designed for efficient retrieval and organization of health and medical-related content; uses techniques like Boolean search, TF-IDF, FastText, Elasticsearch, and Transformers models. It has a user-friendly interface and can be deployed on online servers.

Bias detection & De-biasing in Language Models [Source Code](#)

Winter 2022

This project focuses on the detection and mitigation of various biases, such as gender and ethnic biases, in diverse language models, including those for multiple languages and multilingual models. A significant aspect of the project is the development of de-biasing techniques specifically tailored for Persian language models.

Personal Information Hider [Source Code](#)

Spring 2022

A Python package designed to enhance privacy by concealing personal information in text files. It uses POS tagging and regex-based solutions to effectively remove identifiable details like names, addresses, URLs, email addresses, and more.

News Classification, Summarization, & Question Answering System [Source Code](#)

Spring 2023

A comprehensive system for Persian news analysis, focusing on classification, question answering, and summarization. It classifies articles using TF-IDF and transformer models, generates relevant questions and answers, and provides fine-tuned summarization of news content.

Resume Parser [Source Code](#)

Winter 2022

A Python package, designed as an automated resume parser, extracts valuable information from multiple CVs and stores it in a CSV file. Currently supporting Persian CVs, it enhances Applicant Tracking Systems' review capabilities.

Memo Reminder Application [Source Code](#)

Spring 2021

MemoReminder is a mobile application that allows you to share and relive your best moments. It is available on both iOS and Android platforms.

Extra Curricular Activities

• Photography

• Playing Padel

• Playing Video Games

• Athletics