

MohammadJavad Vaez

Curriculum Vitae

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🔗 [Google Scholar](#) 🌐 [Website](#)



For the **most updated CV**, visit [here](#).

Education

- 2022–Now **M.Sc. in Computer Science (AI Specialty)**, *University of Tehran*, GPA: 3.82/4
- [University of Tehran is ranked first for computer science in Iran, based on the U.S.News ranking.](#)
 - **Thesis:** Sinusoidal Trainable Activation Functions for Implicit Neural Representation
- 2018–2022 **B.Sc. in Mathematics (Second Major)**, *University of Isfahan*, GPA: 3.84/4
- 2017–2022 **B.Sc. in Computer Engineering (Hardware Specialty)**, *University of Isfahan*, GPA: 3.75/4
- Final Project: Applications of Group Theory and Automata Theory in Faster Searching of State Space

Research Experience

- 2024–2025 **Analysis of the neurons of larval zebrafish**,
In collaboration with Dr. [Dominic Burrows](#)
- 2024–2025 **Sinusoidal Trainable Activation Functions for Implicit Neural Representation**, [Paper Link](#) - Under review for ICML 2025
- 2024 **An alternative approach to inverse \mathcal{Z} -transform of rational functions**,
[Paper Link](#) - Accepted by the *Journal of Engineering Mathematics* (scheduled for publication)
- [Implementation GitHub Repository](#)
- 2021–2023 **Random generation of group elements using combinatorial group theory and automata theory**, [Paper Link](#) - To be submitted to a prestigious journal

Honors and Awards

- 2024 **Reviewer**, ICLR 2025 (International Conference on Learning Representations) – one of the highest-impact conferences in machine learning and AI research.
- 2022 **First Rank among Math Students (Class of 2017 and 2018)**, University of Isfahan.
- 2022 **Admitted to the Master's Program in Mathematics, Sharif University of Technology**, through direct admission based on academic excellence; declined the offer.
- 2020 \$1.2 Reward Check from Donald Knuth for identifying a mistake in his book, *The Art of Computer Programming*¹
- [Link of explanation](#)

¹ I included this in my CV because it was a unique and memorable reward.

Teaching Experience

Fall 2024 **TA for Advanced Theory of Algorithms**, University of Tehran, Instructor: Dr. Morteza Mohammad-Noori

[This playlist](#) includes presentations (in Persian) delivered by the students of this course.

Fall 2018 **TA for Calculus II**, University of Isfahan, Instructor: Dr. Ehsan Hakimian

Computer Skills

C/C++, Matlab, Python, \LaTeX , HTML, CSS

Hardware Hspice, VHDL, Proteus, AVR Microcontrollers
Engineering

Software [GitHub Project Management and Collaboration](#)
Engineering

Languages

Persian Native

English Fluent, IELTS score: 7 (Speaking: 7.5)

French Just started to learn

Important Projects or Presentations

Realtime Embedded Systems: [LinkedIn Post](#)

Buchberger Algorithm and Gröbner Basis in Inverse Kinematics of Manipulators: [YouTube Video \(Persian presentation\)](#)

Persian presentation of the paper "Learning the travelling salesperson problem requires rethinking generalization": [YouTube Video](#)

Presentation of the paper "BrainGB: A Benchmark for Brain Network Analysis with Graph Neural Networks": [PDF File](#)

Generally, this is my YouTube account on which I upload my presentations: youtube.com/@mohammadjavadaez

This is my Stack Exchange account and you can see my activity: [My Activity on Stack Exchange](#)

Research Interests

Areas of Expertise:

- Machine Learning
- Neural Networks
- Graph Neural Networks (GNN)
- Signal Processing
- Randomized Algorithms
- Automata Theory
- Control Theory
- Stochastic Mathematics (including Probabilistic Graphical Models, Stochastic Cellular Automata, etc.)

Areas of Interest:











- Reinforcement Learning ([certificate](#))
- Bioinformatics
- Quantum Computing
- Geometric Deep Learning
- Computational Neuroscience

Creative Works

I compose Persian poems. You can read some of my works [here](#).

Relevant A⁺ and A Scores

Score	Courses
20/20	Artificial Intelligence & Expert Systems, Calculus II, Engineering Mathematics, Linear Control Systems, Fundamentals of Math. Analysis, Principles of Compiler Design, MATLAB Programming Workshop, Preliminary Number Theory
19.7/20	Statistical Methods
19.6/20	Local Differential Geometry
19.5/20	Fundamentals of Probability, Math. Analysis, Complex Functions, Very Large Scale Integration (VLSI), Computer Architecture Project, Digital Electronics Lab.
19.3/20	Presentation & Research Method, Data Transfer
19.25/20	Engineering Statistics & Probability, Calculus I, Fundamentals of Computer & Programming, Theory of Coding
19.06/20	Basic Physics II Lab.
19/20	Stochastic Processes, Probability I, Differential Equations, Algebra, Realtime Embedded Systems
18.5/20	Electrical Circuits, Physics II
18.3/20	Electronic Circuits
18.1/20	Advanced Theory of Algorithms
18/20	Partial Differential Equations (PDE), Manifold Geometry, Math. Software, Physics I, Electronic Circuits Lab.
17.85/20	Computer Aided Design Tools Lab.
17.78/20	Linear Optimization
17.75/20	Fundamentals of Economics
17.5/20	Advanced Computation Theory, Fundamentals of Algebra
17.4/20	Fundamentals of Computability Theory
17.3/20	Logic Circuits
17.25/20	Robotics
17.22/20	Interface Circuits Lab.
17.2/20	Image Processing
17.12/20	Algorithm Analysis & Design
17/20	Numerical Linear Algebra, Digital Electronics
16.75/20	Natural Language Processing
16.5/20	Microprocessors & Assembly Language, Computer Networks
16.1/20	Data Structures
16/20	Fundamentals of Matrix & Linear Algebra, Fundamentals of Math. Sciences

	AI
	Algorithms
	Linear Algebra
	Abstract Algebra
	Computer Networks
	Hardware Engineering
	Mathematical Analysis
	Geometry and Topology
	Probability and Statistics
	Theoretical Computer Science

Scores ≥ 18 are considered A⁺, and scores between 16 and 17.99 are considered A.