

MohammadJavad Vaez

Curriculum Vitae

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🔗 [Google Scholar](#)

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
- 2013–2017 **High School Diploma in Mathematics and Physics**, *National Organization for Development of Exceptional Talents (NODET)*

Publications?

- *Sinusoidal Trainable Activation Functions for Implicit Neural Representation:* Currently under review for an A* AI conference.
 - The submission is compliant with the conference's double-blind review process and has not been uploaded to *arXiv*.
- *An alternative approach to inverse \mathcal{Z} -transform of rational functions:*
 - [Paper Link](#) - under review of Journal of Engineering Mathematics
 - Implementation: [GitHub Repository](#)
- *Random generation of group elements using combinatorial group theory and automata theory, along with a hardware example:*
 - [Paper Link](#) - to be submitted in 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

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

[Link of explanation](#)

Teaching Experience

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

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)

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](#)

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

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:

- Bioinformatics
- Quantum Computing
- Geometric Deep Learning