

# MohammadJavad Vaez

## Curriculum Vitae

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🔗 [Google Scholar](#)

🌐 [Website](#)

### 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*<sup>1</sup>

[Link of explanation](#)

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

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## 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

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## Computer Skills

- C/C++, Matlab, Python,  $\LaTeX$ , HTML, CSS
- Hardware Hspice, VHDL, Proteus, AVR Microcontrollers
- Engineering
- Software [GitHub Project Management and Collaboration](#)
- Engineering

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## Languages

- Persian Native
- English Fluent, IELTS score: 7 (Speaking: 7.5)

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## 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](https://youtube.com/@mohammadjavadaez)
- This is my Stack Exchange account and you can see my activity: [My Activity on Stack Exchange](#)

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## 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