Amir Faraz Fazelifar

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Education

B.Sc. in Mathematics and Computer Science, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran 2023–Present
Expected Graduation: 2027
Current Cumulative Average: 15.26/20 (3.05/4.0)
Selected Coursework: Introduction to Computer & Programming, Advanced Programming & Workshop, Foundation of Mathematics, Foundation of Combinatorics, Probability & Introduction to Probability, Data Structures & Algorithms (in progress), Introduction to the Theory of Computation (in progress)

High School & Middle School: Rouzbeh Educational Complex, Tehran, Iran 2017–2023

Academic Achievements & Awards

- Achieved rank #652 in the Mathematics & Physics division and #51 in the English Language division of the Iranian "Konkour" (National University Entrance Exam), among hundreds of thousands of participants (2023).
- Qualified in the first stage of the National Mathematical Olympiad (2021) and the Computer Olympiad (2021 & 2022).
- Advanced to the second-to-last stage of the Kharazmi Science Fair, Iran's most reputable and challenging national science fair, known for its rigorous year-long assessments and requirement to present original inventions or research.

Research & Publications

Patent: Registered a patent for an innovative ECG caliper featuring advanced, highly precise measurement tools and novel functionalities not previously available, improving diagnostic accuracy and supporting advanced cardiological research.

Peer-Reviewed Publication:
Co-author: *"Electrocardiographic manifestations of pulmonary stenosis versus pulmonary hypertension"*, Journal of Electrocardiology, Volume 81, November–December 2023, Pages 117–122. Contributed by employing the patented ECG caliper for enhanced data analysis and measurement precision.

Ongoing Research (Healthcare + Generative AI):
Engaged in multiple projects at the intersection of AI, healthcare, and generative models, focusing on retrieval-augmented generation (RAG) frameworks, prompt engineering, and LLM-based solutions for diagnostic insights. Anticipated first-author manuscript submission by Spring 2025, detailing the design and validation of a generative AI-driven diagnostic algorithm for cardiovascular conditions.

Work & Teaching Experience

Intern, Shaheed Rajaie Cardiovascular Medical and Research Center (Summer 2024–Present, Tehran, Iran)

- Applying generative AI, RAG frameworks, and prompt engineering to analyze and interpret cardiovascular patient data.
- Collaborating with cardiologists, data scientists, and researchers to implement LLM-based solutions enhancing diagnostic accuracy and clinical decision support.
- Utilizing advanced ML libraries, APIs, and healthcare datasets to develop scalable, transparent AI tools for medical research.

Instructor, Rouzbeh Educational Complex (2 terms, Tehran, Iran)

- Taught introductory computer science and Python programming to high school students.
- Developed lesson plans, coding challenges, and introduced foundational AI concepts to inspire exploration of emerging technologies.
- Mentored students in problem-solving and critical thinking, fostering a passion for innovation.

Extracurricular Activities & Leadership

"52 Weeks of Generative AI" Challenge (Ongoing)

- Researching and developing new generative AI projects each week, sharing open-source tutorials on GitHub.
- Producing educational LinkedIn content, fostering community learning, and demonstrating technical progress in prompt engineering and AI integration.

Artistic & Cultural Pursuits

- Electric guitar player, exploring various music genres.
- Avid book reader and writer, enhancing analytical thinking, creativity, and communication skills.

Skills & Languages

Technical Skills:

- **Programming & Scripting:** Python, C, C++, Java, Java for Android development, C# for Unity, APIs
- **AI & Machine Learning:** Generative AI (RAG, prompt engineering, LLM integration, model fine-tuning), traditional ML techniques
- **Data Analysis & Visualization:** Statistical analysis, data cleaning, visualization
- **Research Tools:** Academic writing, literature review
- **Certifications:** Certified in Android Programming, Certified in Machine Learning

Languages: Farsi (Native), English (Full Proficiency), German (B2 Level), French (Basic), Japanese (Intermediate; 2-year Duolingo streak).