Seyed Alireza Fatemi Jahromi

Software & Machine Learning Engineer, Game Designer & Developer

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INTERESTS

Game Design & Development, AR/VR, Visual Computing, Software & Web Development, Machine Learning, Generative AI, Photogrammetry, Graphics Programming

EDUCATION

- **Aalto University, Espoo, Finland**
  Master of Science in Computer Science (Big Data and Large-Scale Computing) GPA: 4.7/5
  Minors: Game Design and Production, Math&Arts
- **Sharif University of Technology, Tehran, Iran**
  Bachelor of Science in Computer Engineering   GPA: 18.60/20

PROFFESIONAL DEVELOPMENT

- **Human-aligned AI Summer School**   Prague, Czech Republic *22-25 July 2025*
- **Touch Sensing and Processing Summer School**   Dresden, Germany *2-6 Sep 2024*
- **Human-aligned AI Summer School**   Prague, Czech Republic *17-20 July 2024*
- **The ELLIS Summer School on Collaborative and Generative AI (CoGenAI)**
  Espoo, Finland *1-5 July 2024*
- **The 6th International Summer School on Artificial Intelligence and Games**
  Valletta, Malta *17-21 June 2024*

TECHNICAL STRENGTHS

Programming Languages	C, C++, C#, Python, Java, Kotlin, JavaScript, TypeScript, Luau
Machine Learning	PyTorch, Transformers, scikit-learn, pandas, NumPy
Front-end	React, ReactNative, Next, Native Android
Back-end	gRPC, REST, GraphQL, Docker, Flask, Django, Kafka, OpenSearch
Databases	SQL, DynamoDB, MongoDB
3D Modeling	Blender, Fusion 360, Reality Capture
Game Engines	Unity, Unreal Engine 5

RESEARCH & WORK EXPERIENCE

HypeHype, Helsinki, Finland
Game Engine Programmer & Machine Learning Engineer — Nov 2022 - Current

My responsibilities include implementing features in the engine (implementing nodes in the game editor and leading the Luau scripting feature and API), prototyping with LLMs and generative AI (LLM powered NPCs and logic in games and the AI chat for live editing games), improving the asset semantic search pipeline, and implementing various backend features (scene generation and game server).

Nokia Advanced Technology Group, Espoo, Finland
Software Developer Trainee — May 2022 - Nov 2022

I worked as a trainee in the ATG group at Nokia. My work was related to Augmented Reality and Visual Localization. I worked with WebXR, Android ARCore (Kotlin and SceneView), and Unity ARFoundation.

Aalto University, Espoo, Finland
Research Assistant — Jan 2022 - June 2022

I worked as a research assistant under the supervision of Prof. Jaakko Lehtinen. My research was related to generative modeling with medical images.

University of Toronto, Dynamic Graphics Project Lab, Remote
Research Assistant — Summer 2021

I worked as a research assistant under the supervision of Prof. Alec Jacobson. My topic of research was about Geometry Processing and Computer Graphics combined with Machine Learning.

Robust and Interpretable Machine Learning Lab, Sharif University of Technology, Tehran
Research Assistant — Summer 2020 - Spring 2021

I worked on my undergraduate thesis in the Robust and Interpretable Machine Learning Lab under the supervision of Prof. Rohban. My thesis was about the use of Semi-Supervised Learning and Self-Supervised Learning in the context of Adversarial Robustness.

Iran's National Elites Foundation, Tehran, Iran
Research Assistant & Software Developer — Spring 2019 - Summer 2020 (18 months)

I was a member of a project funded by Iran's National Elites Foundation focused on Medical Image Analysis using Deep Learning. My main objective in this project was to research state-of-the-art Deep Learning and Computer Vision methods and apply them to different applications in Medical Image Analysis. My research was focused on the classification and segmentation of different types of cancer in digital pathology images. I worked with gigapixel whole-slide images from various organs such as the Liver, Colon, and Prostate. I also worked on classifying and segmenting COVID-19 patients' CT Scan images and 3D brain MRI images. I gained experience working with different learning paradigms such as Self-Supervised Learning, Semi-Supervised Learning, and Multiple-Instance Learning.

During this time, I also led a software team of two plus myself as a side-project. We developed a follow-up automation software used to discharge patients and help hospitals and clinics stay in touch with their patients and coordinate patients' subsequent check-ups. It also provided patients with educational content. We developed this system for Sina Hospital. Some of the technologies we used in this project comprise React, Next.js, GraphQL, WordPress, Django, and Firebase.

Iran's National Elites Foundation, Tehran, Iran
Front-end Web Developer — Spring 2019 - Summer 2019 (6 months)

I was a member of a project funded by Iran's National Elites Foundation focused on developing a real-time locating system. I worked as a front-end web developer, and my main task was to create the admin panel of this system. Some of the technologies I used in this project comprise React, Redux, and Redux-Saga.

Rahnema College Internship, Tehran, Iran
Software Engineer & Team Leader — Summer 2018

During this 7-week internship program, I gained experience in the various areas of Software Development such as Scrum, UI/UX, Full Stack Development, etc.

TEACHING EXPERIENCE

Data Structures and Algorithms
Teaching Assistant — Fall 2021   *Department of Computer Science, Aalto University*

Basics in Programming Y1
Teaching Assistant — Fall 2021   *Department of Computer Science, Aalto University*

Database Design
Teaching Assistant — Fall 2020   *Department of Computer Engineering, Sharif University of Technology*

HONORS

- Winner of 1st place in Huawei Tech Arena challenge in Junction 2024.   *Fall 2024*
- Winner of 1st place in Game AI Jam in The 6th International Summer School on Artificial Intelligence and Games.   *Summer 2024*
- Winner of 2nd place in Dash Hackathon 2023, ABB challenge.   *Fall 2022*
- Winner of 1st place in Huawei Tech Arena 3D Hackathon.   *Fall 2022*
- Winner of 2nd place in Ultrahack XR + 5G mmW Hackathon Challenge in Tampere.   *Fall 2022*
- Recipient of the outstanding achievement award for outstanding performance in the Cloud Software and Systems course at Aalto CS.   *Fall 2021*
- Recipient of the grant and membership of **Iran's National Elites Foundation** for outstanding academic success.   *Summer 2016 - 2021*
- Ranked 5th in PAIP 2020 Challenge. I was one of the two members of Sharif HooshPardaz Team. Behroozi. I presented our method at the AI Pathology Challenge Workshop at the Virtual KOSOMBE Conference.   *Fall-2020*
- Ranked 5th in Multi-organ Nuclei Segmentation and Classification (MoNuSAC) 2020 Challenge and ranked 3rd in the Post-Challenge Leaderboard. MoNuSAC 2020 Challenge was an official satellite event of ISBI 2020. I was one of the three members of Sharif HooshPardaz Team. I presented our method at the MoNuSAC 2020 Workshop.   *Spring-2020*
- Ranked 3rd in the Eleventh Sharif Festival of Entrepreneurship and Business Development (VC cup). I was a member of Sharif HooshPardaz Team.   *Winter-2020*
- Reached the final stage of Artificial Intelligence Challenge in Medical Imaging focused on Intelligent Assessment of Imaging Biomarkers of Dementia.   *Fall-2019*
- Ranked 8th in Gleason 2019 Challenge, one of the three challenges under the MICCAI 2019 Grand Challenge for Pathology. I presented our method at the Gleason 2019 Workshop. *Fall 2019*
- Ranked 3rd in the First National EEG Data Analysis Competition with Clinical Applications organized by National Brain Mapping Lab (NBML).   *Summer-2019*
- Ranked 1st in the Third National Sharif ICT Challenge (Fintech) among 65 chosen teams. *Summer 2019*
- Ranked 12th in the Fourth National Code Cup Contest among approximately 3100 participants.   *Fall 2018*

For more information, please visit my website at seyedalirezafatemi.github.io.