

Arash Goodarzi

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Profile

I am a dedicated interaction designer and full-stack developer with a passion for building and optimizing interactive systems, websites, and applications. My research pertains to understanding how Human-Computer Interaction (HCI), Extended Reality (XR), and Artificial Intelligence (AI) technologies mediate user interactions and experiences. I approach my work through a multidisciplinary lens that integrates computer science and AI with HCI approaches. I am particularly interested in developing innovative interaction techniques within immersive environments, aiming to create solutions that enhance user experience and interaction effectiveness.

Research Interests

Human-Computer Interaction (HCI), HCI Theory, Extended Reality (XR), Interaction Techniques, Gain-Based Interaction, VR/AR Redirection Techniques, Human-AI Interaction (HAII), Artificial Intelligence (AI)

Education

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| MSc Human-Computer Interaction and User Experience , Umeå University | 2023 – 2025 |
| • GPA: Distinction | |
| BSc Computer Engineering (Software) , Shiraz Bahonar University | 2013 – 2016 |
| • GPA: 3.5/4.0 | |

Technical and Research Skills

Programming & Development: Python, C#, TypeScript, SQL, Node.js, NestJS, ASP.NET Core, React.js
Data & AI: Machine Learning, Reinforcement Learning, Data Analysis & Visualization
XR & Game Engines: Unity Engine, Virtual Reality (VR), Mixed Reality (MR)
Design & Research: Prototyping, UX Research, Mixed-Methods (Qualitative + Quantitative)
Tools & DevOps: Docker, Git, Linux
Soft Skills: Teamwork, Attention to Detail, Critical Thinking, Problem Solving, Creativity

Experience

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| Teaching Assistant , Umeå University | Jan 2024 – Sep 2025 |
| • As a teaching assistant in the Department of Computing Science, I contributed to the following courses, providing lecturing, coding tutoring, grading, and educational content design: <ul style="list-style-type: none">– Human-Computer Interaction (Autumn 2024)– Data Structures and Algorithms (Python) (Spring 2024 & 2025)– Interaction Techniques (Spring 2024 & 2025)– Development of Mobile Applications (Spring & Summer 2025) | |
| • arashg.dev/teaching | |
| Full-Stack Web Developer , Danish Trading Company | Aug 2021 – Dec 2023 |
| • Built a full-scale business management platform from scratch, taking it from prototype to a production system that manages over \$1M in monthly sales. | |
| • Integrated sales, marketing, analytics, reporting, billing/invoicing, and inventory management, streamlining operations and enabling data-driven decision-making. | |
| • Technologies: NestJS, React, TypeScript, Chakra UI, MySQL, TypeORM, mTLS, Docker. | |
| • arashg.dev/projects/danish-business-management-platform | |
| Full-Stack Developer & Co-Founder , Grasp Startup | Apr 2021 – Aug 2021 |
| • Collaborated with two co-founders to develop an early-stage startup, contributing to product ideation, technical architecture, and documentation. | |
| • Built Edu-Editor , a block-based rich text editor prototype for Grasp: <ul style="list-style-type: none">– github.com/kiaksarg/edu-editor | |
| Software Developer , Vesta System | Feb 2016 – Mar 2019 |
| • Built desktop and web applications using C# and ASP.NET Core, including a multilingual news/blog system, | |

- an office automation platform for government services, and a Telegram channel manager desktop application.
- Technologies: ASP.NET Core, Entity Framework, MSSQL/MySQL, Context Per Request, Unit of Work, WinForms.
 - Selected projects:
 - arashg.dev/projects/asp-net-multilingual-news-blog-system
 - arashg.dev/projects/automation-platform
 - github.com/kiaksarg/Telegram-Channel-Manager-Desktop

Projects

ViewShift – Interactive and Adaptive Rotation Gains in Seated VR Sep 2025

- Master's thesis (Umeå University): Designed and implemented (Unity, C#) two novel head rotation amplification techniques in VR (user-empowered Interactive & Adaptive).
- Conducted a mixed-methods user study ($N = 31$) using quantitative metrics (completion time, errors, workload, etc.) and qualitative interviews (thematic analysis) to evaluate user experience.
- arashg.dev/projects/rotation-gains

Blossom-Buddy Dec 2023

- With a Research through Design (RtD) approach, I developed *Blossom-Buddy*, an interactive flowerpot exploring how technology can shape users' behaviors through empathy and care for living things. It encourages users to achieve their goals and build positive habits by linking task completion to plant well-being.
- Techniques used include User Interviews, User Testing, Experience Prototyping, and the Wizard of Oz.
- arashg.dev/projects/blossom-buddy

Transaction Per Request in NestJS Jul 2022

- Implemented Single Transaction per Request in NestJS.
- github.com/kiaksarg/nestjs-transaction-per-request

NestJS GraphQL Best Practice Jun 2022

- Code-first GraphQL API with NestJS and TypeORM.
- Features: cursor-based and offset-based pagination, sorting, filtering, full-text search, DB seeding, DataLoader n+1 solution, and advanced relations.
- Repository: github.com/kiaksarg/nestjs-graphql-tolkien

Edu-Editor: Block-Based Rich Text Editor Jul 2021

- Built an extensible block-based rich text editor on Slate.js.
- Repository: github.com/kiaksarg/edu-editor, Demo

Awards and Honors

- Winner, course-wide **Artificial Intelligence: Methods & Applications (HT24)** Reinforcement Learning Tournament — Department of Computing Science, Umeå University, Jan 2025.
Certificate
- Awarded full funding for BSc in Computer Engineering (2013–2016) after ranking 111th out of 27,532 candidates in the Nationwide Bachelor's Entrance Exam (Code 210), National Organization for Educational Testing, Iran.

References

- **Viktor Kaptelinin** — Professor, Department of Informatics, Umeå University
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- **Anders Lundström** — Associate Professor, Department of Informatics, Umeå University
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