Ali Ghanati

Full Stack Software Engineer

Eindhoven, Netherlands

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ABOUT ME

Top 0.1% engineering graduate with a lifelong curiosity for system internals. Currently pursuing an M.Sc. in Embedded Systems. Passionate about algorithms, game theory, and building reliable, high-performance software.

TECHNICAL SKILLS

Concepts:

- OOP
- Design Patterns
- Algorithms

Languages:

- TypeScript: Advanced
- Java: Advanced
- C/C++: Advanced
- Python: Advanced

Tools:

- Git: Advanced
- Linux/Bash: Intermediate
- Docker: Advanced
- PostgreSQL: Intermediate
- NGINX: Beginner

RELEVANT COURSES

- Software Evolution
- Program Verification Techniques
- Automated Reasoning
- Exact Algorithms for NP-Hard Problems
- System Design Engineering
- System Validation
- Real-Time Systems

Languages

- Persian: Native
- English: C1
- Dutch: A1

EDUCATION

M.Sc. in Embedded Systems **Sep 2024 – Present (expected 2026)**

Eindhoven University of Technology

Thesis Title: Breaking Change Detection Using Grammar Exploration

- Developing a grammar-based fuzzing tool to detect syntactic breaking changes in software.

B.Sc. in Computer Engineering **Sep 2018 - Aug 2023**

Sharif University of Technology (Rank #1 University in Iran)

Thesis Title: Design and Implementation of Local IoT Gateway Protocols on Microcontroller-based Systems

WORK EXPERIENCE

Smit Thermal Solutions

Tester **Sep 2024 – Mar 2025 (Part-time)**

- Executed safety-critical validation for industrial thermal processing control systems.
- Analysed the platform's model-driven code generation architecture to identify edge cases, ensuring rigorous coverage during manual safety validation.

Akka

Software Engineer **Sep 2023 – Aug 2024**

- Engineered high-throughput Nest.js APIs for a decentralized exchange aggregator.
- Architected comprehensive test suites using Jest, integrated into a strict CI/CD GitHub Actions pipeline.
- Built automated data collection scripts to drive backend performance analytics.

Kangonio

Full Stack Engineer Intern **Jun 2022 – Oct 2023 (Part-time)**

- Maintained and tested existing e-commerce platform features.

Twelve Group

Full Stack Engineer Intern **Jun 2022 – Oct 2023 (Part-time)**

- Rapidly acquired PHP proficiency to reverse-engineer legacy database structures, developing a custom migration plugin with 100% data integrity.

Asan Bourse

Frontend Developer Intern **Sep 2021 – May 2022 (Part-time)**

- Developed and tested a mobile-first PWA for market event alerts.

Weblite

Full Stack Developer Intern **Dec 2020 – May 2021 (Part-time)**

- Developed a real-time multiplayer UNO game module integrated into a messenger platform.

HONORS & ACHIEVEMENTS

- Ranked 60th among 144,000 (top 0.1%) in national university entrance exam
- Member of Iran's National Elites Foundation (INEF)
- Member of National Organization for Development of Exceptional Talents (NODET)

PROJECTS

- **Gamein**
  - Architected a scalable backend system, assuming Lead responsibilities to ensure timely delivery for 3,000+ concurrent users.
  - Optimised system latency by offloading complex computations to the database layer, significantly reducing API response times.
  - Deployed NGINX & Docker containers to streamline development workflows and ensure consistent production environments.
  - Collaborated with Game Design to analyse gameplay data, implementing logic to detect and prevent fraud in a competitive environment.
- **WSS Site**
  - Directed the redesign, deployment, and maintenance of an existing open source project.
  - Oversaw a student team while actively contributing to development.
  - Added new features and event data, and ensured CI/CD and test pipelines remained functional.
- **Webelopers**
  - Helped maintain an open source project for a student-run tech event.
  - Collaborated with frontend, backend, and DevOps developers.
  - Built UI components for event registration, team creation & selection, schedule display, and third-party login.
  - Integrated all components with backend APIs to ensure proper functionality.
- **Smart Home — Embedded Systems Course Project**
  - Built a home automation system with 3 Arduino modules and a Raspberry Pi as the central hub.
  - Programmed custom ESP8266 firmware in C to connect Arduino modules to Wi-Fi.
  - Created a dashboard for remote access and control.
- **Alter Tank**
  - Developed a 2D tank battle game using pure C and the SDL2 library.
  - Implemented custom physics logic and collision detection without relying on high-level game engines.

CERTIFICATIONS

- IBM DevOps and Software Engineering - Issued by IBM (Coursera)
- IBM Applied DevOps Engineering - Issued by IBM (Coursera)
- IBM Back-End Development - Issued by IBM (Coursera)
- Game Theory - Issued by Stanford University (Coursera)

VOLUNTEER SERVICES

- Multiple contributions on open source projects on GitHub, also worked as a maintainer in some repositories
- Member of Central Council of university's Literature & Poems Club for 3 years
- TA Python Lab Course (3 Semesters), EE Department
- Staff in multiple student-organised events spanning across CSE and IE Departments
- Editor for multiple magazines at Sharif University of Technology
- Presenter of programming workshops for freshman students