

MAHDI FATTAHKILANI

Senior Full Stack Engineer

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Professional Profile

Versatile senior software engineer with 8+ years of experience delivering production-ready backend and full-stack systems across fintech, e-commerce, logistics, internal enterprise tools and technology startups. Strong in Python, Java, JavaScript/TypeScript and Ruby, with hands-on expertise in API engineering, cloud deployment, microservices, secure authentication, database design, real-time systems, automated testing and technical leadership. Experienced in translating business requirements into scalable architecture, mentoring developers, improving legacy systems and building AI-assisted digital products from concept through prototype and deployment.

Professional Experience

Founder & Lead Engineer, *RubblePass AI*

2026 – Present

Remote

- Designed and built a mobile-first cleantech prototype for pre-demolition material assessment, recovery routing and QR-based digital material passports.
- Developed the product architecture, simulation model, material-data structure, impact calculations, business model and technical roadmap for an Istanbul-focused pilot.
- Combined AI-assisted estimation, uncertainty ranges, buyer/facility matching, chain-of-custody records and environmental reporting in one end-to-end workflow.

Software Engineer (Freelance), *Project-Based*

05/2021 – Present

Iran

- Delivered backend and full-stack solutions for startups and small businesses in finance, e-commerce and logistics.
- Built REST APIs and business services using Python (Django/Flask), Java (Spring Boot) and Node.js/Express; designed secure integration patterns for third-party systems.
- Developed React.js and Next.js dashboards, admin panels and operational tools with role-based workflows and responsive user interfaces.
- Integrated payment gateways, CRM and ERP systems; managed secure data exchange, authentication, reconciliation and technical documentation.
- Planned software architecture, automated testing, Docker-based deployment, AWS infrastructure and CI/CD workflows from development through release.

Senior Software Engineer, *Fintech Startup*

06/2019 – 04/2022

Cambodia

- Designed core backend services in Python using Django, Celery and PostgreSQL for transaction-heavy fintech workflows.
- Built customer-facing React.js dashboards with secure authentication, real-time updates and operational reporting.
- Integrated third-party payment APIs and implemented automated reconciliation processes to improve financial-data accuracy and operational control.
- Led a four-developer engineering team, managed sprint planning, code reviews, technical decisions and mentoring.
- Migrated legacy services to containerised microservices using Docker and AWS, improving maintainability and deployment consistency.

Backend Developer, Technology Solutions Firm

01/2017 – 04/2021

Iran

- Built REST APIs in Java with Spring Boot and integrated them with scalable MySQL data environments.
- Implemented automated testing with JUnit and Mockito, contributing to a 30% reduction in reported software defects.
- Collaborated with frontend engineers on React and Redux features, API contracts and end-to-end product delivery.
- Implemented role-based access control, encrypted data layers and secure B2B integration workflows.
- Produced API documentation, supported troubleshooting and improved code quality through reviews and refactoring.

Software Engineer (Full-Stack), Dubai IT Group

01/2015 – 12/2017

Dubai

- Developed internal business tools and dashboards using Ruby on Rails and Vue.js.
- Refactored a monolithic application into a modular architecture, improving deployment time by approximately 50%.
- Built real-time reporting features using WebSockets, background jobs and structured data-processing workflows.
- Created technical documentation and delivered onboarding sessions for new developers and technical users.
- Supported production releases, investigated application issues and coordinated fixes across backend and frontend components.

Education

Bachelor of Computer Engineering,

24/10/2014

Islamic Azad University, Tehran Science and Research Branch

Iran

GPA: 15.67/20

Technical Expertise

Programming

Python, Java, JavaScript (ES6+), TypeScript, Ruby, Go, PHP, Bash, SQL

Frontend

React.js, Next.js, Redux, Vue.js, HTML5, CSS3, responsive dashboards and admin systems

Cloud & DevOps

Docker, AWS EC2/S3/RDS, Git, GitHub Actions, Jenkins, CI/CD pipelines, Linux environments and deployment automation

Security

Secure API development, JWT, OAuth2, role-based access control, SSL/TLS, PKI, firewalls, Nmap, port scanning, traffic analysis and log auditing

Leadership & Delivery

Agile/Scrum, sprint planning, requirements analysis, stakeholder communication, team mentoring, code reviews and technical onboarding

Backend & APIs

Django, Flask, Spring Boot, Node.js, Express, Ruby on Rails, Celery, RESTful APIs, GraphQL, WebSockets

Data & Databases

PostgreSQL, MySQL, relational modelling, query optimisation, data analysis, reporting and reconciliation workflows

Architecture

Microservices, modular architecture, MVC, OOP, clean code, scalable backend design, integration architecture and technical documentation

Testing & Quality

Automated testing, JUnit, Mockito, regression prevention, code review, release validation, debugging and production support

AI & Product

AI-assisted workflows, simulation design, data modelling, product strategy, prototype development, impact modelling and research-oriented software development

Selected Technical & Research Projects

RubblePass AI, *Full-stack cleantech product*

Product for construction-material intelligence, circular routing, QR passports, marketplace preparation and impact analytics.

LOCAL-LOOP, *Recommendation system*

Contributed to an explainable multi-stakeholder recommendation system using simulation, multi-objective scoring and data-driven evaluation for smart tourism.

Educational and research workflows, *AI-assisted tools*

Built AI-assisted educational and research workflows, automated analysis tools, digital learning resources and Python-based programming projects for international learners and technical teams.

Technical proposals and documentation, *Startup/research preparation*

Prepared technical proposals, pitch materials, system documentation, market analyses and reproducible simulations for startup, research and competition submissions.

Additional Leadership & Knowledge Transfer

- Mentored junior developers and students in Python, Java, algorithms, databases, networking, secure coding and software-project delivery.
- Delivered technical onboarding, code reviews, curriculum design and structured training for users with different levels of experience.
- Strong written communication for technical documentation, research writing, stakeholder presentations and multilingual collaboration.

Languages

Persian / Farsi

Native

English

Advanced

Turkish

Fundamental

Italian

Good working knowledge