

# Mahdi Akbari Zarkesh

Senior Software Engineer

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## Summary

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A highly skilled and impact-driven Senior Software Engineer with **5+ years** of experience designing, developing, and optimizing **scalable distributed systems, microservices, and cloud architectures**. Adept at **leading cross-functional teams**, driving technical innovation, and improving development workflows.

As a **technical consultant and startup advisor**, I help businesses leverage **AI, cloud, and process optimization** to scale efficiently while minimizing costs. I have a proven track record in DevOps, Blockchain, and high-performance backend engineering, ensuring seamless deployment, reliability, and system scalability.

Passionate about **mentorship, system design, and business growth**, I thrive at the intersection of technology, leadership, and **strategic decision-making**.

## Work Experience

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**Senior Software Engineer** • [Cafe Bazaar](#) • April 2023 - Present

*Cafe Bazaar is Iran's leading mobile application marketplace, with over 50 million users globally. (Full-time)*

- **Led a cross-functional team** responsible for the development and enhancement of core platform features, including search and page functionalities, driving improvements in system performance and user experience.
- **Architected and migrated** the search infrastructure from Vespa to an AI-powered embedding-based search, improving **response times by 983%** under high load.
- **Optimized and Complete CI/CD** pipelines using GitLab, streamlining release cycles and increasing engineering productivity.
- **Collaborated closely** with product and business teams to align technical strategies with market needs, ensuring efficient **product development**.
- **Mentored** junior developers and **conducted technical interviews**, strengthening team expertise.

**Software Engineer** • [Cafe Bazaar](#) • Sept. 2020 - April 2023

- **Increased system availability** from **99% to 99.9%** by implementing **fault-tolerant** mechanisms (circuit breakers, health checks, and improved service dependencies).
- **Developed a high-availability** download service, making it self-sustaining and resilient to failures to support multiple CDNs and multiple data centers.
- **Implemented TDD**, improving test coverage by 43%, reducing bugs, and enhancing maintainability.
- Resolved 21% of total installation errors by designing sign-checking features and library to prevent compatibility issues.
- **Drove agile adoption**, ensuring high-priority features were delivered efficiently through **collaborative sprint planning**.

Golang, Python, PostgreSQL, Docker, Kubernetes, Prometheus, Redis, Django, gRPC, RabbitMQ, Scala, and Spark, Software Development Leadership, Technical Architecture Design, Technical Problem Solving

**Business & Technical Consultant | Startup Advisor & Coach** • April 2023 – Present

As a business and technical consultant, I help startups and companies define **market positioning** and make **scalable, cost-effective** technical decisions. Leveraging **AI, cloud, and process optimization**, I streamline product development, reduce costs, and enhance user experiences. (Freelance)

**Current Collaborations:**

- charima.ir – Advising on an **AI-powered insurance assistant**, improving automation in purchasing, claims, and customer inquiries.
- done.tech – Supporting organizational and technical scaling, improving team collaboration and engineering efficiency.

My expertise in **strategy, AI consulting, and software engineering** enables businesses to navigate complex challenges, increase efficiency, and gain a competitive edge.

**Software Engineer** • [Ferdowsi Cloud](#) • Oct. 2019 - Sept. 2020

Ferdowsi Cloud is the private cloud infrastructure for Ferdowsi University of Mashhad, providing virtual machines, storage, and GPU computing services. (Part-time)

- **Developed RESTful APIs** for **OpenStack**, improving system interoperability and cloud resource efficiency.
  - **Built monitoring solutions** using **Telegraf**, enabling real-time cloud performance tracking.
  - **Enhanced system documentation and reduced runtime inefficiencies**, optimizing developer onboarding.
- Python, Django, OpenStack, Kubernetes, Docker, API Design

## Education

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- **Master's in Computer Engineering** • Sharif University of Technology • 2021 - 2023
- **Bachelor of Science in Computer Engineering** • Ferdowsi University of Mashhad • 2017 - 2021

GPA: 3.9/4.0 (Class Rank: 1)

## Awards and Publications

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- **EdgeLinker**: Practical **Blockchain-based** Framework for Healthcare Fog Applications to Enhance Security in Edge-IoT Data Communications (2024). [Published in IEEE](#).
- Energy-aware workflow scheduling in **fog computing** using a hybrid chaotic algorithm (2023). [Published in Springer](#).
- Ranked 5th in **RoboCup** Asia Pacific International Robotics Competition, 2D Soccer Simulation, Kish Island 2018

## Skills

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- **Languages**: Golang, Python, Scala, C++
- **Databases & Storage**: PostgreSQL, Redis, Elasticsearch, HDFS, S3
- **Cloud & Infrastructure**: Docker, Kubernetes, CI/CD (GitLab, Jenkins), Prometheus, Helm, PaaS, IaaS
- **Communication & Messaging**: REST, gRPC, WebSockets, Message Brokers
- **DevOps & System Architecture**: Microservices, Distributed Systems, High Availability Architectures, API Design
- **Business & Strategy**: Technical Leadership, Product Management, Startup Growth Strategies, AI & Cloud Consulting

## Personal Projects

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- Stronghold Crusader game ([Github](#)). **C++** using **Model-View-Controller** pattern.
- 2-player real-time client-server Pong game with viewer ability ([Github](#)). **Python** with **OOP** concepts.
- UserProfile System ([Github](#)). **gRPC** service with a **2-layer Cache** for performance optimization implemented in **Go**.
- [Aparat Channel](#). The video tutorials that I have made for Atomic Energy High School.

## Certifications & Training

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- **Certified Ethical Hacker (CEH)**
- **Product Management**