Mahdi Ahmadi

+98 921-417-7450 mm.ahmadi0101@gmail.com
linkedin.com/mohammadmahdi-ahmadi github.com/MohammadmahdiAhmadi

SUMMARY

Software Engineer with 3+ years of experience in backend development and DevOps, specializing in scalable systems and blockchain technology. Proven ability to deliver high-performance solutions for complex projects.

EDUCATION

Isfahan University of Technology **2019 – 2024**
Bachelor of Science in Computer Engineering *Isfahan, Iran*

Shiroodi (NODET) **2013 – 2019**
Diploma in Mathematics *Alborz, Iran*

WORK EXPERIENCE

Teaching Assistant **2024 – 2025**

- Teaching assistant in SQL Server Database Laboratory at IUT under supervision of Prof. Basiri.
- Teaching assistant in Software Engineering Laboratory at IUT under supervision of Prof. Baghoolizadeh.

Software Engineer, jafamhis.com **2022 – 2023**

- Engineered application logic and APIs with Go and MongoDB, enhancing system reliability for over 300,000 users.
- Implemented and managed a high-performance network of 5 nodes, achieving seamless scalability.
- Provided technical support and negotiated contracts, boosting B2B customer retention with clients including BMI, Homa Airlines, and Tejaratno Insurance.

Backend Developer, valmart.net **2021 – 2022**

- Created and optimized APIs for complex algorithms using Python, Django REST Framework (DRF), PostgreSQL, Redis, and Kafka.
- Enhanced data structures to support up to 10,000 transactions per second.
- Developed core components of trading systems, including Trade Matching Engine and user authorization.

TECHNICAL SKILLS

Languages & Frameworks: Go, Python, Django REST framework (DRF)

Cloud & DevOps: Kubernetes, Docker, Jenkins, Ansible, Nginx, Linux, Prometheus, Grafana, Kong

Data Management: SQL, Redis, RabbitMQ, Celery

Tools & Practices: Git, Figma, Scrum, Testing, LaTeX

RESEARCH EXPERIENCE

IoTBlockSim **2024**

- Developed research simulation platform (Python) to test blockchain-based incentive mechanisms for sustainable IoT networks under Prof. Karimiafshar's supervision

Decentralizing Privacy: Using Blockchain to Protect Personal Data **Winter 2024**

- Led a research project on blockchain-based privacy solutions under the guidance of Prof. Manshaei, focusing on decentralized data protection, as discussed in this IEEE paper.

Linux Security Architecture **Winter 2023**

- Authored a review paper on Linux Security Architecture, covering user management, file permissions, and kernel security, as part of the Security Basic course.

CERTIFICATES AND HONORS

- **Ranked 502^{th} (Top 1%)** in Iranian Nationwide University Entrance Exam for Bachelor Studies (Konkour) amongst 164'278 students, 2019

PROJECTS

Blockchain Core | Python **Summer 2024**

- Constructed a Python-based blockchain with features like transaction signing, block rewards, UTXO, wallets, and consensus mechanisms similar to Bitcoin.

MicroServices Demonstration | Python, Go **Winter 2024**

- Built a scalable microservices system using Docker, Kong, and gRPC, with RabbitMQ for async communication and Prometheus/Grafana for monitoring.

DevOps Demonstration | Python **Summer 2023**

- Applied DevOps practices using Django, Docker, Nginx, Ansible, Jenkins CI/CD, and Kubernetes.

Health Centers Management | Go **Spring and Summer 2022**

- Automated medical facility operations by calculating insurance and patient shares using Go, MongoDB, Redis, and other advanced technologies.

NetworkSecurity-Lab | Python **Fall 2024**

- Executed 8 hands-on security labs covering TCP hijacking (Mitnick Attack), ARP/ICMP spoofing, SYN/RST attacks, command injection, XSS, SQLi, and clickjacking—using tools like Wireshark and Scapy.

Microcontroller-Lab | C **Spring 2024**

- Completed 8 lab assignments on ATmega32, covering GPIO, Timers/Interrupts, ADC, UART, LCD/Keypad interfacing, and motor control.

AVR OS | C **Fall 2023**

- Enhanced an AVR microcontroller OS by optimizing task prioritization and resolving critical interrupt handling issues.

SQL-Lab | SQL **Fall 2023**

- Completed 8 lab assignments covering a broad range of MS-SQL concepts.

SemiDEX (Decentralized Exchange) | Python **Winter 2021**

- Built a semi decentralized exchange platform with automated market-making algorithm (AMM) and liquidity pools, similar to Uniswap.

Trade Matching Engine | Python **Summer 2021**

- Built a high-performance trade matching engine for cryptocurrency exchanges, handling up to 10,000 trades per second.

B-Plus Tree | Python, Go **Spring 2021**

- Implemented a high-performance, cache-friendly B-Plus tree structure.

Market Maker Bot | Python **Fall 2021**

- Designed a bot to enhance market liquidity by placing orders and synchronizing currency prices with global benchmarks.

Ticket Management System | Python **Winter 2021**

- Created a ticket management system using Django REST Framework (DRF) for efficient ticket handling and communication with administrators.

IoT-Course | Arduino **Spring 2024**

- Integrated ESP8266 with DHT11 and YL-69 sensors to transmit environmental data to a Node-RED dashboard for real-time monitoring and control.

Network-Lab | Cisco **Spring 2023**

- Simulated interconnected networks in Cisco Packet Tracer using OSPF, EIGRP, and RIP protocols across global regions.

OperatingSystem-Lab | C **Fall 2022**

- Completed 9 lab assignments on Operating System concepts including kernel modules, pthreads, IPC, and system calls.

DataStructure-Course | C++ **Fall 2021**

- Developed a zero-player strategic console game using data structures such as Fibonacci Heap, AVL Tree, and BST as part of a Data Structures course project.