

SEPEHR VAHEDI

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Education

Sharif University of Technology

B.Sc. in Computer Engineering, Software Engineering

Sep. 2020 – Jul. 2026 (expected, Co-Op Program)

Tehran, Iran

- Enrolled in **Co-Op Education Program** with 3-year full-time placement as Software Engineer at [Tapsi](#).
- Overall GPA: 16.51/20 (17.75/20 in last two years).** Achieved while working full-time.
- Relevant Coursework:** Software Engineering (19.4/20), Software Engineering Lab (20/20), Web Programming (20/20) Systems Analysis & Design (20/20), Compiler Design (19.8/20), Data Structures & Algorithms (19.4/20)

Research Interests

- AI for Software Engineering
- Distributed Systems
- Software Quality
- Automated Testing
- Program Analysis
- Formal Methods

Research Experience

Software Quality Research Lab

Aug. 2025 – Present

Research Assistant, Supervised by [Prof. Seyed-Hassan Mirian-Hosseinabadi](#)

Sharif University of Technology

- Research focus:** Multi-agent LLM framework for automated test generation with structural deduplication. 
- B.Sc. Thesis:** Achieved 94% coverage on 2,200+ Python functions via multi-agent LLM test generation.
- Deployed live production system:** [testcouncil.com](#) – fully functional test generation platform.
- Semantic clustering algorithm for test deduplication, reducing redundant test cases by 72%.

Intelligent Software Engineering Lab

Mar. 2025 – Present

Research Assistant, Supervised by [Prof. Abbas Heydarnoori](#)

Sharif University of Technology

- Research focus:** Automated GitHub issue title generation from body text, labels, and metadata using LLMs.
- Reduced LLM input token costs **37.3%** using deep learning model trained on textual similarity and linguistic features.
- Maintained semantic quality within **0.4%** of GPT baseline (BERTScore: 0.877 vs 0.873) on **2.6M+ GitHub issues**.
- Benchmarked against T5, RAG, GPT using BLEU, ROUGE, METEOR, BERTScore. *Paper in preparation.*

Industry Experience

Tapsi (Ride-Hailing Platform, 10M+ Monthly Users) (,)

Feb. 2022 – Dec. 2024

Software Engineer (Co-Op Program), Supervised by [Mahdi Bohloul](#) & [Sina Shahhoseini](#)

Tehran, Iran

- Doubled daily deliveries** by architecting Kafka-based event-driven microservices for parallel delivery platform.
 - Built scalable backend handling **1M+ daily events** with sub-100ms latency via reactive Spring Boot.
- Co-developed Iran's first school transport platform** managing 2K+ drivers and 12K+ students.
 - Designed multi-app ecosystem with offline AI matching, achieving **95% route optimization**.
- Cut infrastructure costs 45%** migrating monolithic Node.js service to reactive Spring Boot with zero downtime.
 - Reduced response times from **200ms to 80ms** at peak load using Project Reactor non-blocking I/O.
- Reduced GPS service load 67%** via dynamic polling algorithms, data filtering and caching strategies.
- Led workshop on AI-assisted development, integrating ChatGPT/Copilot into team workflow. [Workshop Materials](#) 

RabinCash (Pioneering Cryptocurrency Exchange) (,)

Feb. 2020 – Feb. 2021

Co-Founder & Product Designer

Tehran, Iran

- Co-founded one of Iran's first crypto exchanges** with dual P2P/B2P platforms supporting 20+ trading pairs.
- Designed end-to-end trading UX from concept to launch, driving user acquisition and transaction workflows.

Teaching Experience

Sharif University of Technology

Tehran, Iran

Teaching Assistant – Scientific and Technical Presentation

Sep. 2025 - Present

Teaching Assistant – Advanced Programming

Feb. 2024 - Jul. 2024

National Organization for Development of Exceptional Talents

Sep. 2020 – May 2021

Informatics Olympiad Teacher – Competitive Programming (Algorithms & Optimization)

Tehran & Mashhad, Iran

- Taught algorithm design and C++ to gifted high school students preparing for national/international competitions.
- Achieved **Candidate Master rank** (top 1.5% worldwide) and solved **400+ problems** across two Codeforces accounts during high school: [Candidate Master Profile](#), [Expert Profile](#).

Technical Skills

Programming Languages: Python, Java, Kotlin, C++, JavaScript/TypeScript (Node.js), Go, R

Software Engineering: Spring Boot, Project Reactor, Microservices, Event-Driven Architecture, RESTful APIs, gRPC, OAuth2.0, Test Driven Development, Domain Driven Development, Requirement Engineering

AI/ML & NLP: PyTorch, Hugging Face, Transformer Models, LLM Fine-tuning, RAG Systems, Embeddings, NLTK

Testing & Quality: JUnit, Mockito, Selenium, Test Automation, Coverage Analysis

Data Systems: MongoDB, PostgreSQL, Redis, Kafka, Hazelcast, Vector Databases

DevOps & Cloud: Docker, Kubernetes, ArgoCD, GitLab CI/CD, Istio, Envoy Proxy, Prometheus, Grafana

Data Science: Pandas, NumPy, Scikit-learn, Statistical Analysis

Selected Projects [More projects](#)

TestCouncil - Multi-Agent Test Generation Platform [🔗](#) (testcouncil.com)

- Deployed production-grade platform generating unit tests for 2,200+ Python library functions.
- Achieved 94% code coverage using collaborative LLM agents with semantic deduplication algorithms.
- Reduced redundant test cases by 72% through embedding-based clustering and similarity detection.

Multi-Agent Academic Paper Review System [🔗](#)

- Automated peer review scoring with 85% accuracy via distributed LLM agents and voting.
- Investigated bias reduction techniques across GPT-4, Claude, and Gemini for paper evaluation.

Real Estate Data Integration Platform [🔒](#) (*Confidential industry project with Air Properties Dubai*)

- Built ETL pipeline for 10K+ listings with semantic search and automated validation.
- Delivered 40% faster property matching via RAG-based recommendation engine serving 500+ queries/day.

Honors & Awards

Iran National Olympiad in Informatics (INOI) – Top 50 Finalist (2 Consecutive Years)

2018, 2019

AUT International Programming Contest [🌐](#) – 3rd Place among 65 Teams

2019

Sharif AI Challenge [🌐](#) – 3rd Place (Mini Games), 5th Place (Main Competition)

2019

Languages

English : Advanced - **IELTS 8.0 Overall** (Listening: 8.0, Reading: 8.5, Writing: 7.0, Speaking: 7.5)

German : Intermediate

Persian : Native

References

1. Dr. Abbas Heydarnoori

Associate Professor, Department of Computer Engineering, Sharif University of Technology, Iran
Research Supervisor at ISE Lab

[✉️](mailto:heydarnoori@sharif.edu) [🌐](#) Website

2. Dr. Seyed-Hassan Mirian-Hosseiniabadi

Associate Professor, Department of Computer Engineering, Sharif University of Technology, Iran
Research Supervisor at SQR Lab

[✉️](mailto:hmirian@sharif.edu) [🌐](#) Website

3. Mahdi Bohloul

Senior Team Lead - Head of Backend, Tapsi Delivery
Direct Supervisor at Tapsi

[✉️](mailto:mahdi.bohloul@tapsi.cab) [LinkedIn](#) [GitHub](#)

4. Sina Shahhoseini

Engineering Lead, [Raisin](#), Germany (Former Engineering Manager at Tapsi)
Direct Supervisor at Tapsi

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