

ARSHIA AKHAVAN

Master's Student in Computer Science

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EXPERIENCE

Software Engineer

Sotoon

Jan 2023 – Dec 2024

Sotoon is a B2B cloud provider that focuses on reliable and scalable computing solutions. I worked in the K8s-as-a-Service team, designing and maintaining Sotoon's Kubernetes engine and several integrations to Sotoon's services, such as CSI, CNI, and Auto-scaler.

Key Achievements:

- Automate management of **90+** Kubernetes clusters, optimizing operational efficiency and reducing tickets by **30%**.
- Achieve a **40%** reduction in initial cluster costs by eliminating duplicated system components and introducing **multi-tenancy**.
- Redesign cluster network topology to enhance **security** and abstract control plane management from customers.
- Plan and Lead **Migration** of over **100 customers'** k8s-clusters to the new infrastructure with **zero downtime**.
- Implement A/B testing framework for cluster updates, preventing **5** otherwise catastrophic failures.
- Investigate and debug a critical **data race** issue in the CSI plug-in that could have resulted in the deletion of over **70TB** of client storage data, ensuring data integrity and service reliability.
- Automate CI/CD pipeline for OS image creation, reducing new k8s version release time **from 1 week to 1 day**.

Data Platform Engineer

Digikala

Aug 2021 – Jan 2023

Digikala is the largest e-commerce company in the Middle East, serving over 40 million users. As part of the Big Data & AI team, I was responsible for building and maintaining the infrastructure required to efficiently store, process, and manage the vast amounts of data generated by user activity.

Key Achievements:

- Developed a **Parallel Data Query Engine** on top of **Apache Spark**, revising data retrieval models and queries to reduce **resource usage** by 23% and **computation time** by 43%.
- Reduced API latency** by identifying blocking operations in an asynchronous workflow, optimizing the critical path to **triple requests per second (RPS)**.
- Designed and maintained a data platform using **K8s** for orchestration, **Ceph** for storage, **Airflow** for scheduling, **Spark** for batch/stream processing, and **Kafka** with **Debezium** for database synchronization.
- Implemented **GitOps**-based infrastructure management with **ArgoCD**, automating API deployments via **Kustomize** and **Helm**, reducing release cycles from 6 months to 6 hours.
- Deployed and maintained a **staging environment** and built a framework for the Data Science team, reducing their development time significantly.

DevOps Engineer

Tapsell

Nov 2019 – Aug 2021

Tapsell is a leading AdTech company in Middle East. As part of the DevOps team, I provided cloud infrastructure and platform services that enabled other technical teams to build, deploy, and scale their applications efficiently.

Key Achievements:

- Optimizing Cassandra's **Disk usage** for different workloads, resulting in 90% reduction in disk usage for some of our clusters.
- Designed and implemented a fully automated backup, validation, and restore system for our cloud-native infrastructure, replacing the legacy solution while preserving **backward compatibility** to enable seamless, incremental migration of 30TB+ of data with zero downtime.
- Built and maintained infrastructure by deploying a staging cluster on **K8s**, developing CI/CD pipelines with **GitLab CI**, automating provisioning with **Terraform** on **VMWare**, and administering Linux-based VMs to resolve network bottlenecks and improve performance.

PUBLICATIONS

👥 Conference Proceedings

- A. Akhavan, A. Hosseinpour, A. Heydarnoori, H. Bagheri, and M. Keshani, "Linkanchor: An autonomous llm-based agent for issue-to-commit link recovery," in *In Proceedings of ACM International Conference on the Foundations of Software Engineering*, ser. FSE '26, ACM, 2026. DOI: [10.48550/arXiv.2508.12232](https://doi.org/10.48550/arXiv.2508.12232).

HONORS & AWARDS

🏆 BGSU ACM Hackathon

2'nd place
📅 Apr 2025 📍 Bowling Green, OH

Awarded for developing [Piqniq](#), an emergency alert app designed to support users during panic attacks.

🏆 Konkour

118'th place
📅 Aug 2018
Ranked 218'th in the National University Entrance Exam on Mathematics (Konkour) among more than 144,000 students nationwide. (Top 0.08%)

VOLUNTEER EXPERIENCE

Founder & President

Code o She'r (first)

📅 Apr 2024

Code o She'r is a Spaghetti Code Challenge which focuses on UBs and exploits architectural behaviors of Computers and compilers to host an environment for contestants to become more familiar with the field of computer systems.

As the Founder and President of Code o She'r, I took on the role of leadership over a team of 70+ members and oversaw various flows from design, marketing, and executive duties to Scientific and technical tasks.

Chief of Infrastructure and System Team

Sharif AI Challenge 2021

📅 Dec 2020 - May 2021

The Sharif AI Challenge is an annual AI competition organized by the SSC, where teams design AI agents to compete in a game-based problem. The event features both online and on-site phases and attracts hundreds of student participants from across the country.

I led the Infrastructure team to design and develop a **scalable** competition platform that could **dynamically** adjust resources based on demand while ensuring **fairness** between competitors.

[GitHub](#)

Chief Technical Staff

ICPC Asia-West Continent Final Contest

📅 May 2020

The ICPC is an annual multi-tiered competitive programming competition among universities around the world. As the Chief Staff, I led my team to:

- **build contest-customized OS images** and distribute them on contestant hosts using **Network boot**.
- **Restrict external access and host-to-host access** of each contestant's host device.

EDUCATION

M.Sc. in Computer Science
San Diego State University

📅 Sep 2025 - Dec 2027 📍 CA, USA

B.Sc. in Computer Engineering
Sharif University of Technology

📅 Sep 2018 - Jul 2024

PROGRAMMING LANGUAGES

Rust ●●●●●●●●●●
Go ●●●●●●●●●●
C ●●●●●●●●●●
Bash ●●●●●●●●●●
Python ●●●●●●●●●●
Java ●●●●●●●●●●
SQL ●●●●●●●●●●

TECHNOLOGIES

🔧 Parallel Computing

AVX Cuda OpenMP rayon-rs
crossbeam-rs

🚀 Orchestration

k8s Docker Docker-swarm

🌐 Networking

Nginx HAproxy Calico

📦 CI/CD

Ansible Terraform GitlabCI
ArgoCD

📊 Bigdata

Spark Airflow

🗄️ Database & Storage Systems

Ceph MinIO Kafka Redis
Cassandra MongoDB

LANGUAGES

English ●●●●●●●●●●

French ●●●●●●●●●●

Persian ●●●●●●●●●●