

ARSHIA AKHAVAN

Master's Student in Computer Science

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EDUCATION

M.Sc. in Computer Science

San Diego State University (2025 - 2027)

Overall GPA: 4.0/4.0

B.Sc. in Computer Engineering

Sharif University of Technology (2018 - 2024)

Overall GPA: 18.96/20

HONORS & AWARDS

PGRF Fellowship Master's funding

📅 Sep 2025 - Dec 2027

📍 SDSU, CA

Awarded the SDSU Presidential Graduate Research Fellowship (PGRF) for demonstrated excellence in research and academic achievement during my master's at SDSU.

NSF-Funded Researcher Master's funding

📅 Sep 2025 - Dec 2027

📍 SDSU, CA

Recipient of full master's funding via NSF-sponsored research under supervision of [Bryan Donyanavard](#)

BGSU ACM Hackathon 2nd place

📅 Apr 2025

📍 Bowling Green, OH

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

Konkour 118th place

📅 Aug 2018

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

RESEARCH INTERESTS

- Operating System Design and Implementations
- Distributed Systems and Parallel Computing
- Programming Languages and Formal Verification
- Cloud Computing
- High-Performance Computing
- Computer Networks

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).

ONGOING RESEARCH

Yggdrasil: General Purpose Scene Graph Service for Autonomous Systems

Engineering Yggdrasil, a general-purpose distributed scene graph service designed to provide a unified, modular environmental representation for autonomous systems. Unlike prior task-specific implementations, Yggdrasil offers a flexible architecture that scales across diverse multi-agent scenarios, optimizing the interface between upstream perception and downstream long-horizon planning..

ACADEMIC SERVICES

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.

TEACHING ASSISTANT EXPERIENCES

- Course Desgin - **Zero to Hero Linux** - Quera - [link](#)
- Head TA - **Operating System** - Dr. Mehdi Kharrazi - Spring 2023
- TA - **Operating System** - Dr. Mehdi Kharrazi - Spring 2022
- TA - **Computer Network** - Dr. Mehdi Jafari - Spring 2023
- TA - **Computer Network** - Dr. Mehdi Jafari - Fall 2022
- TA - **Automata Theory** - Dr. Ali Movaghar - Spring 2023
- Head TA - **Multi-Core Computing** - Dr. Hajar Falahati - Fall 2023
- Head TA - **Multi-Core Computing** - Dr. Hajar Falahati - Spring 2023
- TA - **Multi-Core Computing** - Dr. Hajar Falahati/Dr. Hamid Sarbazi - Spring 2022
- TA - **Computer Structure and Language** - Dr. Laleh Arshadi - Spring 2021
- TA - **Numerical Computation** - Dr. Samira Hossein ghorban/ Dr. Hamid Sarbazi - Spring 2023
- TA - **Design Of Database** - Dr. Mojtaba Varmazyar - Fall 2022
- TA - **Big Data** - Dr. Sharare Ali pour - Spring 2023
- Head TA - **Advanced Programming** - CE department - Spring 2021
- TA - **Advanced Programming** - CE department - Spring 2020
- Head TA - **Fundamentals of Programming** - Dr. Mohammad Amin Fazli - Fall 2021 & Fall 2022
- TA - **Fundamentals of Programming** - Dr. Fakoori - Fall 2020
- TA - **Fundamentals of Programming** - CE department - Fall 2019

INTERNSHIPS

Semantic memory garbage collection for concurrent lock-free data structures

Kaist University

📅 May 2023 – Aug 203

📍 Seoul

My internship focuses on **memory model for atomic operations** and Design of **lock-free data structures** for high concurrency workloads. I start by learning and implementing different models of Locks and then went on implementing lock-free data structures such as **Hash Map based on Split-Ordered List** and other data structures. As the next and necessary step, I studied different methods for **Semantic Memory Reclamation** for these data structures and learn many schemes such as **hazard pointers** and **EBR**. I also was given the chance to work with professor Kang's recent published scheme, **HP++** which was a improvement over Hazard pointers. it was also a good opportunity for me to get better in rust programming language

PROJECTS

shmem-bind

Develop and actively maintain [shmem-bind](#) open-source library which is a safe and idiomatic wrapper over shared memory APIs in rust with proper cleanups. ([git](#))

ARK

A Layer 4 VPN protocol which hides the traffic from adversary by swapping different layer 4 protocols from hub to hub and making an unbalanced in/out traffic ([git](#))

Cell Network Simulator

A 4G/5G Cell Network Simulator that virtualizes the entire Layer 1–3 stack. The system provides seamless, transparent integration, allowing users to route arbitrary TCP/UDP traffic through the simulation via standard commands (e.g., curl) without any modifications to the Layer 4 application or benchmarks. ([git](#))

CS162 Berkeley's Pintos Project

Develop an operating system kernel, addressing challenges like system call implementation, filesystem management, and process scheduling, showcasing expertise in OS design and low-level programming. ([git](#))

Matrix Vector multiplication using AVX

Develop a library for multiplication of sparse Matrices on top of Intel's AVX vector processors to further increase the performance ([git](#))

TCP network stack

Implement a TCP FSM with Rust using the Linux kernel's TUN/TAP based on RFC 793

C minus Compiler

Implement a Compiler for C minus language ([git](#))

Hash Map based on Split-ordered list

Implement a Concurrent HashMap based on Split-ordered list paper in Rust ([git](#)) ([paper](#))

Hazard pointers

Hazard pointer implementation using Rust ([git](#))

SELECTED COURSES

- | | | | | | |
|---------------------|-------|-------------------------|-------|------------------------|-------|
| • Operating Systems | 20/20 | • Compiler Design | 20/20 | • Multi-Core Computing | 20/20 |
| • Computer Network | 20/20 | • Automata theory | 20/20 | • Real-time Systems | 20/20 |
| • Database Design | 20/20 | • Computer Architecture | 20/20 | | |

INDUSTRIAL EXPERIENCE (SUMMARIZED)

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.

Technology Stack: Golang, Kubernetes, CSI, CNI, Docker, Calico, Ansible, Packer

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.

Technology Stack: Rust, Spark, Airflow, Kubernetes, Ceph, Kafka, Debezium, GitOps, ArgoCD

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.

Technology Stack: Kubernetes, Linux, Docker, Cassandra, MongoDB, Kafka, Redis

PROGRAMMING LANGUAGES

Rust

Go

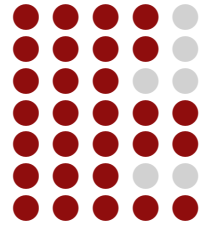
C

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

