Ehsan Hajyasini

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ehsan-hajyasini

Education

University of California San Diego *2022 – Aug 2027*
PhD in Computer Science in Systems and Networks
- Advisor: Dr. Steven Swanson

University of Tehran *2013 – 2018*
BSc in Software Engineering

Publications

Telepathic Datacenters: Fast RPCs using Shared CXL Memory 2024
Ehsan Hajyasini, Suyash Mahar, Seungjin Lee, Zifeng Zhang, Mingyao Shen, Steven Swanson
10.48550/arxiv.2408.11325

Talks

PodCache: Distributed Page Caching with CXL Memory Pools for Multi-Tenant Cloud Environments *SRC TECHCON 2025*
Ehsan Hajyasini; Steven Swanson
- Awarded Top 10 Best Student Presenter.

Experience

Research Intern, CXL for AI Systems *San Jose, CA*
SK Hynix America *July 2025 – Sept 2025*
- Integrated the RPC Over CXL with SK Hynix Niagara AI Centric Memory Platform

Graduate Research Assistant *San Diego, CA*
University of California San Diego *2022 – present*
- Designed a framework for efficient low-latency communication leveraging CXL memory.
- Specialized in Linux kernel development, focusing on memory and file system subsystems.
- Specialized in CXL technologies and high-performance RPC frameworks.
- Reduced kernel memory sealing latency from 120 µs to 0.5 µs.
- Improved sandboxing latency from 26 µs to 0.6 µs.
- Architected a distributed orchestration system leveraging etcd for robust coordination.

Lead Engineer *Tehran, Iran*
Radin Bourse *2017 – 2022*
- Led the design and development of a trading platform for the national stock exchange.
- **High Performance:** Achieved order matching latency of **2 µs** and end-to-end transaction latency of **40 µs** through optimized algorithms and system design.
- **Message-Passing:** Reduced latency from **2 ms** to **30 µs** by optimizing communication.
- **Performance Benchmarks:** Devised **50 microbenchmarks** to evaluate and reduce critical paths latency from **200 µs** to **2 µs**.
- **System Availability:** Integrated **Raft** and **Chain Replication** to ensure fault tolerance.
- **Infrastructure Automation:** Engineered workflows for **20 nodes** using **Ansible**, cutting stack setup time to under **10 minutes**.
- **Network Security:** Orchestrated a **Zero Trust** infrastructure to fortify system security.

- **Software Quality:** Established best practices to reduce production issues and improve maintainability.
- **Competency Matrix:** Created a framework to assess skills and support career growth.
- **Team Mentorship:** Onboarded and trained **10 new hires** to deliver complex tasks within **2 months**.

Software Engineer *Germany*
Digital Product School, Germany *2018 – 2018*
- Conceptualized and prototyped an innovative bike-sharing app for last-mile mobility.

Software Engineering Intern *2016 – 2016*
Cafebazaar
- Deployed and fine-tuned a CDN cache using **Nginx**.
- Realized 99% cache hit rate and reduced storage needs by 94%.

Technical Skills

Languages: C++, C, Python, Java, Go

Systems & Frameworks: Linux Kernel (memory, VM, syscall development), CXL Memory Programming, RPC frameworks (custom & gRPC), Kafka, PostgreSQL

Tools & Platforms: Docker, Nginx, Ansible, HashiCorp Nomad, Vault, Teleport, CI/CD

Practices: Low-latency systems design, Performance Benchmarking, Concurrency & Synchronization, Distributed Systems, DevOps, Infrastructure as Code, Microservices

Academic Projects

Congestion Control Analysis *2024*
- UCSD CSE222A Computer Communication Networks Project

Raft implementation in Go *2023*
- UCSD CSE224 Graduate Networked Systems Project

Enhancement of Graph Node Classification via Self-Attention *2018*
- Bachelor's Thesis

Projects

Scalable Online Election Platform for University of Tehran *2016-2017*
- Engineered a robust election system serving over 15,000 users for university-wide elections.

RANA: Mobile Augmented Reality Framework *2014*
- Designed and implemented an augmented reality solution optimized for mobile devices.

TripleA: 3D Soccer Simulation in RoboCup *2011*
- Secured first place in Khwarizmi Technical Challenges.

Mixed Reality Soccer in RoboCup IranOpen *2010*
- Competed as a member of TripleA Simulation Team in RoboCup IranOpen Mixed Reality.

Teaching Experience

Chief Teaching Assistant: Advanced Programming *2016 – 2018*

Teaching Assistant: Internet Engineering *2017*

Teaching Assistant: Formal Methods in Software Engineering *2017*

Teaching Assistant: Design and Implementation of Compilers *2016*