SHAYAN HOSSEINI

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EDUCATION

University of British Columbia, Vancouver, BC, Canada   2021 - present
M.Sc. in Computer Science

University of Tehran, Tehran, Iran   2015 - 2020
B.Sc. in Computer Engineering, GPA: 17.38/20
Thesis: *Verfication of Microservices*

RESEARCH EXPERIENCE

Research Assistant at the University of British Columbia, Vancouver, BC, Canada   2021 - present
Under supervision of Prof. I. Beschastnikh

I am working on the PGo project, to compile verifiable models of the distributed system into implementations in Go.
· Designed and implemented a solution to build verified fault-tolerant systems using PGo. Using it, I built a distributed key-value store.
· Designed a solution to build eventual consistent systems using PGo. Now working to build CRDTs using this approach.

Research Intern at Max Planck Institute for Informatics, Saarbrücken, Germanry   Summer 2019
Under supervision of Prof. C. Lenzen

I was working on the problem to make routing algorithms fault-tolerant by using an augmentation process. I proved the lower bound for the minimum number of edges and vertices in the resulting graph after being augmented.

PROFESSIONAL EXPERIENCE

Software Engineering Manager at Cafebazaar, Tehran, Iran   2020

Member of Sotoon, providing cloud services to the other companies. I was leading a team of 10 people aiming to integrate all provided services into a unified product. Besides, I was a member of the company's hiring committee.

Technical Lead and Product Manager at Cafebazaar, Tehran, Iran   2017 - 2019

Member of the infrastructure team. Aiming to provide high available and scalable services to other technical teams. Leading a team of 8 people inside this group. I was one of the co-founders of Cafebazaar Cloud, which is a subsidiary of Cafebazaar that provides public cloud services to the other companies (rebranded as Sotoon later).
· Designed and developed a distributed object storage service using Ceph, named Kise. It serves a large amount of data and responds to more than hundreds of requests per second in production.
· Designed and developed a new architecture for our Content Delivery Network to use cache servers and IP Anycast network.
· Designed and developed a new software architecture for the CDN nodes to be dynamically configurable and multi-tenant.
· As a Product Manager, responsible for determining the team's vision, OKRs, stories, and tasks.
· As a Tech Lead, responsible for deciding on technical problems, developing and maintaining these services.

Software Engineer at Cafebazaar, Tehran, Iran   2015 - 2017

Cafebazaar is the most popular Android application store in Iran, with more than 35 million users.
· Member of the app acquisition team, working on application download and payment system.
· System owner of CDN and parts of Cafebazaar back-end. Responsible for code reviews and the systems to be available, scalable and maintainable.

AWARDS AND HONORS

ICPC, International Collegiate Programming Contest
The International Collegiate Programming Contest is an algorithmic programming contest for college students.
· **56th team** in the 41th ACM ICPC World Finals, South Dakota, USA   2017
· **3rd team** in ICPC Pacific Northwest Regional Contest   2021
· **3rd, 2nd, 2nd, 9th team** in Regional Contests of ACM ICPC West Asia Region, Tehran site, respectively in 2018, 2017, 2016 and 2015.

Silver Medal in the 24th Iranian National Olympiad in Informatics   2014

Iranian National Olympiad in Informatics is an annual computer-programming competition for high school students. Medals awarded to 40 people after a year of competition between over 10000 students from all the country.

NOTABLE PROJECTS

Peydaa   2021 - present

Peydaa is a non-profit platform to make transparency in the Iranian job market. It is a website that people can anonymously share their salary and experience of working in companies with others. I started Peydaa myself, working as both product manager and developer, and over time, four more people joined the team remotely. Until now, more than 600 users have shared their salaries and experiences on Peydaa.

PGo   2021 - present

PGo compiles verifiable formal specifications into Go implementations. I contributed to the PGo distributed runtime and built several distributed systems using PGo.

Tracing library   2021

A light-weight library for manual distributed system tracing. Has been used for precise automatic grading in CPSC 416 course. I was the main designer and maintainer of this system and implemented the most parts of it.

gRPC Go Contracts   2020

A design by contract library for the gRPC Go framework; To verify the communication of microservices by writing contracts for their RPCs. I designed and implemented this project as a part of BSc thesis.

TEACHING EXPERIENCE

Teaching Assistant

University of British Columbia

· CPSC 416: Distributed Systems, I. Beschastnikh   Spring 2021

University of Tehran

· **Head TA**, Design and Analysis of Algorithms, H. Mahini   2018 - 2019
· Engineering Probability and Statistics, B. Bahrak   Fall 2018, 2019

Informatics Olympiad and ICPC related

Teaching topics in computer science including Algorithms, Data Structures, and Graph Theory to undergraduate students preparing for ICPC as well as high school students preparing for Informatics Olympiad.

· University of Tehran   2017
· Iranian National Olympiad in Informatics Summer Camp   2015
· Allameh Helli High School   2015

SKILLS AND QUALITIES

Programming Languages and Tools: Expert in Go, Python, Bash-Scripting, Git. Working knowledge in C/C++, SQL, Java, Lua, Javascript, Verilog, LaTeX.

Software Engineering: Familiar with different object-oriented design patterns, software development methodologies such as Agile and DevOps and, functional programming.

Web Application Development: Comfortable with Django, Flask, CSS3, HTML5 and ReactJS.

Site Reliability Engineering: Managed scalability and maintainability challenges in several web applications having thousands of requests per second. Expert Linux user and experienced in system administration. Experience with Ceph storage platform, Kubernetes, Docker, NGINX, Networks.

Theoretical Background: Expert in design of algorithms, data structures, and discrete mathematical fields such as graph theory and combinatorics suggested by awards in ACM ICPC and Olympiad in Informatics.

Languages: English (Full professional proficiency), Persian (Native).

Other: Creative, self-motivated, eager to learn new things. Communicative and collaborative with the ability to work both independently and in a team.