SHAYAN HOSSEINI

X410D 2366 Main Mall, Vancouver, BC Canada V6T 1Z4
+1-604-841-1112 ◇ sshayanh@cs.ubc.ca ◇ https://shayanh.com/

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

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

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

· Working 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 augmented graph.

PROFESSIONAL EXPERIENCE

Software Engineering Manager at Cafebazaar, Tehran, Iran 2020

· Leading a team of 10 people working to integrate all public cloud services into a unified product.
· Designed and implemented a billing system to automatically charge users for their usage of the services.
· Designed and implemented a monitoring and alerting system that allowed users to monitor their resources in the cloud.

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

· Co-founded and led a team of 8 engineers to provide highly available and scalable cloud service to other technical teams and companies (now rebranded as Sotoon).
· Started and developed a distributed object storage service using Ceph. It serves more than 50TB of data and responds to more than hundreds of requests per second in production.
· Scaled our existing content delivery network 50% by developing a new architecture using cache servers.
· Designed and developed a new software architecture for the CDN nodes to be dynamically configurable and multi-tenant.

Software Engineer at Cafebazaar, Tehran, Iran 2015 - 2017

· Developing Cafebazaar back-end codebase, which had more than 100,000 lines of Python code and 30 million users.
· System owner of Cafebazaar CDN and parts of the back-end. Managing these systems on more than 15 servers.
· Responsible for code reviews and system maintenance.

AWARDS AND HONORS

ICPC, International Collegiate Programming Contest
The International Collegiate Programming Contest is the most prestigious programming contest for college students.

· **56$^{\text{th}}$ team** in the 41$^{\text{th}}$ ACM ICPC World Finals, South Dakota, USA 2017
Top 0.3% among more than 45,000 students from all over the world.
· **3$^{\text{rd}}$ team** in ICPC Pacific Northwest Regional Contest 2021
Among more than 100 teams participating from the area of Pacific NW (including Washington, Oregon, N. California, British Columbia).

· **3rd, 2nd, 2nd, 9th team** in Regional Contests of ACM ICPC West Asia Region, Tehran site, respectively in 2018, 2017, 2016 and 2015.
Top 1% among more than 300 teams that participate in this contest every year.

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

Top 0.16% in the algorithmic programming contest among 10,000 participants in 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 founded 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 developer of the project.

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 my B.Sc. 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 ICPC and Olympiad in Informatics.

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