ERFAN MEHRABAN

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EDUCATION

Master of Science in Computer Science   2023-2025
Simon Fraser University, Burnaby, British Columbia, Canada   *Under Supervision of Dr. Hefeeda*

Working on optimizing network of Large Language Models
At the Network and Multimedia Systems Lab

Bachelor of Science in Computer Science   2016-2021
Amirkabir University of Technology, Tehran, Iran (Ranked 2nd in Iran)

CGPA: 3.94/4.3
Ranked within the top 10% among 70 undergraduate students

Diploma in Physics and Mathematics Discipline   2012-2016
National Organization for Development of Exceptional Talents (NODET), Tehran, Iran

GPA: 19.25/20

SELECTED COURSES

- Advanced Programming: 17.5/20
- Principles of Software Design: 19/20
- Data Structures & Algorithms: 18.5/20
- Design & Analysis of Algorithms: 20/20
- Database: 19/20
- Advanced Database (Graduate Course): 18.5/20
- Distributed Systems (Graduate Course): 19/20
- Computer Networks: 16/20

RESEARCH INTERESTS

- Network & Internet Architecture
- Cloud Computing
- Software Engineering

RESEARCH EXPERIENCE

Debloating Container Images   June 2022-Present
Internship Research, Under Supervision of Prof. Benoit Baudry   KTH Royal Institute of Technology

- Read more than 20 recent studies on "Debloating infrastructure as a code" topic.
- Made a comparison to find a proper tool for tracking containerized application file dependencies through monitoring Syscalls.
- Implemented prototype to create slim container image from necessary file whitelist according to standard OCI format.
- Implemented a benchmarking tool that generates intense file access and modification Syscalls to compare tracing methods, including PTRACE, FANOTIFY, and eBPF backed.

TEACHING EXPERIENCE

Principles of Software Design   Fall 2022
Instructor: Dr.Mahdi Bejani   *Amirkabir Uni.*

WORK EXPERIENCES

Senior Team Leader
Sep 2022 - Present
CafeBazaar

· Managing teams of 15+ employees including backend, fronted, and test engineers, data scientists, BDAs, and UX experts
· Tech Leading engineers to make clear and cost-effective decisions to deliver the product requirements
· Delegating tasks and supporting members in their career growtht

Senior Software Engineer
Feb 2019 - Sep 2022
CafeBazaar

· Designing and developing high-available backend services and delivering product's needed features in Python and Go, with over 1.5k requests per second, and 99.99% uptime over a week, and 50 million users.
· Acting as a system owner of 4 primary payment services, responsible for codebase quality and availability of services.
· Refactoring and maintaining ten years old legacy service with 90,000 lines of code and over 50 APIs.

Backend Developer
Aug 2018 - Sep 2018
Yara Mobile

· Rewrote online advertising platform panel from Laravel to Django.

Software Engineer and Technical Team Leader
Oct 2016 - Apr 2018
Saaland

· Developed and designed video playing systems with the ability to synchronize with the server on the Raspberry-Pi minicomputer platform and management panel on the Flask framework.

PROJECTS

Ubroker
2019
Distributed Systems Course Project

Implemented async and fault-tolerant message broker using synchronization patterns in Go.

OLAP and OLTP TPC benchmark
2018
Advanced Database Course Project

Ran tpc benchmark on multiple industry defacto databases (Postgresql, Voltdb, Spark with HDFS) and benchmarked machine and software performance.

View User Permission
2018
Django Library

Authorize and manage permissions of users to access views in Django views just like how Django manages access of users to models, including admin panel and permission classes.

Bentley-Ottmann Implementation
2018
Computer Geometrical Design Course Project

Implemented Bentley-Ottmann algorithm in general position by Python and visualized its export.

Hill Cipher Algorithm Implementation
2018
Linear Algebra Course Project

HONORS AND AWARDS

Member of Iran's National Elites Foundation June 2021 - Present

Ranked within the Top 0.8% Among 162,000 Students in Iranian University Entrance Exam for BSc in Physics & Mathematics Jul 2016

SKILLS

Programming Languages	Python, Go, C/C++
Web Technologies	Django, Docker, Kubernetes, Prometheus, Apache Kafka, GRPC
Database	PostgreSQL, Redis
Miscellaneous	Linux/Unix, Git, SQL, Jupyter
Typesetting and Presentation	LaTeX, Microsoft Office

LANGUAGES

English	IELTS 7.5 (R:8 L:7.5 S:7 W:6.5)
Persian	Native

EXTRACURRICULAR EXPERIENCES

Policy Entrepreneur Intern Dec 2019 - Sep 2020
Governance & Policy Think Tank *Under Supervision of Dr. Mirzapour*

Worked on a solution for supervision on online digital advertising platforms by creating Reg-Tech business models and wrote policy advice on development of the development of Reg-Tech type of market design.

Instructor for Thinking and Lifestyle Lesson Sep 2017 - Jun 2018
Allamehelli High-school

Designed basic life skills textbooks and taught them to 15-year-old children

Caravan Executive Director Jan 2018
Rouhollah Group *Disaster and Humanitarian Relief*

Executive director of group which contains about 40 students to build a minimum and necessary building for local people.

❶ References, further information, and proofs are available upon request

𝐢 Hyperlinks are indicated by blue text.