Mahyar Karimi

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Education

University of Tehran, School of Electrical and Computer Engineering — Tehran, Iran
B.Sc. in Computer Engineering, Current GPA: 3.9/4.0 (18.45/20) — 2018 – Present

Shahid Soltani 1 High School — Karaj, Iran
Diploma in Matehmatics and Physics, GPA: 4.0/4.0 — 2014 – 2018

- Part of *National Organization for Development of Exceptional Talents*

Selected Coursework

My top grades during the B.Sc. program are as follows:

- Advanced Programming: 20/20
- Formal Languages and Automata Theory: 19.5/20
- Operating Systems: 19.5/20
- Programming Languages and Compilers: 19.4/20
- Formal Methods in Software Engineering: 18.9/20
- Design and Analysis of Algorithms: 20/20
- Data Structures and Algorithms: 20/20
- Artificial Intelligence: 20/20
- Discrete Mathematics: 20/20
- Engineering Probability and Statistics: 17.9/20
- Computer Networks: 16/20
- Signals and Systems: 17/20

Research Experience

Institute of Science and Technology Austria — Klosterneuburg, Austria
Research Intern — Summer 2022

- Worked under supervision of Prof. Thomas Henzinger, on *Monitoring Fairness of Decision Making Processes.*
- Scholarship granted by the *Austrian Agency for International Cooperation in Education and Research* (OeAD-GmbH).

University of Tehran — Tehran, Iran
Research Assistant — August 2021 - Present

- Collaborated with Dr. Hossein Hojjat on *Causal Reasoning in Concurrent Systems.*

Work Experience

Divar — Tehran, Iran
Software Engineer — January – July 2022

- Working on the *Job Finding* project as a developer.

Tapsell — Tehran, Iran
DevOps Intern — Summer 2021

- Experimented with some infrastructure technologies.

Teaching

University of Tehran

- **Teaching Assistant**, *Advanced Programming* Course (Lecturer: Dr. Ramtin Khosravi) — Fall 2020 – Spring 2022
- **Teaching Assistant**, *Data Structures* Course (Lecturer: Dr. Fathiyeh Faghih) — Fall 2020 – Spring 2022

Publications

1. Thomas A. Henzinger, Konstantin Kueffner, Kaushik Mallik, and Mahyar Karimi. "Monitoring Algorithmic Fairness". Submitted to *29th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, 2023.

Talks and Presentations

- Monitoring of Fairness Properties in Markov Chains — September 2022
  Presented my summer internship work to Prof. Henzinger and Prof. Chatterjee's group.
- NetKAT: Semantic Foundations for Networks — Spring 2022
  Presented main ideas of the paper to a class of computer engineering students.

Projects

- Koloocheh (Python, gRPC) — June 2022
  A Peer-To-Peer File Sharing System.
- Jepeto Compiler (Java) — March – July 2021
  A Compiler for the *Jepeto* Programming Language (Practice Language Designed at My Faculty.)
- MP (Go) — March 2022
  Implementation of a Message Broker in Go.
- Dots and Boxes (C with Sockets) — October 2020
  The Classic Game, with Sockets for Multiplayer Gaming and Client-Server Communication.
- Tank Trouble (C++ with RSDL) — January 2020
  Two-Player Game of Tank Battle, Implemented with RSDL Graphics Framework.

Achievements

- Ranked top 2% nation-wide, national university entrance exam (mathematics group). — 2018
- Ranked top 1% nation-wide, national university entrance exam (English-exclusive group). — 2018
- Semi-Finalist in National Mathematics Olympiad — 2016, 2017
- Semi-Finalist in National Informatics Olympiad — 2017

Skills

- **Programming Languages:**
  - Skilled in Python, C++, C
  - Familiar with Go, Rust, Java
- **Tools and Libraries:** Numpy, Pandas, SPIN, ANTLR, NuSMV
- **Technologies:** Git, Docker, Kubernetes, Nginx, Redis

Languages

- **English:** Upper-Intermediate
  - TOEFL iBT Score:
    Total, R, L, S, W: 112, 30, 30, 27, 25
- **Persian:** Native