# Iman Gholami

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## EDUCATION

### University of Maryland, College Park
MD, USA

*Department of Computer Science*  ·  *Jan 2023 – Present*

- Graduate Student in Computer Science
- GPA: 4.0

### Sharif University of Technology
Tehran, Iran

*Department of Computer Engineering*  ·  *Sep 2017 – Sep 2022*

- B.Sc. in Computer Engineering
- GPA: 3.57

### Young Scholars' Club
Tehran, Iran

*Gold Camp*  ·  *Sep 2016 – Sep 2017*

- Member of Iran's team for International Olympiad in Informatics

### Allame Helli High School
Tehran, Iran

*Affiliated with the National Organization for Development of Exceptional Talents (NODET)*  ·  *Sep 2013 – Sep 2016*

- Diploma in Mathematics and Physics Discipline

## EXPERIENCE

### Research Assistant
Jan 2023 – Present

*University of Maryland, College Park*  ·  *MD, USA*

*Theoretical Computer Science*

- Working in a research group specializing on Approximation Graph Algorithms and Hardness of Instances.

### Teaching Assistant
Jan 2023 – Dec 2023

*University of Maryland, College Park*  ·  *MD, USA*

*Introduction to Computational Game Theory - Hajiaghayi*  ·  *Fall 2023*

- Conducted exam and programming projects, and offered guidance during office hours.

*Algorithm - Morowski, Kruskal*  ·  *Spring 2023*

- Conducted exam and assignment assessments, provided grading, and offered guidance during office hours.

### Team Leader, Data Engineer, and Software Engineer
Nov 2018 – Dec 2022

*Balad Navigation and Maps*  ·  *Tehran, Iran*

*Data Engineer/Team Leader in Data Infra Team*  ·  *Nov 2020 - Dec 2022*

- Improved and maintained Data, Data Pipelines, ETLs, and production metrics used for traffic estimation, users' search history, and other production services.
- Led the team to achieve high performance levels during the COVID-19 pandemic, effectively managing remote and hybrid work settings.
- Devised and enhanced the recruitment and mentorship procedures for Data Engineers, as well as Senior and Junior Software Engineers.

*Senior Software Engineer in Navigation Team*  ·  *Feb 2020 - Nov 2020*

- Developed and redesigned the navigation engine, which provides a route between two specific locations on the map with route instructions and alerts, Based on the A-Star algorithm and graph theory.

*Software Engineer in Traffic Team*  ·  *Apr 2019 - Feb 2020*

- Designed and developed a traffic estimator for different streets on the map based on the location logs collected from the users. The traffic estimator is a sharded system implemented with Python using Redis cluster as shared memory.

*Software Engineer in Search Team*  ·  *Nov 2018 - Apr 2019*

- Redesigned and developed a search engine for the data consist of roads, cities, and points of interest. The design was based on Elastic Search with custom scoring, ranking, and word tokenization for the map elements.

### Teaching Assistant
Sep 2019 – Jun 2022

*Sharif University of Technology*  ·  *Tehran, Iran*

*Design Algorithm - Dr. Mohammad Ali Abam*                                                                      *Fall 2019*
- Created practical assignments, prepared automatic judges, and evaluated student presentations.

*Modern Information Retrieval - Dr. Mahdieh Soleymani Baghshah*                                                   *Spring 2021*
- Designed and implemented a project to index and retrieve data from IMDb dataset, evalueted the project, designed problems for exams, and instructed in TA classes

*Discrete Structures - Dr. Hamid Zarrabi-Zadeh*                                                                   *Spring 2021*
- Designed and collected problems for assignments and exams, Scored students solutions, and instructed in TA classes.

*Design Algorithm - Dr. Hamid Zarrabi-Zadeh*                                                                      *Fall 2021*
- Head of practical assignments.

*Theory of Machines and Langueges - Prof. Ali Movaghar*                                                           *Fall 2021*
- Created assignments by selecting problems and then assessed and graded them.

### Scientific and Executive Committee Member                                                Jan 2020 – Aug 2023
*Iran's National Olympiad in Informatics (INOI)*                                                                  *Tehran, Iran*
- INOI Committee organizes Iran's national Olympiad in Informatics exams and camps. The goal of the committee is to discover and train talented students in related computer science topics.
- Designed theoretical computer science problems in areas such as graph theory, combinatorics, probabilities, algorithms. and complexity.

### Teaching Computer Science                                                                  Sep 2016 – Jan 2020
*Young Scholar's Club, Allame Helli High School, Farzanegan High School*                                          *Tehran, Iran*
- Taught data structures, algorithms, and competitive programming to prepare students for the national and international olympiad in informatics.
- Taught theoretical concepts like graph theory and combinatorics.
- Prepared contests to evaluate students.

### Co-Founder and Software Engineer                                                          Jun 2019 – Feb 2020
*Analysaur Team*                                                                                                  *Tehran, Iran*
- Assembled a team of four students at Sharif University of Technology to establish and operate a startup focused on enhancing marketing strategies and conducting analyses for external companies.
- Designed and developed an advertising and analytics system using Python/Django, Javascript, and Vue.js, which provides many services like Statistics and automatic advertising in Telegram.

### Software Engineer in Payment Technical Team                                                Jul 2018 – Oct 2018
*Cafébazaar*                                                                                                      *Tehran, Iran*
- Maintained the payment system for Cafébazaar app store.
- Produced online wallet to transfer credit to cash.

### Technical Head of Infrastructure Team                                                     Feb to Mar 2018,19,20
*Sharif Artificial Intelligence Challenge | Yearly Recurring Event*                                               *Tehran, Iran*
- AI Challenge is mainly about incorporating AI to win games. Created a scalable infrastructure to run many games on many servers in a distributed manner using Docker and Docker Swarm.

## HONORS/AWARDS

**2nd Place** | *ICPC NAS, Mid-Atlantic USA Region*                                                               Mar 2023
**3rd Place** | *National Olympiad of Computer Engineering for Undergraduate students*                             Nov 2021
- Bronze medal in 26th Olympiad among all computer engineering students across the country.

**4th Place** | *ACM/ICPC Asia Region, Tehran Site*                                                               Dec 2020
- Gold medal in ACM/ICPC Asia West Region, Tehran Site competitive contest.

**2nd Place** | *ACM/ICPC Asia Region, Tehran Site*                                                               Dec 2017
- Gold medal in ACM/ICPC Asia West Region, Tehran Site competitive contest.

**66th Place** | *International Olympiad in Informatics*                                                           Aug 2017
- Silver Medal in IOI 2017.

**7th Place** | *Iran National Olympiad in Informatics*                                                           Aug 2016
- Gold medal in 26th INOI among all the participants across the country.

**12th Place** | *Iran National Olympiad in Informatics*                                                          Aug 2015
- Silver medal in 25th INOI among all the participants across the country.

## PUBLICATIONS

**Prize-Collecting Steiner Tree: A 1.79 Approximation**
*Accepted in STOC24*                                                          Feb 2024
  - Joint Work with Ali Ahmadi, MohammadTaghi Hajiaghayi, Peyman Jabbarzade, and Mohammad Mahdavi

**2-Approximation for Prize-Collecting Steiner Forest**
*Published in SODA24*                                                          Jan 2024
  - Joint Work with Ali Ahmadi, MohammadTaghi Hajiaghayi, Peyman Jabbarzade, and Mohammad Mahdavi

## LANGUAGES

**English:** Fluent
**Persian:** Mother tongue

## RESEARCH INTERESTS

Algorithms and Complexity
Graph Theory
Distributed Systems
Large Scale Data Mining
Cloud Computing
Machine Learning

## SKILLS

**Computer Science**: Competitive Programming, Problem Solving, Algorithms, Graph Theory, Combinatorial
**Software Development**: Software Architecture Patterns, Agile
**Languages**: Python, C/C++, Java, Kotlin, Go, SQL, Javascript, HTML/CSS
**Frameworks**: Djnago, Flask, Vue.js
**Big Data**: Spark, Hadoop, Kafka, Patterns of Batch and Streaming Applications
**Development Tools**: Bash, Git, Docker, k8s, LaTeX
**Databases**: Postgres, Redis, Mongo, Elastic Search
**Libraries**: pandas, NumPy, Matplotlib, Seaborn, Scikit-Learn
**Map Tools**: OSM Tools, Tile38, Rtree, shapely

## REFERENCES

**Prof. Hajiaghayi, MohammadTaghi**                                    hajiagha@umd.edu
*Minker Professor at Computer Science Department, University of Maryland, College Park*

**Dr. Abam, Mohammad Ali**                                             abam@sharif.edu
*Assistant Professor at Computer Engineering Department, Sharif University of Technology*

**Dr. Zarrabi-Zadeh, Hamid**                                          zarrabi@sharif.edu
*Assistant Professor at Computer Engineering Department, Sharif University of Technology*

**Prof. Movaghar, Ali**                                              movaghar@sharif.edu
*Professor at Computer Engineering Department, Sharif University of Technology*

**Mohammadi, Iman**                                          linkedin.com/in/imnmohammadi
*Former CEO, Balad Navigation and Maps*