

Peyman Jabbarzade

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Education

Ph.D. in Computer Science , University of Maryland – College Park, US	Jan 2022 – present
<ul style="list-style-type: none"> • Field: Theoretical Computer Science • Designing algorithms for fundamental graph theory problems and optimizing submodular functions in the dynamic model. 	
M.Sc. in Computer Engineering , Sharif University of Technology – Tehran, Iran	Sept 2019 – Dec 2021
<ul style="list-style-type: none"> • Field: Algorithms and Computation • Studied geometric graph problems in the massively parallel computation (MPC) model. 	
B.Sc. in Computer Engineering , Sharif University of Technology – Tehran, Iran	Sept 2015 – Aug 2019

Awards

Dean's Fellowship , University of Maryland	Jan 2022 – Dec 2023
Asia West Champion , International Collegiate Programming Contest (ICPC) World Final	Apr 2018
14th Place , ACM International Collegiate Programming Contest (ACM-ICPC) World Final	May 2016
Bronze Medal 🏅, International Olympiad in Informatics (IOI)	July 2015
Gold Medal , Asia-Pacific Informatics Olympiad (APIO)	May 2015
Gold Medal , Iranian National Olympiad in Informatics	Sept 2014

Experience

Software Engineer , Balad (Map and Navigation App) – Tehran, Iran	Sept 2018 – Nov 2021
<ul style="list-style-type: none"> • Enhanced service stability and scalability and optimized inter-service communication as part of the infrastructure team. • Developed and took ownership of Balad's core service for managing and providing location-specific data. • Led a diverse team of 10 technical members to collect and clean location-specific data and refine service design with microservices. • Primarily wrote code in Python, with additional experience in C++, Java, Go, and various other tools. 	
Research Intern , Max Planck Institute for Informatics – Saarbrücken, Germany	July 2019 – Aug 2019
<ul style="list-style-type: none"> • Designed and benchmarked an energy-preserving online scheduling algorithm. 	
Software Engineer Intern , Balad (Map and Navigation App) – Tehran, Iran	June 2018 – Aug 2018
<ul style="list-style-type: none"> • Designed and implemented a novel algorithm for optimal routing of camera-equipped cars, ensuring comprehensive street coverage in Tehran within the minimum time. 	

Publications

A Dynamic Algorithm for Weighted Submodular Cover Problem 🔗	July 2024
joint work with Kiarash Banihashem, Samira Goudarzi, MohammadTaghi Hajiaghayi, Morteza Monemizadeh 41th International Conference on Machine Learning (ICML 2024). Accepted for oral presentation	
Prize-Collecting Steiner Tree: A 1.79 Approximation 🔗	June 2024
joint work with Ali Ahmadi, Iman Gholami, MohammadTaghi Hajiaghayi, Mohammad Mahdavi 56th ACM Symposium on Theory of Computing (STOC 2024).	
2-Approximation for Prize-Collecting Steiner Forest 🔗	Jan 2024
joint work with Ali Ahmadi, Iman Gholami, MohammadTaghi Hajiaghayi, Mohammad Mahdavi ACM-SIAM Symposium on Discrete Algorithms (SODA 2024). Invited for a special issue of ACM TALG	
Dynamic Algorithms for Matroid Submodular Maximization 🔗	Jan 2024
joint work with Kiarash Banihashem, Leyla Biabani, Samira Goudarzi, MohammadTaghi Hajiaghayi, Morteza Monemizadeh ACM-SIAM Symposium on Discrete Algorithms (SODA 2024).	
Dynamic Non-monotone Submodular Maximization 🔗	Dec 2023
joint work with Kiarash Banihashem, Leyla Biabani, Samira Goudarzi, MohammadTaghi Hajiaghayi, Morteza Monemizadeh 37th Conference on Neural Information Processing Systems (NeurIPS 2023).	

Dynamic Constrained Submodular Optimization with Polylogarithmic Update Time [↗](#)

July 2023

joint work with Kiarash Banihashem, Leyla Biabani, Samira Goudarzi, MohammadTaghi Hajiaghayi, Morteza Monemizadeh
40th International Conference on Machine Learning (**ICML 2023**)

A Novel Prediction Setup for Online Speed-Scaling [↗](#)

June 2022

joint work with Antonios Antoniadis, Golnoosh Shahkarami
18th Scandinavian Symposium and Workshops on Algorithm Theory (**SWAT 2022**)

Volunteer Experience

Coaching

2020 – 2023

- Coached the University of Maryland's team for ICPC 2023, leading them to a silver medal at the North America Championship and advancing to the world final. [[1 ↗](#), [2 ↗](#)]
- Led [Iran's national team for IOI 2020 ↗](#), achieving 3 gold and 1 silver medal—the best result for Iran in IOI.
- Coached Sharif University of Technology's team in the ICPC 2020 World Finals.

Scientific Committee

2017 – 2023

- Member of the Host Scientific Committee (HSC) for IOI 2017.
- Member of the Iranian National Olympiads in Informatics Scientific Committee for 6 years.
- Contributed to the preparation of the ICPC Tehran Regional Contest for 6 years.

Task Author

2015 – present

- Authored the problem "[Rectangles ↗](#)" for [IOI 2019 ↗](#).
- Managed numerous programming competitions and authored problems for selecting Iran's national team for IOI.

Technical Skills

Programming Languages: Python, C/C++, SQL

Technologies: Docker, Kubernetes, Kafka, gRPC, REST, Sentry, Redis, Prometheus, Grafana, ElasticSearch, Logstash, Kibana