Arash Pourdamghani

Room 130, FG INET/ EN 18
TU Berlin
✉ *pourdamghani (at) tu-berlin.de*
🖺 *pourdamghani.net*

Research Interests

Self-Adjusting Networks, Network Optimization, Blockchain

Education

2021-Present	**TU Berlin**, Berlin, Germany. PhD in Computer Science, continuation from University of Vienna
2020-2021	**University of Vienna**, Vienna, Austria. Direct PhD in Computer Science
2014-2019	**Sharif University of Technology**, Tehran, Iran. BSc in Computer Engineering

Work Experiences

2023-Present	**Associate Researcher**, *Research Group Digital Economy, Internet Ecosystem, and Internet Policy, Weizenbaum Institute for the Networked Society*, Berlin, Germany.
2021-Present	**Research Assistant**, *Intelligent Networks, TU Berlin*, Berlin, Germany, Under the supervision of Prof. Stefan Schmid.
2020-2021	**Research Assistant**, *Communication Technologies group, University of Vienna*, Vienna, Austria, Under the supervision of Prof. Stefan Schmid.
Summer 2018	**Research Intern**, *Computer-Aided Verification group, IST Austria*, Vienna, Austria, Under the supervision of Prof. Krishnendu Chatterjee.
Summer 2017	**Research Intern**, *Chinese University of Hong Kong*, Hong Kong, China, Under the supervision of Prof. James Cheng.

Publications

SpiderDAN: Matching Augmentation in Demand-Aware Networks , with Aleksander Figiel, Darya Melnyk, Andre Nichterlein, and Stefan Schmid.
SIAM Symposium on Algorithm Engineering and Experiments (ALENEX25)

Hash & Adjust: Competitive Demand-Aware Consistent Hashing, with Chen Avin, Robert Sama, Maryam Shiran, and Stefan Schmid.
The International Conference on Principles of Distributed Systems (OPODIS24)

Brief Announcement: Minimizing the Weighted Average Shortest Path Length in Demand-Aware Networks via Matching Augmentation , with Aleksander Figiel, Darya Melnyk, Andre Nichterlein, and Stefan Schmid.
ACM Symposium on Parallelism in Algorithms and Architectures (SPAA24)

DecentPeeR: A Self-Incentivised & Inclusive Decentralized Peer Review System , with Johannes Gruendler, Darya Melnyk, and Stefan Schmid.
Poster in IEEE International Conference on Blockchain and Cryptocurrency (ICBC24)

SeedTree: A Dynamically Optimal and Local Self-Adjusting Tree, with Chen Avin, Robert Sama, and Stefan Schmid.
IEEE Conference on Computer Communications (INFOCOM23)

Self-Adjusting Partially Ordered Lists, with Vamsi Addanki, Maciej Pacut, Gabor Retvari, Stefan Schmid, and Juan Vanerio.
IEEE Conference on Computer Communications (INFOCOM23)

Compressed Bundle Reporting for Reliable Bundle Transmission in Disruption-Tolerant Networking, with Aida-Stefania Manole, Felix Flentge, Stefan Schmid, Arash Pourdamghani, Max Franke.
Short paper in 17th International Conference on Space Operations (SpaceOps'23)

The Augmentation-Speed Tradeoff for Consistent Network Updates, with Monika Henzinger, Ami Paz and Stefan Schmid.
ACM SIGCOMM Symposium on SDN Research (SOSR22)

Software-Defined Reconfigurable Intelligent Surfaces: From Theory to End-to-End Implementation, with Christos Liaskos, Lefteris Mamatas, Ageliki Tsioliaridou, Sotiris Ioannidis, Andreas Pitsillides, Stefan Schmid and Ian Akyildiz.
Proceedings of the IEEE (PIEEE22)

Hybrid Mining: Exploiting Blockchain's Computational Power for Distributed Problem Solving, with Krishnendu chatterjee and Amir Kafshdar Goharshady.
ACM Symposium on Applied Computing (SAC19)

Probabilistic Smart Contracts: Secure Randomness on the Blockchain, with Krishnendu chatterjee and Amir Kafshdar Goharshady.
IEEE International Conference on Blockchain and Cryptocurrency (ICBC19)

Fence Insertion in Loop-less Programs, with Mohammad Taheri and Mohsen Lesani.
International Symposium on Distributed Computing (DISC19)

Awards

Spring 2024	**Student Travel Grant**, *Web4Good for WebSci 2024*.
Fall 2020	**Phd Grant for ERC project self-adjusting networks**, *ERC*.
Fall 2020	**Career Grant**, *FFG Austria*.
Fall 2019	**MacCracken PhD Fellowship**, *NYU*.
Spring 2019	**Student Travel Grant**, *ACM SIGAPP for SAC 2019*.
Summer 2018	**2-month scholarship**, *The Austrian Agency for International Cooperation in Education & Research (OeAD-GmbH)*.
Summer 2013	**Silver Medal**, *Iranian National Olympiad in Informatics (INOI)*. I was selected among more than tens of thousands of Iranian top students.

Teaching

2021-Present	**Teaching Assistant**, *TU Berlin*, Berlin, Germany.
	AI/ML in Networked Systems Seminar (2024-Present)
	Networked Systems Security Seminar (2024-Present)
	Blockchain Technology and Decentralized Applications (2024-Present)
	Advanced Topics in Networked and Distributed Systems Seminar (2023-Present)
	Cryptocurrency and Blockchain Networks Seminar (2022-Present)
	Algorithms for Networked and Distributed Systems (2022-Present)
	Network Protocols and Architectures (Winter 2021)
2015-2018	**Teaching Assistant**, *Sharif University of Technology*, Tehran, Iran.
	Algorithms Design and Analysis (Fall 2018)
	Data Structures and Algorithms (Spring 2016, Spring 2017, Spring 2018)
	Algorithmic Game Theory, Dr.Masoud Seddighin (Fall 2017)
2014-2016	**Olympiad Teacher**, *Iranian National Olympiad in Informatics Summer Camp*, Tehran, Iran.

Selected Talks

2024	ACM Symposium on Parallelism in Algorithms and Architectures
2023	Dutch Seminar on Optimization
2023	Seminar Talk at Free University of Berlin
2019 & 2023	Winter Seminar Series at Sharif University

Community Service

PC	FC-CAAW'25, PODC'24 (Junior PC)
Reviewer	TON'24, SIROCCO'23, ITU J-FET on Intelligent Surfaces 2022, ACM Computing Surveys 2020
Subreviewer	SIROCCO 2025, SIGMETRICS 2025, HoTNets 2025, DISC 2024, PODC 2024, CCS 2024, SIGMETRICS 2024, DSN 2024, NSDI 2024, PODC 2023, SPAA 2023, NSDI 2023, ESA 2022, CoNEXT 2022, DISC 2022, AFT 2022

Voluntary Service

2022	**Organizer**, *Rayacast Podcast*, Berlin, Germany.
	A collaboration with Iran Knowledge Popularization to advocate for computer science education
2018-2019	**Co-Founder**, *TEDxSUT*, Tehran, Iran.
	An independent TED-like one-day event, under the license of TEDx, to exchange ideas worth sharing
2016-2019	**Co-Founder**, *Persian Wikipedia Edit-a-thon*, Tehran, Iran.
	A workshop series to train future contributors of Persian Wikipedia.
2016-2023	**Co-Organizer and Panelist**, *Winter Seminar Series in Advanced Computer Science*, Tehran, Iran.
	A two-day event held by Iranian researchers in top rank universities from around the world.

Student Supervision

2023-Present	**Thesis Supervision**, *TU Berlin*, Berlin, Germany.
	Qingyun Ji (Bachelor and Master thesis), Nedyalko Stanchev (Master thesis), Aida-Stefania Manole (Master thesis), Johannes Gruendler (Bachelor thesis), Irem Gizer(Bachelor thesis), Vera Wagner(Bachelor thesis), Baki Berkay Uzel (Bachelor thesis), Maria Cole (Bachelor thesis), Anton Carl Juerss (Bachelor thesis)
2021-Present	**Internship Supervision**.
	Helia Yazdanyar (TU Berlin), Bahar Oveisgharan (TU Berlin), Maryam Shiran (TU Berlin), Dorsa Majdi (TU Berlin), Esra Ceylan (University of Vienna), Marzieh Aliakbarpour (University of Vienna), Siddhesh Kalekar (University of Vienna), Loric Andre (University of Vienna)

Selected Courses

Data Structures and Algorithms: (20/20),Advanced Programming: (20/20),Network Algorithms: (20/20),Graph Theory: (20/20)

Skills

Programming	Python, Java, C++, Solidity
Languages	English (advanced), Persian (native), German (basic)