

Arash Pourdamghani

Curriculum Vitae

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Research Interests

Network Optimization, Networked/Decentralized Algorithms, ML-Augmented Network Design

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, supervised by Prof. Stefan Schmid.
- 2020-2021 **Research Assistant**, *Communication Technologies group, University of Vienna*, Vienna, Austria, supervised by Prof. Stefan Schmid.
- Summer 2018 **Research Intern**, *Computer-Aided Verification group, IST Austria*, Vienna, Austria, supervised by Prof. Krishnendu Chatterjee.
- Summer 2017 **Research Intern**, *Chinese University of Hong Kong*, Hong Kong, China, supervised by Prof. James Cheng.

Education

- 2021-2025 **TU Berlin**, Berlin, Germany.
(expected) 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

Publications

^ In theoretical computer science, it is a common practice to have authors listed sorted alphabetically by default.

- ^ **Demand-Aware Multi-Source IP-Multicast: Minimal Congestion via Link Weight Optimization**,
Matthias Bentert, Max Franke, Darya Melnyk, *Arash Pourdamghani* and Stefan Schmid.
International Federation for Information Processing Networking Conference (IFIP NETWORKING 2025)
- ^ **SpiderDAN: Matching Augmentation in Demand-Aware Networks**,
Aleksander Figiel, Darya Melnyk, Andre Nichterlein, *Arash Pourdamghani* and Stefan Schmid.
SIAM Symposium on Algorithm Engineering and Experiments (ALENEX 2025)
- Hash & Adjust: Competitive Demand-Aware Consistent Hashing**,
Arash Pourdamghani, Chen Avin, Robert Sama, Maryam Shiran, and Stefan Schmid.
The International Conference on Principles of Distributed Systems (OPODIS 2024)

- ^ **Brief Announcement: Minimizing the Weighted Average Shortest Path Length in Demand-Aware Networks via Matching Augmentation,**
Aleksander Figiel, Darya Melnyk, Andre Nichterlein, *Arash Pourdamghani* and Stefan Schmid.
ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2024)
- ^ **DecentPeeR: A Self-Incentivised & Inclusive Decentralized Peer Review System,**
Johannes Gruendler, Darya Melnyk, *Arash Pourdamghani*, and Stefan Schmid.
Poster at IEEE International Conference on Blockchain and Cryptocurrency (ICBC 2024)
- SeedTree: A Dynamically Optimal and Local Self-Adjusting Tree,**
Arash Pourdamghani, Chen Avin, Robert Sama, and Stefan Schmid.
IEEE Conference on Computer Communications (INFOCOM 2023)
- ^ **Self-Adjusting Partially Ordered Lists,**
Vamsi Addanki, Maciej Pacut, *Arash Pourdamghani*, Gabor Retvari, Stefan Schmid, and Juan Vanerio.
IEEE Conference on Computer Communications (INFOCOM 2023)
- The Augmentation-Speed Tradeoff for Consistent Network Updates,**
Monika Henzinger, Ami Paz, *Arash Pourdamghani*, and Stefan Schmid.
ACM SIGCOMM Symposium on SDN Research (SOSR 2022)
- Software-Defined Reconfigurable Intelligent Surfaces: From Theory to End-to-End Implementation,**
Christos Liaskos, Lefteris Mamatas, *Arash Pourdamghani*, Ageliki Tsioliaridou, Sotiris Ioannidis, Andreas Pitsillides, Stefan Schmid and Ian F. Akyildiz.
Proceedings of the IEEE (PIEEE 2022)
- ^ **Hybrid Mining: Exploiting Blockchain's Computational Power for Distributed Problem Solving,**
Krishnendu Chatterjee, Amir Kafshdar Goharshady, and *Arash Pourdamghani*.
ACM Symposium on Applied Computing (SAC 2019)
- ^ **Probabilistic Smart Contracts: Secure Randomness on the Blockchain,**
Krishnendu Chatterjee, Amir Kafshdar Goharshady, and *Arash Pourdamghani*.
IEEE International Conference on Blockchain and Cryptocurrency (ICBC 2019)
- Fence Insertion in Loop-less Programs,**
Mohammad Taheri, *Arash Pourdamghani*, and Mohsen Lesani.
International Symposium on Distributed Computing (DISC 2019)

Awards

- Spring 2025 **Trilateral Seed Funding Initiative by TU Berlin, University of Oxford, and Siemens AG.**
- 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, New York University (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).**

Teaching

- 2021-Present **Teaching Assistant**, *TU Berlin*, Berlin, Germany.
AI/ML in Networked Systems Seminar (2024-2025)
Advanced Topics in Networked and Distributed Systems Seminar (2023-Present)
Cryptocurrency and Blockchain Networks Seminar (2022-Present)
Blockchain Technology and Decentralized Applications (2024-Present)
Networked Systems Security Seminar (2024-2025)
Algorithms for Networked and Distributed Systems (2022-2025)
Network Protocols and Architectures (Winter 2021)
- 2015-2018 **Teaching Assistant**, *Sharif University of Technology*, Tehran, Iran.
Algorithm Design and Analysis (Fall 2018)
Data Structures and Algorithms (Spring 2016, Spring 2017, Spring 2018)
Fundamentals of Programming (Fall 2015)
- 2014-2016 **Olympiad Teacher**, *Iranian National Olympiad in Informatics Summer Camp*, Tehran, Iran.

Selected Talks

- 2025 Conference on Principles of Distributed Systems (OPODIS)
2024 ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)
2023 IEEE International Conference on Computer Communications (INFOCOM)
2023 Dutch Seminar on Optimization
2023 Seminar Talk at Free University of Berlin
2022 The ACM SIGCOMM Symposium on SDN Research (SOSR)
2019 & 2023 Winter Seminar Series at Sharif University

Community Service

- PC** FC-CAAW'25, PODC'24 (Junior PC)
- Reviewer** DLT'25, TON'24, SIROCCO'23, ITU J-FET on Intelligent Surfaces 2022, ACM Computing Surveys 2020
- Subreviewer** CCS 2025, 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

Student Supervision

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

Skills

- Programming Python, C++, Java
Languages English (advanced), Persian (native)