

Mina Tahmasbi Arashloo

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University of Waterloo
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Research Interest

Networked systems, with an emphasis on software-defined and programmable networks.

Education

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| Princeton University Ph.D. and M.A in Computer Science Advisor: Jennifer Rexford Thesis: Stateful Programming of High-Speed Network Hardware | 2014 - 2019 |
| Sharif University of Technology B.Sc. in Computer Engineering (GPA: 19.50/20.00) | 2010 - 2014 |

Employment

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| University of Waterloo Cheriton School of Computer Science Assistant Professor | 2022 - present |
| Cornell University Department of Computer Science Presidential Post-Doctoral Fellow Supervised by Nate Foster and Rachit Agarwal | 2019 - 2022 |
| Microsoft Research Research Intern | Summer 2017 |
| Microsoft Azure Intern | Fall 2016 |

Honors and Recognitions

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| Heidelberg Laureate Forum Young Researcher | 2023 |
| Rising Star in Networking and Communications by N ² Women | 2021 |
| Best Paper Award at ACM SIGCOMM SOSR | 2020 |
| Cornell Presidential Post-Doctoral Fellow | 2019 - 2022 |
| ACM SIGCOMM Doctoral Dissertation Award | 2019 |
| Siebel Scholar | Class of 2019 |
| Microsoft Research Dissertation Grant | 2019 |
| EECS Rising Stars in EECS at MIT | 2018 |
| School of Engineering and Applied Science Award of Excellence, Princeton University | 2017 |

Publications

Formal Methods for Network Performance Analysis
Mina Tahmasbi Arashloo, Ryan Beckett, Rachit Agarwal
USENIX Symposium on Networked Systems Design and Implementation, **NSDI 2023**

dcPIM: Near-Optimal Proactive Datacenter Transport
Qizhe Cai, Mina Tahmasbi Arashloo, Rachit Agarwal
ACM Special Interest Group on Data Communication, **SIGCOMM 2022**

Modular Switch Programming under Resource Constraints

Mary Hogan, Shir Landau-Feibish, Mina Tahmasbi Arashloo, Jennifer Rexford, David Walker
USENIX Symposium on Networked Systems Design and Implementation, **NSDI 2022**

Towards Formally Verifying Congestion Control Behavior

Venkat Arun, Mina Tahmasbi Arashloo, Ahmed Saeed, Mohammad Alizadeh, Hari Balakrishnan
ACM Special Interest Group on Data Communication, **SIGCOMM 2021**

DBVal: Validating P4 Data Plane Runtime Behavior

K Shiv Kumar, Ranjitha K, P S Prashanth, Mina Tahmasbi Arashloo, Venkanna U., Praveen Tammana
ACM SIGCOMM Symposium on SDN Research, **SOSR 2021**

Petr4: Formal Foundations for P4 Data Planes

Ryan Doenges, Mina Tahmasbi Arashloo, Santiago Bautista, Alexander Chang, Newton Ni, Samwise Parkinson, Rudy Peterson, Alaia Solko-Breslin, Amanda Xu, Nate Foster
ACM SIGPLAN Symposium on Principles of Programming Languages, **POPL 2021**

Elastic Switch Programming with P4All

Mary Hogan, Shir Landau-Feibish, Mina Tahmasbi Arashloo, Jennifer Rexford, David Walker, Rob Harrison
ACM Workshop on Hot Topics in Networks, **HotNets 2020**

Enabling Programmable Transport Protocols in High-Speed NICs

Mina Tahmasbi Arashloo, Alexey Lavrov, Manya Ghobadi, Jennifer Rexford, David Walker, David Wentzlaff
USENIX Symposium on Networked Systems Design and Implementation, **NSDI 2020**

Tracking P4 Program Execution Path in the Data Plane

Suriya Kodeswaran, Mina Tahmasbi Arashloo, Praveen Tammana, Jennifer Rexford
ACM SIGCOMM Symposium on SDN Research, **SOSR 2020 (Best Paper Award)**

A Scalable VPN Gateway for Multi-Tenant Cloud Services

Mina Tahmasbi Arashloo, Pavel Shirshov, Rohan Gandhi, Guohan Lu, Lihua Yuan, Jennifer Rexford
ACM SIGCOMM Computer Communication Review, **SIGCOMM CCR 2018**

HotCocoa: Hardware Congestion Control Abstractions

Mina Tahmasbi Arashloo, Monia Ghobadi, Jennifer Rexford, David Walker
ACM Workshop on Hot Topics in Networks, **HotNets 2017**

SNAP: Stateful Network-wide Abstractions for Packet Processing

Mina Tahmasbi Arashloo, Yaron Koral, Michael Greenberg, Jennifer Rexford, David Walker
ACM Special Interest Group on Data Communication, **SIGCOMM 2016**

Compiling Path Queries

Srinivas Narayana, Mina Tahmasbi Arashloo, Jennifer Rexford, David Walker
USENIX Symposium on Networked Systems Design and Implementation, **NSDI 2016**

Teaching

University of Waterloo

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| CS 864: Programmable Networks | Winter 2024 |
| CS 456: Computer Networks | Fall 2023 |
| CS 864: Programmable Networks | Winter 2023 |

Cornell University

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| Online certificate series on Software-Defined Networking (SDN) | 2020 - 2022 |
| In collaboration with Nate Foster and Cornell Online Education Programs (eCornell) | |

Professional Service

Program Co-Chair

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| P4 Workshop | 2023 |
| ACM SIGCOMM Symposium on SDN Research (SOSR) | 2022 |
| The N ² Women Workshop at SIGCOMM | 2022 |

Program Committee Member

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| ACM Special Interest Group on Data Communication (SIGCOMM) | 2024 |
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| ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT) | 2024 |
| ACM Special Interest Group for computer systems performance evaluation (SIGMETRICS) | 2024 |
| USENIX Symposium on Networked Systems Design and Implementation (NSDI) | 2024 |
| USENIX Symposium on Networked Systems Design and Implementation (NSDI) | 2023 |
| ACM Symposium on Cloud Computing (SoCC) | 2022 |
| ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT) | 2021 |
| ACM/IEEE Symposium on Architectures for Networking and Communication Systems (ANCS) | 2021 |
| ACM Special Interest Group on Data Communication (SIGCOMM) | 2020 |
| ACM SIGCOMM Symposium on SDN Research (SOSR) | 2019 - 2022 |
| ACM SIGCOMM Posters and Demos | 2020 |
| Asia-Pacific Workshop on Networking (APNet) | 2020, 2022 |
| EuroP4 Workshop | 2020, 2021 |
| P4 Workshop | 2018, 2019, 2021 |

Other Committees and Panels

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| NSF CNS Panel | 2024 |
| NSF CISE Panel | 2023 |
| ACM SIGCOMM Publication co-chair | 2020 |
| NSF CNS Panel | 2020 |

External Reviewer for Conference

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| ACM SIGPLAN ASPLOS (External Review Committee) | 2021 |
| IEEE International Conference on Computer Communications | 2017 |

External Reviewer for Journal

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|---|-------------|
| IEEE/ACM Transactions on Networking (TON) | 2018 - 2022 |
| IEEE Transactions on Network and Service Management (TNSM) | 2021 |
| IEEE Transactions on Very Large Scale Integration Systems (TVLSI) | 2018 |
| Journal of Cloud Computing | 2017 |

University Service

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| Women in Computer Science (WiCS) committee | August 2022 - present |
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Student Supervision and Mentoring

Graduate Students at University of Waterloo

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| Amir Hossein Seyhani, Ph.D. | Winter 2024 - present |
| Kimiya MohammadTaheri, MMath | Fall 2023 - present |
| Pedro Mizuno, MMath | Winter 2023 - present |

Undergraduate Students at University of Waterloo

Full Time

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| Luc Edes, Undergraduate Research Fellow | Winter 2024 |
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Part Time

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| Joshua Johnson, Undergraduate Research Assistant | Spring 2024 |
| Carol Duan, Undergraduate Research Assistant | Winter 2024 |
| Beihao Zhou, Undergraduate Research Assistant | Winter 2024 |
| Crystal Zhou, Undergraduate Research Assistant | Winter 2024 |
| Zening Hao, Undergraduate Research Assistant | Winter 2024 |
| Arnav Nagpal, Undergraduate Research Assistant | Winter 2024 |
| Jiashuo Shi, Undergraduate Research Assistant | Winter 2024 |
| Harshvardhan Kakar, Undergraduate Research Assistant | Spring 2023 |
| Andrew Zang, Undergraduate Research Assistant | Spring 2023 |
| Harshvardhan Kakar, Undergraduate Research Assistant | Spring 2023 |
| Dao Bo Yang, Undergraduate Research Assistant | Winter 2023 |
| Ruiling Ma, Undergraduate Research Assistant | Winter 2023 |

Kevin Bian, Undergraduate Research Assistant
Eric Liu, Undergraduate Research Assistant

Winter 2023
Fall 2022

Mentorship

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| Qizhe Cai, Ph.D. student at Cornell University | 2019-2022 |
| Suriya Kudeswaran, M.Sc. student at Princeton University | 2018-2019 |
| Melissa Ginaldi, Undergraduate student at Cornell University | 2019-2020 |

Outreach

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| Panelist on the “Student & Early Career Networking Researcher Roundtable”, the Networking Channel | 2023 |
| Co-Organizer of the “Introduction to Network Verification” tutorial at ACM SIGCOMM | 2021 |
| Moderator of the “Women at Microsoft” panel at ACM SIGCOMM | 2021 |
| Panelist on the “Women in STEM” panel, Rutgers University - Newark Chemistry Society | 2021 |

Invited Talks

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| Dagstuhl Seminar on Network Calculus <i>Logic-Based Analysis of Network Performance</i> | April 2024 |
| ETH (Swiss Federal Institute of Technology) Zurich <i>Formal Methods for Network Performance Analysis</i> | May 2023 |
| Networking and Distributed Systems Lab at HP Labs <i>Formal Methods for Network Performance Analysis</i> | May 2023 |
| USENIX Symposium on Networked Systems Design and Implementation (NSDI) <i>Formal Methods for Network Performance Analysis</i> | April 2023 |
| University of Wisconsin Internet and Systems Research Talk Series <i>Enabling Programmable Transport Protocols on High-Speed NICs</i> | April 2021 |
| Rutgers CS Systems Research Seminar <i>Enabling Programmable Transport Protocols on High-Speed NICs</i> | November 2020 |
| USENIX Symposium on Networked Systems Design and Implementation (NSDI) <i>Enabling Programmable Transport Protocols on High-Speed NICs</i> | February 2020 |
| Guest lecture at the Computer Networks course at MIT <i>An Introduction to SmartNICs and their Use Cases</i> | November 2019 |
| Women Advancing Research, Princeton SheRoars Conference <i>Flexible Network Monitoring and Control</i> | October 2018 |
| ACM Workshop on Hot Topics in Networks <i>HotCocoa: Hardware Congestion Control Abstractions</i> | November 2017 |
| University of Washington Systems Seminar <i>SNAP: Stateful Network-wide Abstractions for Packet Processing</i> | July 2017 |
| Stanford University Networking Seminar <i>SNAP: Stateful Network-wide Abstractions for Packet Processing</i> | May 2017 |
| Network Programming Initiative (NPI) Webinar Series <i>SNAP: Stateful Network-wide Abstractions for Packet Processing</i> | March 2017 |