Mahdi Dolati

Curriculum Vitae

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Education

2015–2022   **PhD Student in Software Engineering**, *The University of Tehran*, Electrical and Computer Engineering Dept.
Dissertation title: A Robust and Efficient Method for Virtualizing the Network Functions in Software-defined Networks
Dissertation grade: Excellent
Supervisor: Dr. Ahmad Khonsari
GPA: 19.23/20.0

2013–2015   **MS in Software Engineering**, *Sharif University of Tehnology*, Computer Engineering Dept.
Thesis title: Saving Energy Consumption in Software-Defined Networks
Supervisor: Prof. Ali Movaghar
GPA: 19.29/20.0

2009–2013   **BS in Software Engineering**, *The University of Tehran*, Electrical and Computer Engineering Dept.
Project title: Efficient report generation in Cassandra
Supervisor: Dr. Ramtin Khosravi
GPA: 17.75/20.0

Work Experience

2023-Now   **Assistant Professor**, *Computer Engineering Department*, Sharif University of Technology.

2022-2023   **Postdoctoral Researcher**, *School of Computer Science*, Institute for Research in Fundamental Sciences (IPM).

2016   **Teaching Java Web Development**, *Information Technology Department of Ministry of Labour and Social Affair*, Labour and Social Security Institute.

2012-2014   **Java Web Developer**, *Institute of Applied and Intelligent Systems*, The University of Tehran.

Research Experience

2018–2019   **Visiting PhD**, *The University of Calgary*, Computer Science Dept.
Supervisor: Prof. Majid Ghaderi

Teaching

Sharif University of Technology   **Instructor**, *CE Dept.*
- Theory of Formal Languages and Automata, F23, S24, F24, S25
- Quantum Networks, S24
- Performance Evaluation of Computer Systems, F23, F24
- Quantum Computing, S25

Honours and Awards

2022 **Eyes High Postdoctoral Match-Funding Fellowship**, *the Office of the VP Research*, University of Calgary, Canada.

2021 **Best Student Paper Award**, *For paper: "SoftTap: A Software-Defined TAP via Switch-Based Traffic Mirroring"*, IEEE International Conference on Network Softwarization (NetSoft).

Nov 2018 **Student Travel Grant (STG)**, *For presenting paper at International Conference on Network and Service Management (CNSM)*, Awarded by Distributed Management Task Force (DMTF), Italy.

Nov 2017 **Research Assistant Award**, *For outstanding academic success*, Iranian National Elites Foundation, Iran.

Nov 2016 **Research Assistant Award**, *For outstanding academic success*, Iranian National Elites Foundation, Iran.

Feb 2015 **9th place**, *National-wide exam for PhD admission in Computer Science*, Software group, Iran.

Jan 2015 **Teaching Assistant Award**, *For outstanding academic success*, Iranian National Elites Foundation, Iran.

2013–2014 **2nd place**, *Among the class of 2013*, Software engineering, Sharif University of Technology.

May 2013 **9th place**, *National-wide exam for graduate admission in Computer Science*, Algorithm group, Iran.

May 2013 **16th place**, *National-wide exam for graduate admission in Computer Science*, Software group, Iran.

June 2013 **17th place**, *National scientific olympiad in Computer Engineering*, Iran.

2011–2012 **2nd place**, *Among the class of 2009*, Software Engineering, The University of Tehran.

July 2009 **Ranked 977**, *Among over 500,000s in the national-wide exam for undergraduate admission in the public universities*, Iran.

Publication (Most Recent)

Journals

[1] **M. Dolati**, S. H. Rastegar, A. Khonsari and M. Ghaderi, "Layer-Aware Containerized Service Orchestration in Edge Networks," *IEEE Transactions on Network and Service Management*, vol. 20, no. 2, pp. 1830-1846, 2023.

[2] S. Sadrhaghighi, **M. Dolati**, M. Ghaderi and A. Khonsari, "Monitoring OpenFlow Virtual Networks via Coordinated Switch-Based Traffic Mirroring," *IEEE Transactions on Network and Service Management*, vol. 19, no. 3, pp. 2219-2237, 2022.

[3] **M. Dolati**, A. Khonsari and M. Ghaderi, "Minimizing Update Makespan in SDNs without TCAM Overhead," *IEEE Transactions on Network and Service Management*, vol. 19, no. 2, pp. 1598-1613, 2022.

[4] M. Baharloo, A. Khonsari, **M. Dolati**, P. Shiri, M. Ebrahimi and D. Rahmati, "Traffic-aware performance optimization in Real-time wireless network on chip," *Nano Communication Networks*, vol. 26, p. 100321, 2020.

[5] M. Nguyen, **M. Dolati** and M. Ghaderi, "Deadline-Aware SFC Orchestration under Demand Uncertainty," *IEEE Transactions on Network and Service Management*, vol. 17, no. 4, pp. 2275-2290, 2020.

Conferences

[1] F. Tashtarian, **M. Dolati**, D. Lorenzi, M. Mozhganfar, S. Gorinsky, A. Khonsari, C. Timmerer, and H. Hellwagner, "ALPHAS: Adaptive Bitrate Ladder Optimization for Multi-Live Video Streaming," in Proc. *IEEE International Conference on Computer Communications (INFOCOM)*, London, UK, May 2025.

[2] M. Saberi, **M. Dolati**, A. Movaghar, T. Dargahi, and A. Khonsari, "Efficient Collaborative Rule Caching Through Pairing of P4 Switches in SDNs," in Proc. *IEEE Global Communications Conference (GLOBECOM)*,Cape Town, South Africa, Dec. 2024.

[3] A. Sefati, **M. Dolati**, and M. Ghaderi, "Workload Placement with Bounded Slowdown in Disaggregated Datacenters," in Proc. *IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM)*, Niagara Falls, Canada, November 2023. (Acceptance rate: $18/95 = 18.9\%$)

[4] M. M. Attar, **M. Dolati**, and M. Ghaderi, "Adaptive Model Aggregation for Decentralized Federated Learning in Vehicular Networks," in Proc. *IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM)*, Niagara Falls, Canada, November 2023. (Acceptance rate: $18/95 = 18.9\%$)

[5] S. Aalibagi, **M. Dolati**, S. Sadrhaghighi, and M. Ghaderi, "Low-Overhead Packet Loss Diagnosis for Virtual Private Clouds using P4-Programmable NICs," in Proc. *IEEE/IFIP Network Operations and Management Symposium (NOMS)*, Miami, FL, USA, May 2023. (Acceptance rate: $44/197 = 22.3\%$)

[6] S. Sadrhaghighi, **M. Dolati**, M. Ghaderi and A. Khonsari, "FlowShark: Sampling for High Flow Visibility in SDNs," in Proc. *IEEE International Conference on Computer Communications (INFOCOM)*, Virtual Conference (Due to Convid-19 Pandemic), May, 2022. (Acceptance rate: $225/1129 = 19.9\%$)

[7] V. Sohrabi, M. E. Esmaeili, **M. Dolati**, A. Khonsari, and A. Dadlani "EVBLB: Efficient Voronoi Tessellation-Based Load Balancing in Edge Computing Networks," in Proc. *IEEE Global Communications Conference (GLOBECOM)*, Virtual Conference (Due to Convid-19 Pandemic), December, 2021. (Acceptance rate: $908/2292 = 39.6\%$)

[8] (Best Student Paper Award) S. Sadrhaghighi, **M. Dolati**, M. Ghaderi and A. Khonsari, "SoftTap: A Software-Defined TAP via Switch-Based Traffic Mirroring," in Proc. *IEEE International Conference on Network Softwarization (NetSoft)*, Virtual Conference (Due to Convid-19 Pandemic), June-July, 2021. (Acceptance rate: $18/89 = 20.2\%$)

[9] A. Hosseni, **M. Dolati** and M. Ghaderi, "Bulk Transfer Scheduling With Deadline in Best-Effort SD-WANs," in Proc. *IFIP/IEEE International Symposium on Integrated Network Management (IM)*, Virtual Conference (Due to Convid-19 Pandemic), May, 2021. (Acceptance rate: $46/191 = 24.1\%$)

[10] L. Wang, **M. Dolati** and M. Ghaderi, "CHANGE: Delay-Aware Service Function Chain Orchestration at the Edge," in Proc. *IEEE International Conference on Fog and Edge Computing (ICFEC)*, Virtual Conference (Due to Convid-19 Pandemic), May, 2021. (Acceptance rate: $7/41 = 17.0\%$)

[11] F. Habibi, **M. Dolati**, A. Khonsari and M. Ghaderi, "Accelerating Virtual Network Embedding with Graph Neural Networks," in Proc. *IEEE/IFIP International Conference on Network and Service Management (CNSM)*, Virtual Conference (Due to COVID-19 Pandemic), November, 2020. (Acceptance rate: $21/106 = 19.8\%$)

[12] **M. Dolati**, M. Ghaderi and A. Khonsari "Proactive Inter-Datacenter Multicast with Realtime and Bulk Transfers," in Proc. *IEEE/ACM International Symposium on Quality of Service (IWQoS)*, Arizona, USA, June 2019. (Acceptance rate: $42/153 = 27.4\%$)

[13] M. Nguyen, **M. Dolati**, M. Ghaderi, "Proactive Service Orchestration with Deadline," in Proc. *IEEE Conference on Network Softwarization (NetSoft)*, Paris, France, June 2019. (Acceptance rate: $20/103 = 19.2\%$)

[14] **M. Dolati**, B. Hassanpour, M. Ghaderi and A. Khonsari, "DeepViNE: Virtual Network Embedding with Deep Reinforcement Learning," in Proc. *IEEE International Conference on Computer Communications (INFOCOM Workshop), Workshop on Network Intelligence*, Paris, France, April 2019.

[15] **M. Dolati**, A. Khonsari, and M. Ghaderi, "Consistent SDN Rule Update With Reduced Number of Scheduling Rounds," in Proc. *IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Mini-Conference*, Rome, Italy, November 2018. (Acceptance rate: $(19 + 21 + 15)/117 = 47.0\%$)

[16] M. H. Naghani, **M. Dolati**, S. H. Rastegar, A. Khonsari, and Majid Ghaderi, "Heavy Hitter Detection in IoT Networks: A Tomography-based Approach," Submitted to *IEEE Global Communications Conference (GLOBECOM)*, 2022.

Professional Training

2014 **Software-Defined Networking Certificate**, *At Coursera.org*, Completed with honors, Provided by prof. Nick Feamster from Georgia Institute of Technology.
http://www.coursera.org/course/sdn

Computer Skills

Languages	Python, Java, C/C++, P4, R, MATLAB
IDE	JetBrains PyCharm, IntelliJ IDEA, Android Studio
Tools	Gurobi, Mininet, NS3, GNS3, Docker, LaTeX, Git
Database	MySql, Cassandra
OS	Windows, Ubuntu

Research Interest

- Software-Defined Networking
- Network Function Virtualization
- Inter-Datacenter Networking
- Cloud Computing

Languages

Pesian	**Native Proficiency**
English	**Professional Working Proficiency**

References

Dr. Ahmad Khonsari, *ECE Dept.*, The University of Tehran.
Email: ak@ipm.ir

Prof. Ali Movaghar, *CE Dept.*, Sharif University of Technology.
Email: movaghar@sharif.edu

Dr. Ramtin Khosravi, *ECE Dept.*, The University of Tehran.
Email: r.khosravi@ut.ac.ir

Prof. Majid Ghaderi, *CS Dept.*, The University of Calgary.
Email: mghaderi@ucalgary.ca

IPM, *Institute for Research in Fundamental Sciences.*
http://www.ipm.ac.ir/

Iran Telecommunication Research Center.
https://en.itrc.ac.ir/

Last updated: January 29, 2025