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

Research Experience

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

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.

Publication

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] 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: $18/95 = 18.9\%$)

[2] 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: $18/95 = 18.9\%$)

[3] 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: $44/197 = 22.3\%$)

[4] 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: $225/1129 = 19.9\%$)

[5] 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: $908/2292 = 39.6\%$)

[6] (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: $18/89 = 20.2\%$)

[7] 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: $46/191 = 24.1\%$)

[8] 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: $7/41 = 17.0\%$)

[9] 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: $21/106 = 19.8\%$)

[10] **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: $42/153 = 27.4\%$)

[11] 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: $20/103 = 19.2\%$)

[12] **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.

[13] **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: $(19+21+15)/117 = 47.0\%$)

Teaching Experience

The University of Tehran

Teaching Assistant, *ECE Dept.*
- Internet Measurement, Spring, 2021
- Quantum Information Processing, Fall 2020, 2021
- Randomized Algorithms, Spring 2020
- Seminar for Computer Architecture, Fall 2019
- Advanced Computer Networks, Fall 2016
- Computer Networks, Fall 2015, Spring and Fall 2016, 2017
- Computer Networks Lab, Fall 2015

Sharif University of Technology

Teaching Assistant, *CE Dept.*
- Computer Simulation, Fall 2014, Spring 2015
- Software-Defined Networking, Spring 2015

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

Work Experience

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

2016   **Implementing SDN**, *Joint project of IPM and Iran Telecommunication Research Center*.

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.

Notable Courses

Phd   **The University of Tehran**, *ECE Dept.*
- Advanced Algorithm Design, 19.0/20.0
- Advanced Graph Theory, 20.0/20.0
- Machine Learning, 20.0/20.0
- Game Theory, 17.0/20.0
- Statistical Inference, 19.4/20.0
- Special Topics in Pattern Recognition, 20.0/20.0

MS   **Sharif University of Technology**, *CE Dept.*
- Data Mining, 18.3/20.0
- Advanced Operating Systems, 18.7/20.0
- Theory of Distributed Systems, 19.8/20.0
- Verification of Reactive Systems, 18.6/20.0
- Performance Evaluation of Computer Systems, 19.3/20.0

BS   **The University of Tehran**, *ECE Dept.*
- Discrete Mathematics, 17.1/20.0
- Design and Analysis of Algorithms, 20.0/20.0
- Theory of Formal Languages and Automata, 20.0/20.0
- Design and Implementation of Compilers, 19.6/20.0
- Design and Implementation of Programming Languages, 19.0/20.0
- Computer Networks, 16.5/20.0
- Computer Simulations, 18.6/20.0

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/

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