

Masoud Hemmatpour

mashemat@gmail.com

Nationality: Iranian (Permanent Residency Norway)

Date of Birth: May 29, 1983

Residence: Tromsø, Norway

Gender: Male

[Online links to resources are included for easy access.](#)

Personal Page: <https://mashemat.github.io>

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Positions

- **The Arctic University of Norway (UiT)** Tromsø, Norway
Postdoctoral Fellow May. 2023 – Current
 - **Project**
 - * Energy-efficient in-network intelligent framework for edge
- **Simula Lab** Oslo, Norway
Adjunct Research Scientist May. 2023 – Dec. 2023
 - **Project**
 - * In-network computing in HPC systems
- **Simula Lab** Oslo, Norway
Postdoctoral Fellow Mar. 2021 – May. 2023
 - **Project**
 - * In-network computing in HPC systems
- **Cisco systems** Paris, France
Senior Software engineer Jan. 2019 – Jan. 2020
 - **Project**
 - * Control and management plane in cloud-native environment

Education

- **Politecnico di Torino** Torino, Italy
PhD in computer engineering Nov. 2015 – Sept. 2019
 - **Thesis**
 - * High Performance Computing using InfiniBand based clusters
- **Politecnico di Torino** Torino, Italy
MSc in communications and computer networks engineering Oct. 2012 – Oct. 2015
 - **Thesis**
 - * Read-copy update synchronization technique improvement by hardware message passing
 - Research project at École Polytechnique Fédérale de Lausanne (EPFL)
- **Azad university of najaf abad** Najaf abad, Iran
Bachelor of Science, Computer Software Engineering 2005 – 2008
 - **Thesis**
 - * Implementing bulk SMS (Short Message Service) sender with AT commands in Delphi programming
- **Bu-Ali Sina University** Hamedan, Iran
Association Degree, Computer Software 2002 – 2004
 - **Thesis**
 - * Implementing answering machine with TAPI, Delphi programming

Work experience

- Energy-efficient intelligent in-network framework (European Union's Horizon MISO project - The Arctic University of Norway)

- The goal of MISO project is to develop and demonstrate an autonomous in-situ observation platform for use in hard-to-reach areas. I develop an intelligent framework to reduce the power consumption of end nodes. Moreover, I develop an in-network intelligent solution to detect anomalies of IoT nodes.
- Highly Accurate and Autonomous Programmable Platform for Providing Air Pollution Data Services to Drivers and Public (HAPADS - The Arctic University of Norway)
 - HAPADS is ambitious project that will custom design and build a novel smart and autonomous air monitoring platform which, will enable end-users (drivers, transport companies, municipalities and the at-large public) to make information-driven decisions to mitigate air pollution exposure for the people.
- In-network computing (Simula Research Laboratory)
 - Exploring in-network computing research directions.
 - Working on several programmable network devices including FPGA and Soc based SmartNIC as well as programmable switch.
- Network management (Linux Foundation Collaborative Project in Cisco Systems)
 - Designing and implementing a Yet Another Next Generation (YANG) model to enable VPP to communicate with remote controllers such as OpenDaylight (ODL) and Network Services Orchestrator (NSO) in order to receive telemetry and push configuration.
 - Enabling VPP to communicate with a network routing software suite such as FRRouting (FRR).
- Remote Direct Memory Access (RDMA) (Research project Politecnico di Torino & T.J. Watson IBM research center)
 - Investigating performance challenges of RDMA operations in InfiniBand based clusters.
 - Designing and implementing an RDMA enabled in-memory key-value store.
- Health care system (OPportunities for active and healthy LONGevity (OPLON) project)
 - Designing and implementing a holistic approach to detect an abnormal gait in order to avoid an unintentional fall and in case of a fall detection reduces injuries and notifies care givers.
- Fault injection (Research Project Politecnico di Torino & University of Montpellier)
 - Designing and implementing a framework to automatically inject faults into a real-time operating system (i.e., FreeRTOS) for STM32 Discovery boards.
- Linux kernel scheduler optimization (Research Project at Politecnico di Torino)
 - Introducing new parameter (i.e., the number of data cache misses) at the given time slice to the Completely Fair Scheduler (CFS). In this way, the scheduler can penalizes processes which waste CPU cycles to handle cache miss instead of the main task.
- Synchronization algorithm on multi core architecture (Research Project at Politecnico di Torino)
 - Implementing a framework to evaluate different synchronization methods including non-blocking algorithms.
- Urban air quality (Cyclair project Torino Living Lab)
 - Investigating the relevance of height in dust monitoring systems based on Libelium Waspote connected to a dust sensor OPC-N2.
- System-on-a-chip (Research project Politecnico di Torino & École polytechnique fédérale de Lausanne (EPFL))
 - Exploiting hardware message passing feature in system-on-a-chip CPU (i.e., TILE-Gx36) in order to enhance the performance of the non-blocking synchronization algorithm.
- Co-founder Fanavarani Pasargad J, Linux Professional Institute (LPI) partner
 - Teaching LPI courses to universities and organizations

Submitted proposals

- NetCrush: Crushing Communication wall with In-Network Machine Learning, 2023, excellence: 6/7

- Smart RDMA: In-Network Accelerated Processing of Big Data, 2022, excellence: 5/7

Visiting programs and talks

- Laboratory for Information, Networking and Communication Sciences (LINCS), 2023
- Computing Infrastructure Group, University of Oxford, 2023
- ExpoLab, University of California Davis, 2018
- Computer science department, Purdue University, 2017
- Distributed Systems Laboratory, École Polytechnique Fédérale de Lausanne (EPFL), 2015

Scientific community engagement

- Program Committee in 17th Asian Conference on Intelligent Information and Database Systems (ACIIDS), 2024
- Technical Program Committee (TPC) in 7th European P4 Workshop (EuroP4), 2024
- Session manager in SmartGridComm, 2024
- Organizing committee in Pint of Science Tromsø, 2024
- Chair of Academic Affairs of Tromsø Doctoral Students and Postdocs in Arctic University of Norway, 2023
- Organizing committee in Computer Software and Applications Conference (COMPSAC), 2017
- Reviewers in several conferences and journals such as TKDE, TPDS, Supercomputing, 2015-2024

Awards and Grants

- Åsgard Horizon, 2023
- Best Dissertation Award Politecnico di Torino, 2019
- Quality Award Politecnico di Torino, 2018
- Quality Award Politecnico di Torino, 2017
- Provincial math prize, math house Isfahan, 2000

Languages with proficiency

- Norwegian, Elementary, A2 level
- English, Fluent
- Italian, Upper Intermediate, B2 level
- Persian, Native

References

Noa Zilberman

Associate professor at the department of engineering science, University of Oxford, UK
Email: noa.zilberman@eng.ox.ac.uk

Amir TaherKordi

Professor at the department of computer science, University of Oslo, Norway
Email: amirhost@ifi.uio.no

Mohammad Sadoghi

Associate professor at the department of computer science, University of California Davis, USA
Email: mo.sadoghi@expolab.org