

## Summarized CV of Mohammadamin Ajdari

[Assistant Professor at Tsinghua University \(Shenzhen Campus\)](#)

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### **Brief Intro:**

Mohammadamin is highly interested in doing novel *research* and *teaching* in all aspects of computer architecture and system software, with special focus on accelerating data-centric workloads (esp. emerging ML applications). His 11+ years of experience in doing system architecture research in academia, 5+ years of industry experience as Senior Researcher, Research& Technology Director and Product Manager roles in the domain of data storage systems, a history of authoring 14+ research papers in top-tier international venues (ASPLOS, MICRO, etc.), and a number of prestigious awards show his interests and expertise!

Mohammadamin is currently an Assistant Professor in Institute of Data and Information (IDI) at Tsinghua Shenzhen International Graduate School (SIGS). Before joining Tsinghua SIGS, Mohammadamin served as various R&D positions particularly Director of System Research & Technology for six years (2019-2025) at HPDS Corp. He also collaborated with DSN lab in the Department of Computer Engineering at Sharif University of Technology as a Senior Research Associate. Before joining HPDS, he received a PhD degree in computer science and engineering from POSTECH (in South Korea) in 2019 (, supervised by Prof. Jangwoo Kim), and a BSc. degree in electrical engineering from Sharif University of Technology (in Iran) in 2013.

## **CURRENT RESEARCH INTERESTS**

- All Aspects of Computer Architecture
- Storage System Architectures
- Computer System Modeling
- Machine learning/AI Infrastructures and Workloads
- Non-Traditional/Emerging Compute Infrastructures

## **Work Experience**

### **@ Tsinghua University** (*Shenzhen, China*)

- Assistant Professor at Tsinghua Shenzhen International Graduate School [**April 2026- Present**]

### **@ HPDS Corp** (*Tehran, Iran*)

- Director of System Research & Technology [Oct 2022 – Dec 2025]
- Research Team Lead [May 2021- Oct 2022]
- Senior R&D Engineer/Researcher[Dec 2019- May 2021]

### **@ Sharif University of Technology** (*Tehran, Iran*)

- Senior Research Collaborator with DSN Lab, CE Department, Sharif University of Technology
  - Period: [Sep 2020- Dec 2025]
  - Guiding the MS/PhD students in their system research, in close collaboration and supervision of Prof. Hossein Asadi.

### **@Sharif ICT Innovation Center** (*Tehran, Iran*)

- Lead Engineer[ June 2020- Sep 2021]
  - Leading a team of ~4 engineers to develop a hyper-converged infrastructure

## ACADEMIC EDUCATION

- **Direct PhD in Computer Science and Engineering**, [2013- 2019]  
*Pohang University of Science and Technology (POSTECH)*, South Korea  
PhD Dissertation Title: *A hardware-accelerated inline data reduction for modern SSD Arrays*  
PhD Advisor: Prof. Jangwoo Kim
- **B.Sc in Electrical Engineering**, [2008-2013]  
*Sharif University of Technology*, Tehran, Iran  
BSc Project Title: *Design and hardware construction of a special processor, along with the design of its graphical simulator for pedagogical purposes*  
Project Adviser: Prof. Mahmoud Tabandeh

## MENTORED STUDENTS/ENGINEERS

- *MS Students at DSN lab, CE Department, Sharif University of Technology*
  - MohammadMahdi Gharegozlou [2023- 2025] Dual Storage Controllers
  - Ava Dezhban [2022 – 2024] - HDD Reliability Characterization
  - Mohammad Hossein Gerami [2022 –2024] Dual Storage Controllers
  - Masoud Khanalizadeh Imani[2021- 2024] - I/O Caching
  - Kimia Abdi [Sep 2021-Mar 2024] - RAID Systems
  - Behrang Montazerzohour [2021-2024] - RAID Systems
  - Pouria Peykani Sani [2021 – 2023] - I/O Caching
- *Ph.D. students at DSN Lab, CE Department, Sharif University of Technology*
  - Elham Adibi [2020 – 2025] HPC System Architecture
  - Amir Hossein Moradi [2020 – 2025] Emerging Storage Systems
  - Mehdi Moradi [2022 – 2025] Storage System SW Reliability
- *Selected research engineers at HPDS Corp.*
  - Alireza Otoofi [2023 – 2024] – Storage System Testing Methodology
  - Mohammad Hosseininia [2022 – 2024]- Various topics about storage systems esp HW/SW evaluation methodologies
  - Amir Hossein Bazkhanei [2021- 2022]- NVMe SSD Caching
  - Mahdi Bahrami [June 2020 – Dec 2020] – Data Reduction for SSDs
- *PhD student at Seoul National University (SNU)*
  - Wonsik Lee [2018 – 2019] – FPGA-based design/implementation

## HONORS/AWARDS

- As the **technical representative of HPDS Corp, presenting HPDS** latest data storage products/solutions **to ICT ministers** from *Economic Corporation Organization (ECO) countries* (note: ~10 fast growing countries in western part of Asia constitute ECO group), Tehran, Iran, [July 2023]
- **Introducing HPDS Flagship storage product (SANGold) on Iran’s National TV**, [ Aug. 2023]

- **“Honorable Mention”** of one my first-authored papers as a top architectural paper in *IEEE MICRO Top Picks 2019*
  - **“Best Paper Nomination”** for part of my PhD thesis published in *HPCA 2019*
  - Winner of *POSCO Asia Fellowship* from *POSCO TJ Park Foundation* (2013- 2015)
  - **Ranked 1<sup>st</sup> in the B.Sc. project competition** held among all students who defended their B.Sc. projects in 2012 in *Department of Electrical Engineering, Sharif University of Technology*(news at <http://www.suta.org/> )
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## **RESEARCH PUBLICATIONS:**

1. A. Sedaghatgoo, **M.Ajdari**, E. Teymouri, H. Asadi, “Do Not Get Fooled: Use True Utilization on High-Performance Storage Devices”, *IEEE International Symposium on Performance Analysis of System and Software (ISPASS)*, 2026
2. A. Dezhban, **M.Ajdari**, H. Asadi, “Characterization and Performance Analysis of Aging Effect on Enterprise HDDs”, *IEEE International Symposium on Performance Analysis of System and Software (ISPASS)*, 2026
3. MM. Gharaguzlu, **M.Ajdari**, H. Asadi, “Smart Prediction of I/O Accesses in Enterprise Workloads to Accelerate Data Serving During Array Reconstruction”, *IEEE Computer Architecture Letters (CAL)*, 2026
4. E. Adibi, **M.Ajdari**, P. Arefijamal, A. Ahmadi-Tonekaboni, H. Asadi, “I/O-ETEM: an I/O-Aware Approach for Estimating Execution Time of Machine Learning Workloads”, *IEEE Computer Architecture Letters (CAL)*, 2025
5. **M. Ajdari**, B. Montazerzohour, K. Abdi, “Empirical Architectural Analysis on Performance Scalability of Petascale All-Flash Storage Systems”, *IEEE Computer Architecture Letters (CAL)*, 2024
6. **M.Ajdari**, P. Peykani Sani, A. Moradi, M. Khanalizadeh Imani, A.H. Bazkhanei, H.Asadi, “Re-architecting I/O Caches for Emerging Fast Storage Devices”, *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2023, Vancouver, Canada
7. **M. Ajdari**, P. Raaf, M. Kishani, R. Salkhordeh, H. Asadi, A. Brinkmann, “An Enterprise Open-Source Data Reduction Architecture for All-Flash Storage Systems”, *ACM SIGMETRICS*, 2022, India
8. **M. Ajdari**, P. Raaf, M. Kishani, R. Salkhordeh, H. Asadi, A. Brinkmann, “An Enterprise Open-Source Data Reduction Architecture for All-Flash Storage Systems”, *Proceedings of ACM on Measurement and Analysis of Computing Systems (POMACS)*, 2022
9. **M. Ajdari**, W. Lee, P. Park, J. Kim, J. Kim, “FIDR: A Scalable Storage System for Fine-Grain Inline Data Reduction With Efficient Memory Handling”, *International Symposium on Microarchitecture (MICRO) 2019*, Oct 2019, Ohio, USA
10. **M. Ajdari**, P. Park, J. Kim, D. Kwon, J. Kim, “CIDR: Cost-effective In-Line Data Reduction System for Terabit-per-Second Scale SSD Arrays”, *International Symposium on High Performance Computer Architecture (HPCA) 2019*, Feb 2019,

Washington DC, USA <Best Paper Nominee> <IEEE MICRO TOP Picks Honorable Mention>

11. D. Kwon, J. Ahn, D. Chae, **M. Ajdari**, J. Lee, S. Bae, Y. Kim, J. Kim, “DCS-Ctrl: A fast and flexible device-control mechanism for device centric server architecture”, *International Symposium on Computer Architecture (ISCA) 2018*, June 2018, Los Angeles, California, USA
12. J. Joe, G. Lee, H. Jang, J. Lee, **M. Ajdari**, J. Kim, “DiagSim: Systematically diagnosing simulators for healthy simulations”, *ACM Transactions on Architecture and Code Optimization (TACO)*, 2018
13. **M. Ajdari**, P. Park, D. Kwon, J. Kim, J. Kim, “ A scalable HW-based inline deduplication for SSD arrays”, *IEEE Computer Architecture Letters (CAL)*, Sep 2017
14. **M. Ajdari**, M. Tabandeh, “An educational hardware/software tool for the first course in computer architecture”, *Iranian Journal of Science and Technology, Transactions on Electrical Engineering, Springer International Publishing*, May 2016
15. J. Ahn, D. Kwon, Y. Kim, **M. Ajdari**, J. Lee, J. Kim, “DCS :A fast and scalable device-centric server architecture”, *International Symposium on Microarchitecture (MICRO) 2015*, Dec 2015, Waikiki, USA
16. **M. Ajdari**, M. Tabandeh, “Design and construction of an 8-bit Computer, along with the design of its graphical simulator for pedagogical purposes”, *In Proceedings of 15<sup>th</sup> International Conference on Interactive Collaborative Learning (ICL)*, Sep 2012, Austria, pp. 1-5

### SELECTED INVITED TALKS

- “Do Not Get Fooled: Use True Utilization on High-Performance Storage Devices”, *IEEE International Symposium on Performance Analysis of System and Software (ISPASS)*, April 2026, [Recorded Video Presentation]
- “Characterization and Performance Analysis of Aging Effect on Enterprise HDDs”, *IEEE International Symposium on Performance Analysis of System and Software (ISPASS)*, April 2026, [Recorded Video Presentation]
- "Data Storage Concepts and Challenges of SAN Storage Design", *HPDS Corp. 2-Day Internal Workshop*, July 2024, Tehran, Iran
- “Toward a Scalable Architecture for Data Reduction And I/O Caching in Modern SAN Storage Systems”, *Winter Seminar Series (WSS) at Sharif University of Technology*, 2023, Tehran, Iran
- “Re-architecting I/O Caches for Emerging Fast Storage Devices”, *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2023, Vancouver, Canada [Remote Presentation]
- “An Enterprise Open-Source Data Reduction Architecture for All-Flash Storage Systems”, *ACM SIGMETRICS*, 2022, India [Remote Presentation]
- “A Scalable System Design for Data Reduction in Modern Storage Systems”, *Data Talk Series, 2020, Sharif University of Technology*, Tehran, Iran
- “Cost-effective In-Line Data Reduction System for Terabit-per-Second Scale SSD Arrays”, *Representation of our HPCA paper at Korea Computer Congress*, 2019, Jeju Island, South Korea

- “DCS :A fast and scalable device-centric server architecture”, Co-Presenter in the Poster Session, *International Symposium on Microarchitecture (MICRO) 2015*, Waikiki, USA

**LANGUAGE SKILLS:**

- **English:** Fluent
- **Korean:** Intermediate/Advanced
- **Chinese:** Beginner
- **Farsi (Persian):** Native