Masoud Khanalizadeh Imani

Computer Architecture & Storage Systems Researcher

📍 Tehran, Iran · ✉ masoud.khanalizadehimani@gmail.com · 📞 +98 919 646 9044

in LinkedIn · ℞ ResearchGate · ⚙ GitHub · 🌐 Website

🎓 Education

- **Sep 2020 – Mar 2023**
  M.Sc. in Computer Engineering (Computer Architecture)
  Sharif University of Technology (SUT), Tehran, Iran
  GPA: **16.85/20**
  Thesis: Reliability Characterization of Open-Source I/O Caching Modules in Data Storage Systems
  Advisor: Prof. Hossein Asadi | **Research Lab:** ↗ Data Storage, Networks, & Processing (DSN) Lab
  Focus: Fault-Tolerant Systems, Hardware Security & Trust, SoC Design, Advanced Computer Networks, On-Chip Communications

- **Oct 2012 – Jun 2017**
  B.Sc. in Computer Engineering (Software Engineering)
  Islamic Azad University (IAU), Robat Karim Branch, Iran
  GPA: **15.79/20**
  Thesis: Solving Sudoku Puzzle by Genetic Algorithm Using C++
  Advisor: Dr. Seyyed Ali Asghar Shahidian
  Focus: Microprocessor, Computer Architecture Lab, Operating Systems, Logic Design Lab, Software Project

📄 Publications

- **March 2023**
  Authors: Mohammadamin Ajdari, Pouria Peykani Sani, Amirhossein Moradi, **Masoud Khanalizadeh Imani**, Amir Hossein Bazkhanei, Hossein Asadi
  Title: *Re-architecting I/O Caches for Emerging Fast Storage Devices*
  In Proceedings of the 28th ACM International Conference on Architectural Support for Programming Languages and Operating Systems, Volume 3 **ASPLOS 2023**, Association for Computing Machinery (ACM), New York, NY, USA, pp. 542–555.
  🔗 https://doi.org/10.1145/3582016.3582041

- **Under Review**
  Authors: Pouria Peykani Sani*, **Masoud Khanalizadeh Imani***, Mohammadamin Ajdari, Hossein Asadi
  *These authors contributed equally to this work.
  Title: *A Near-Optimal SSD Cache Partitioning Framework to Maximize Performance-per-Cost in SAN Storage Systems*

⚗ Research Interests

- Data Storage Systems
- I/O Caching
- HPC
- Operating Systems
- Computer Architecture
- Cloud Systems
- IoT
- Computer Networks

💼 Experience

- **Feb 2021 – Aug 2024**
  Researcher & Developer — Data Storage Systems
  High-Performance Data Storage (HPDS) Lab, Tehran, Iran, ↗ Company Website
  - Worked on SSD/HDD I/O caching with both performance and reliability characterization.
  - Designed and evaluated storage modules and prototypes.

- **Aug 2013 – Feb 2018**
  Network Technician & Help Desk
  Aria Technical Services, Tehran, Iran
  - Provided IT support including network setup, desktop maintenance, and basic CCTV system installation.

🏛 Academic Experience

- **Apr 2025**
  Question Designer & Judge — Robotics Track
  HardWar 2025 Annual Competition, Sharif University of Technology
  Designed robotics questions and served as a judge in an annual national student hardware competition.
  🔗 Competition Website

- **Feb 2022 – Jun 2022**
  Teaching Assistant — Logic Circuits Lab
  Sharif University of Technology
  Assisted students in lab experiments and supported course instruction. Supervisor: Dr. Shaahin Hessabi

- **Oct 2015 – Jun 2017**
  Founder & Team Lead — Robotics Lab
  Islamic Azad University (IAU), Robat Karim Branch, Iran
  Established a robotics lab with university funding, managed a student team building maze-solving and path-finding robots, and led participation in national competitions. 🔗 Project Documentation & Videos

💡 Patents (Applications in Preparation)

- **Testing platform for disk power outages**
- **Disk wipe and clone platform**
- **Software module for automatic I/O cache size optimization**

📑 Selected Projects

- **Aug 2025**
  CIMulator — Computation-In-Memory Simulator
  Independent Project — Sole Designer & Developer
  Interactive Jupyter-based simulator for memristor devices and crossbar arrays with real-time plotting and intuitive GUI. 🔗 GitHub Repository

- **2023–2024**
  PASS — I/O Cache Test & Analysis Framework
  Developed as part of ASPLOS'23 paper experiments
  Framework for testing, analyzing, and benchmarking I/O cache modules across different configurations.
  🔗 GitHub Repository

- **2021–2024**
  Reliability Analysis of Open-Source I/O Cache Modules
  Research Project at HPDS Lab, Tehran
  Conducted empirical evaluation of multiple open-source cache modules under diverse workloads to characterize stability and fault-tolerance.

  For a complete list of projects, see my 🔗 GitHub profile.

✳ Workshops & Certificates

- **Apr 2025**
  10th Winter Seminar Series (WSS10)
  Sharif University of Technology • 🔗 Certificate

- **Apr 2025**
  5-Day Gen AI Intensive
  Google/Kaggle • 🔗 Certificate

- **2015–2016**
  MCSE 2012
  CANDO Institute, Tehran, Iran • 🔗 Certificate

- **Jul 2015**
  Network+
  CANDO Institute, Tehran, Iran • 🔗 Certificate

🛠 Skills

Software / Tools

Tool	Level	Tool	Level	Tool	Level
LaTeX	Intermediate	**Xilinx ISE**	Intermediate	**Linux**	Intermediate
Draw.io	Professional	**Visio**	Professional	**Excel**	Professional
VMwareWorkstation	Intermediate	**Word**	Professional	**PowerPoint**	Professional
Proteus	Intermediate	**InShot**	Professional	**Git**	Intermediate

Programming Languages

Language	Level
C/C++	Intermediate
Bash	Intermediate
Python	Intermediate

Soft Skills

Skill
Team-oriented
Independent
Adaptable

🏆 Honors

- **Sep 2020** Ranked 41st (Top 0.03%) in Iran's National Entrance Exam for M.Sc. in Computer Engineering.
- **Jul 2009** Provincial rank, Kharazmi Student Festival. 🔗 Certificate

🅰🈂 Languages

Language	Proficiency
Persian (Farsi)	Native
English	Intermediate — preparing for TOEFL

👥 References

Dr. Hossein Asadi
Professor, Computer Engineering, Sharif University of Technology
✉ asadi@sharif.edu
Master's Advisor

Dr. Shaahin Hessabi
Associate Prof., Computer Engineering, Sharif University of Technology
✉ hessabi@sharif.edu
TA Supervisor & Course Instructor (SoC Design, Testability)

Dr. Mohammadamin Ajdari
Head of R&D, HPDS Lab, Tehran
✉ m.ajdari@sharif.edu
Manager at HPDS & Co-author

Dr. Alireza Ejlali
Associate Prof., Computer Engineering, Sharif University of Technology
✉ ejlali@sharif.edu
Course Instructor (Fault-Tolerant Systems)

Additional references available upon request.