

# ALI DAVOUDABADI FARAHANI

No. 5, 30<sup>th</sup> Vali-Asr Street, Shahrak-e-ghods, Qom, Iran  
[www.alifarahani.com](http://www.alifarahani.com) • [ali.farahani@sharif.edu](mailto:ali.farahani@sharif.edu) • +98 (921) 786 9334

## EDUCATION

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**Sharif University of Technology** Tehran, Iran  
M.S., Computer Engineering Oct. 2021 – Jun. 2024  
GPA: 18.43 (out of 20) • **4 (out of 4)**  
Thesis: *I/O Workload Characterization in High-Performance Computing (HPC) Applications*  
Supervisor: Dr. Hossein Asadi

**University of Tehran** Tehran, Iran  
B.S., Computer Engineering Sep. 2016 – Jul. 2020  
GPA: 18.52 (out of 20) • **3.9 (out of 4)**  
Thesis: *Presenting a Meta-Heuristic Algorithm for Optimizing Scheduling and Energy Consumption in Fog Computing*  
Supervisor: Dr. Zahra Movahedi

## RESEARCH INTERESTS

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- High-Performance Computing
- Data Storage Systems
- Systems for Machine Learning
- Operating Systems
- Cloud Computing
- Distributed Systems

## RESEARCH EXPERIENCE

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**Sharif University of Technology** Tehran, Iran  
*Graduate Research Assistant, **Data, Storage & Processing (DSN) Lab*** Oct. 2021 – Present

- Conducted research in the field of “High-Performance Computing” to characterize machine learning applications under the supervision of Dr. Hossein Asadi
- Developed new techniques and platforms for characterizing data-intensive applications that trace every aspect of the system, from Disk I/O to CPU/GPU utilization
- Presented a modern HPC architecture optimized for such applications in terms of runtime and resource management based on the characterization results

**Sharif High-Performance Computing (HPC) Center** Tehran, Iran  
*Researcher, **High-Performance Virtual Machines (HPVM) Section*** Jan. 2022 – Present

- Worked with a team of experts in the fields of Virtualization and Clustering

## TEACHING EXPERIENCE

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### Sharif University of Technology

Tehran, Iran

*Teaching Assistant, Department of Computer Engineering*

Oct. 2021 – Present

- Advanced Operating Systems (Graduates)
- Operating Systems (Undergraduates)
- Computer Architecture (Undergraduates)

### University of Tehran

Tehran, Iran

*Teaching Assistant, Department of Electrical & Computer Engineering*

Oct. 2018 – Jul. 2020

- Data Structures & Algorithms (Undergraduates)
- Fundamentals of Computer Programming (Undergraduates)
- Calculus 1 & 2 (Undergraduates)

## INDUSTRY EXPERIENCE

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### Yaplle

Tehran, Iran

*Senior Software Developer, Part-time*

Feb. 2023 – Sep. 2023

- Developed a state-of-the-art and easy-to-use approach for doing banking transactions
- Collaborated with a motivated and productive team of FinTech experts, improving my skills in teamwork and modern technologies

### OMEGA

Tehran, Iran

*Software Developer, Full-time*

Aug. 2020 – Mar. 2021

- Implemented software and hardware projects for known organizations and large-scale companies of Tehran province, e.g., Tehran Municipality
- Accomplished backend services and mobile applications with languages: Python and Dart

## ACADEMIC PROJECTS

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- **I/O Workload Characterization:** A modern Python-based platform that monitors and characterizes a Linux machine running any data-intensive application and provides textual and visual results from many aspects of the system, such as CPU/GPU/Disk utilization, Disk bandwidth and IOPS, I/O access frequency, reuse distance, etc. [[link](#)]
- **High-Performance Virtual Machine (HPVM):** Contributed to building the hardware and software infrastructure of HPVM in Sharif HPC. Responsibilities included Setting up the Intel Xeon CPUs, modern NVIDIA GPUs, high throughput storages, wiring interconnection networks (hardware side) and installing operating systems, Parallel File Systems (PFS), VMware ESXi hypervisor, monitoring tools, e.g., Zabbix (software side).
- **DSN Laboratory Website:** Contributed to updating the Data Storage and Processing (DSN) lab website for the Department of Computing Engineering, Sharif University of Technology [[link](#)]

## SKILLS

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- Strong knowledge of programming languages: C, C++, Java, and Python for software and Verilog/VHDL for hardware development
- Experienced in tools and environments: MATLAB, LaTeX, Linux Kernel Programming, and VMware ESXi & vCenter
- **Language Skills: English** (*Full professional proficiency*), **Persian** (*Native proficiency*)

## HONORS & AWARDS

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- Ranked as 2<sup>nd</sup> top student among the bachelor's graduate class, University of Tehran
- Ranked within the top 10% of the master's graduate class, Sharif University of Technology
- Ranked within the top 1% of ~200,000 students participating in the Iranian University Entrance Exam (called "Konkur")
- Ranked within the top 0.5% of ~20,000 students participating in the University Entrance Exam for Master of Computer Engineering
- Awarded as "Top 3 IoT Startups" among all participants in the "IoT Startup Competition Festival" held at the University of Tehran

## MEMBERSHIPS

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- Prominent member of the student's scientific association, Department of Electrical and Computer Engineering, University of Tehran (2019 – 2020)
- Editor in chief of the student's scientific "Zeros & Ones" magazine, Department of Electrical and Computer Engineering, University of Tehran (2018 – 2020)
- Examiner of the annual hardware competition called "Hard War," Department of Computer Engineering, Sharif University of Technology (2023)

## REFERENCES

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### **Hossein Asadi, Professor**

*Sharif University of Technology, Department of Computer Engineering*

Email: [asadi@sharif.edu](mailto:asadi@sharif.edu)

### **Zahra Movahedi, Assistant Professor**

*University of Tehran, College of Engineering*

Email: [zmovahedi@ut.ac.ir](mailto:zmovahedi@ut.ac.ir)

### **Mohammadamin Ajdari, Senior Researcher**

*High-Performance Data Storage (HPDS) Corp., Tehran, Iran*

Email: [m.ajdari@sharif.edu](mailto:m.ajdari@sharif.edu)