

## ALI DAVOUDABADI FARAHANI

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### 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 of Machine Learning Applications in High-Performance Computing (HPC) Centers*

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](#)]
- **Featured Slurm:** Edited Slurm code and added new features such as heuristic algorithms to predict runtime based on the dataset size, cache, backend storage type, etc. [[link](#)]
- **DSN Laboratory Website:** Contributed to building 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)

Website: <https://sharif.edu/~asadi>

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

*University of Tehran, Department of Electrical & Computer Engineering*

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

Website: <https://profile.ut.ac.ir/en/~zmovahedi>

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

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

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