ALI FARAHANI

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EDUCATION

Sharif University of Technology   Tehran, Iran
M.Sc., 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.Sc., 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

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

RESEARCH EXPERIENCE

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

- Conducted research in High-Performance Computing (HPC) and I/O characterization to accelerate machine learning workloads by fine-tuning in-framework data loading hyper-parameters (software side) and discovering optimal storage architectures to mitigate I/O bottleneck (hardware side) under the supervision of Dr. Hossein Asadi.
- Developed a new platform for characterizing data-intensive applications that traces many aspects of the system, from Disk I/O to CPU/GPU utilization with visual/textual results.
- Publication: "***Accelerating CNN Training with I/O Characterization and Fine-Tuning Data Loading Hyper-Parameters***", In Preparation, 2024.

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

- Worked with a team of experts to run and characterize deep learning workloads in virtualized environments.

TEACHING EXPERIENCE

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, Faculty of Engineering   Oct. 2018 – Jul. 2020
- Data Structures & Algorithms (Undergraduates)
- Fundamentals of Computer Programming (Undergraduates)
- Calculus 1 & 2 (Undergraduates)

INDUSTRY EXPERIENCE

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 to improve teamwork skills and learn modern software 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 Python and Flutter.

ACADEMIC PROJECTS

- **I/O Workload Characterization**: Created a 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](#)]
- **Offera**: Developed a suggestive and proximity marketing platform that offers new products to customers based on their previous purchase history using data science algorithms and their location inside shopping centers. The platform comprised a web-based monitoring dashboard, data mining tools, and a mobile application and was titled the best IoT startup at the University of Tehran.
- **Sharif HPVM**: Contributed to upgrading the hardware/software infrastructure of Sharif High-Performance Virtual Machines (HPVM) by setting up NVIDIA GPUs, high throughput storage, VMware ESXi hypervisor, and Zabbix monitoring tool.

SKILLS

- 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.
- **Language Skills**: **English** (*Full professional proficiency),* **Persian** *(Native proficiency)*

HONORS & AWARDS

- Ranked as 2nd 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 Science & Technology Park (UTSTP).

MEMBERSHIPS

- Prominent member of the student's scientific association, Faculty of Engineering, University of Tehran (2019 – 2020).
- Editor in chief of the student's scientific "Zeros & Ones" magazine, Faculty of 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

Hossein Asadi, Professor
Sharif University of Technology, Department of Computer Engineering
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Zahra Movahedi, Assistant Professor
University of Tehran, Faculty of Engineering
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