

OBJECTIVE

I am Mehrshad Lotfi.

SKILLS

Development Tools: Docker, Kubernetes, GitHub Actions, Terraform, Packer, Ansible, Jenkins, Grafana

Cloud Vendors: Amazon Web Services (AWS), Google Cloud Platform (GCP)

Programming Languages: Python, C/C++, Bash, Java

Web/DB Technologies: HTML5, CSS3, PHP, JavaScript, MySQL, Bootstrap

EXPERIENCE

Research assistant at Max Planck Insitute for Software Systems under the supervision of **Prof. Antoine Kaufmann**
October 2019 – Present

- **Project:** *TCP Acceleration as a Service in Virtualized Environments*

In this project, I explored the needs for network virtualization in public cloud environment. The goal of the project is to enable modern, CPU efficient network stacks for cloud tenants while enforcing isolation. To this end, I added a netdev driver to Open vSwitch code and used TAS as an efficient packet processing stack for TCP.

- **Project:** *Exploring Domain-Specific Architectures for Network Protocol Processing*

As part of this project, I worked with Xilinx UltraScale+ FPGA-based NICs. I implemented a userspace driver for the PCIe communication using vfio driver.

Research Intern at SAFARI Group headed by **Prof. Onur Mutlu**, ETH

July - September 2018

- **Project:** *Towards Practical, Efficient, and Realizable Hardware-Software Interfaces to Enhance Application Expressivity*

This work investigates the possibility of designing rich hardware-software interfaces. As part of the project, I added custom instructions to RISC-V, and implemented a custom module on Rocket Chip which can be used by programmers to convey high-level data structures to the underlying hardware.

Undergraduate Research Assistant at Data Storage, Networks, & Processing Laboratory headed by **Prof. Hossein Asadi**, Sharif University of Technology
September 2016 - April 2018

- **Project:** *SSD Reliability Under Adverse Condition*

This project focuses on the behavior of Solid-State Disks (SSDs) under power fault. I made an automatic failure testing framework, which consists of hardware and software sections. By applying the testing framework, we tested more than 5 SSDs from different vendors and detected different types of data failures and device failure.

- **Project:** *New Scheme for SSD Storage Caching*

In this project, I applied modification to caching mechanism of EnhanceIO code in order to implement our new scheme of SSD storage caching. EnhanceIO is a dynamic block level cache to improve the performance of rotating hard disk drives by using SSDs as cache devices.

HONORS AND AWARDS

Visiting scholar fellowship from Max Planck Institute for Software Systems

Spring 2019

Summer internship Grant from SAFARI group, ETH Zurich

Summer 2018

Ranked 376th among approximately 200,000 participants of nationwide entrance exam of Irannian universities (Mathematics).
(**top 0.17%**)2013

EDUCATION

M.Sc. in Computer Science

October 2019 – February 2023

Max Planck Institute for Software Systems, and University of Saarland, Saarbrücken, Germany

Under the supervision of **Prof. Antoine Kaufmann**

B.Sc. in Computer Engineering

September 2014 – February 2019

Sharif University of Technology, Tehran, Iran

LANGUAGE PROFICIENCY

◇ Persian (native)

◇ English (fluent)

◇ German (fluent)