

# Gefei Zuo

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## Education

University of Michigan

Sep.2018 – present

Ph.D. student in Computer Science and Engineering

- GPA 3.89/4.00

University of Science and Technology of China (USTC)

Sep.2014 – Jun.2018

B.E. in Computer Science, in the Special Class for the Gifted Young (SCGY)

- Cumulative GPA 3.75/4.30, Rank 15/140
  - Enrolled in the Talent Program in Computer and Information Science and Technology
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## Research Experience

Graduate Student Research Assistant, advised by Prof. [Baris Kasikci](#)

UNIVERSITY OF MICHIGAN

**Hardware-assisted Debugging**

May.2019 – present

Combine record & replay (online, heavyweight) and symbolic execution (offline, computation intensive) to recover execution history from crash reports.

**NVM File-Indexing Structures Analysis**

Dec.2018 – present

Current NVM file systems mainly reuse file-indexing structures designed with decades-old assumptions. We should rethink the design space with NVM's unique properties in mind.

**Hypervisor for Shared-Memory FPGA Platforms[1]**

Oct.2018 – Jan.2020

A virtualization solution for emerging FPGA platforms. It enables processes in guest VM to share the same view of virtual memory with circuits on FPGA.

System Group Intern, instructed by [Lintao Zhang](#)

MICROSOFT RESEARCH ASIA

**Efficient and Scalable Total-Order Message Scattering in Datacenter Network[2]** Jul.2017 – Oct.2017

- Offload reordering and buffering to endhost: separate control plane from data plane.
- Readily deployable: applicable to programmable switches, commodity switches or endhosts only.

Soft Robot Lab, instructed by [Xiaoping Chen](#)

UNIV. OF SCIENCE AND TECH. OF CHINA

**Whole manipulator control in constrained environments[3]**

Dec.2016 – Mar.2017

- Extend traditional Jacobians method with new constraints, take obstacle's information into account.
  - Enable our softrobot work in environments with obstacles.
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## Publications

[1] **A Hypervisor for Shared-Memory FPGA Platforms**

Jiacheng Ma, Gefei Zuo, Kevin Loughlin, Xiaohe Cheng, Yanqiang Liu, Abel Mulugeta Eneyew, Zhengwei Qi, and Baris Kasikci  
Appearing at ASPLOS'20

[2] **Near-Optimal Total Order Message Scattering in Data Center Networks**

Gefei Zuo

SOSP'17 Student Research Competition

[3] **Whole manipulator control in constrained environments**

Dengyuan Wang, Xiaotong Chen, Gefei Zuo, Xinghua Liu, Zhanchi Wang, Hao Jiang and Xiaoping Chen  
RiTA 2017

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## Project Experience

USTC Freeshell

UNIV. OF SCIENCE AND TECH. OF CHINA

**Maintainer**

Sep.2014 – Jul.2017

- An IaaS service for students to learn and use Linux, supporting various Linux distributions.
- Utilize OS level virtualization (OpenVZ), distributed storage (Ceph), dynamic routing (RIP).

USTC Open Source Software Mirror

UNIV. OF SCIENCE AND TECH. OF CHINA

**Maintainer**

Jul.2015 – Mar.2017

- It is one of the largest open-source software mirrors in China.
  - It hosts 25 TiB+ content and generates 10 TiB+ network traffic per day.
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## Honors and Awards

SOSP'17 Student Research Competition (Undergraduate Category), the Second Place

Oct.2017

USTC Outstanding Student Scholarship (Grade 2)

2016, 2017

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## **Skills**

**Programming:** C/C++, Python, Matlab, Bash, Verilog

**Github:** <https://github.com/Alkaid-Benetnash>