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Ruiming Lu

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EDUCATION

Ph.D Candidate	**Shanghai Jiao Tong University**	**Sep 2020 – present**

- Ph.D Candidate in Computer Science, Department of Computer Science, SEIEE.
- Research Fields: Interested in exploring the reliability of newly-emerged storage technologies (e.g., NVMe SSD and SMR HDD) and designing practical fault-tolerant storage systems.

B.Eng	**Shanghai Jiao Tong University**	**Sep 2016 – Aug 2020**

- B.Eng in Electrical and Computer Engineering (E.C.E.), University of Michigan - Shanghai Jiao Tong University Joint Institute.
- Graduate with distinction: **College Graduate Excellence Award of Shanghai** (top 1%).
- Core Coursework: Honors Calculus; Circuits; Signals and Systems; Data Structures; Discrete Mathematics; Linear Algebra; Probabilistic Methods; Bayesian Analysis; Computer Architecture; Operating Systems; Computer Network.
- Thesis: Six-degree-of-freedom Fixed Magnetic Levitation Device.

PUBLICATIONS

Conference Paper

[1] Perseus: A Fail-Slow Detection Framework for Cloud Storage Systems.
Ruiming Lu*, Erci Xu*, Yiming Zhang, Fengyi Zhu, Zhaosheng Zhu, Mengtian Wang, Zongpeng Zhu, Guangtao Xue, Jiwu Shu, Minglu Li, Jiesheng Wu.
In Proceedings of the 21st USENIX Conference on File and Storage Technologies, February 2023, **USENIX FAST'23**.
Best Paper Award.
Invited to appear in USENIX ;login:.

[2] NVMe SSD Failures in the Field: the Fail-Stop and the Fail-Slow.
Ruiming Lu*, Erci Xu*, Yiming Zhang, Zhaosheng Zhu, Mengtian Wang, Zongpeng Zhu, Guangtao Xue, Minglu Li, Jiesheng Wu.
In Proceedings of the 2022 USENIX Annual Technical Conference, July 2022, **USENIX ATC'22**

Journal & Magazine Articles

[3] Detecting Fail-Slow Failures in Large-Scale Cloud Storage Systems.
Ruiming Lu, Erci Xu, Yiming Zhang, Fengyi Zhu, Zhaosheng Zhu, Mengtian Wang, Zongpeng Zhu, Guangtao Xue, Jiwu Shu, Minglu Li, Jiesheng Wu.
USENIX ;login: Online, February 9, 2023.

RESEARCH EXPERIENCE

Research Assistant	**SJTU & Alibaba Cloud**	**Aug 2021 – present**

- **Project:** Intelligent Analytic Methods for Safe Deployment in Large-Scale Cloud Infrastructures.

Research Assistant	**SJTU & Alibaba Cloud**	**Jan 2021 – Apr 2022**

- **Project:** NVMe SSD Failure Study.
- **Supervisor:** Dr. Erci Xu, Professor Yiming Zhang, and Professor Guangtao Xue.
- **Work:** Comb through telemetry data of NVMe SSD at Alibaba Cloud; compare NVMe SSD with SATA SSD on recent reliability changes; analyze and benchmark a novel failure type – fail-slow;

Research Assistant	**WNAI Lab, UM-SJTU JI**	**Sep 2018 – Sep 2019**

- **Project:** 3D Finger Tracking based on Acoustic Sensor Array.
- **Supervisor:** Professor Xudong Wang.

- **Work:** Establish an acoustic sensor array platform using Arduino; experiment on position tracking of moving objects using FPGA.

Research Assistant   **32th PRP, SJTU**   **Sep 2017 – Feb 2018**
- **Project:** Machine Learning based Pattern Recognition of the Eye.
- **Supervisor:** Professor Xiaohua Tian.
- **Work:** Literature review on pattern recognition; apply YOLO to detect the motion of human eyes.

Research Assistant   **15th IPP, SJTU**   **Apr 2017 – Jun 2018**
- **Project:** Research and Implementation of a Student Community for Modern University.
- **Supervisor:** Professor Jigang Wu.
- **Work:** Research in web develpment (front-end, back-end, PHP, etc.) from scratch; develop a back-end for a student community website in JI.

SCHOLARSHIPS & AWARDS

- **College Graduate Excellence Award of Shanghai**, Aug 2020.
- **Annual Excellence Scholarship**, Sep 2017.
- **Yu Liming Scholarship**, Jan 2018 and Jan 2020.
- **Dean's List**, Sep 2017.
- **Best Innovation Award**, the Design Expo of UM-SJTU JI, Aug 2017.

TEACHING

Teching Assistant   **UM-SJTU JI**   **Jun 2018 – Aug 2018**
- Teaching assistant for VG100: Introduction to Engineering.
- Hold weekly recitation classes and office hour; organize lab sessions.

PROFESSIONAL SKILLS

- **Programming Languages:** C++; C; R; Julia; Python; SQL; Matlab; Go.
- **English Qualifications:**
  - TOFEL: 106 (Reading: 28; Listening: 28; Speaking: 24, Writing: 26).
  - CET6: 637 (Reading: 229; Listening: 214; Writing and Tranlation: 194).