

Yigong Hu

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Research Interests

My research interests are in building systems techniques to provide performance guarantees for software. End-users of modern software services expect a consistent performance experience. However, achieving a goal is challenging due to the software's complexity and unpredictable behavior, along with the rapid growth of concurrency. My research design techniques to mitigate variable types of performance issues in mobile systems, large systems, and cloud systems. My works were published in top venues like OSDI, SOSP, ASPLOS, and Eurosys. My research has also received the ASPLOS 2019 best paper award.

Education

Johns Hopkins University

PhD in Computer Science

Thesis: Reasoning About and Mitigating Performance Issues in Large-Scale Systems

Advisor: Ryan (Peng) Huang

Baltimore, MD

Sept 2017 - Aug 2023

Huazhong University of Science and Technology

B.S. in Computer Science, rank 1/258

Wuhan, China

Sept 2013 - May 2017

Publications

- [1] **Yigong Hu**, Gongqi Huang and Peng Huang. Pushing Performance Isolation Boundaries into Application with pBox. *In Proceedings of the 29th ACM Symposium on Operating Systems Principles, SOSP'23*
- [2] Lingmei Weng **Yigong Hu**, Peng Huang, Jason Nieh and Junfeng Yang. Effective Performance Issue Diagnosis with Value-Assisted Cost Profiling. *In Proceedings of 18th The European Conference on Computer Systems, Eurosys'23*
- [3] **Yigong Hu**, Gongqi Huang and Peng Huang. Automated Reasoning and Detection of Specious Configuration in Large Systems with Symbolic Execution. *In Proceedings of 14th USENIX Symposium on Operating Systems Design and Implementation, OSDI'20*
- [4] **Yigong Hu**, Ze Li, Peng Huang, Suhas Pinnamaneni, Francis David, Yingnong Dang and Murali Chintalapati. Scaling Performance Issue Detection and Diagnosis in Cloud Infrastructures. *In Proceedings of the 24th AAAI workshop on Cloud Intelligence: AI/ML for Efficient and Manageable Cloud Services, AAAI'20 Workshop*
- [5] **Yigong Hu**, Suyi Liu and Peng Huang. A Case for Lease-Based, Utilitarian Resource Management on Mobile Devices. *In Proceedings of the 24th international conference on Architectural Support for Programming Languages and Operating Systems, ASPLOS'19 (Best Paper Award)*

Employment

University of Washington

Postdoctoral Researcher

Mentor: Prof. Baris Kasikci

Sept 2023 – Ongoing

Microsoft Azure

Data Scientist Intern (part-time)

Mentor: Yingnong Dang, Ze Li

Sept 2019 – Jan 2020

Microsoft Azure

Data Scientist Intern

Mentor: Yingnong Dang, Ze Li

May 2019 – Aug 2019

University of Chicago

Research Intern

Advisor: Shan Lu

May 2016 – Sept 2016

Honors and Awards

Azure Cloud Platform Research Credits (\$10,000)

2023

ASPLOS'19 best paper Award

2020

China National Scholarship

2018

Mentee Award

CRA outstanding undergraduate researcher award honorable mention, Gongqi Huang

2021

Teaching Experience

Guest Lecturer

CS 624: Reliable Software Systems

Johns Hopkins University

Topic: Early detection of configuration errors

Spring 2022

CS 624: Reliable Software Systems

Johns Hopkins University

Topic: Detecting misconfiguration with symbolic configuration

Spring 2021

EN.601.290: User Interfaces and Mobile Applications

Johns Hopkins University

Topic: Energy aware android programming

Fall 2019

CS 318/418/618: Principles of Operating Systems

Johns Hopkins University

Fall 2019

Teaching Assistant

CS 624: Reliable Software Systems

Johns Hopkins University

Topic: Hosting office hours and lectures

Spring 2021

CS 318/418/618: Principles of Operating Systems

Johns Hopkins University

Topic: Hosting lab session on Pintos (lab overviews, office hours, grading, etc.)

Fall 2019

Services

EuroSys'23: Proceedings of the European Conference on Computer Systems

2022

Artifact Evaluation Committee

EuroSys'21: Proceedings of the European Conference on Computer Systems

2021

Student Volunteer

NSDI'21: USENIX Symposium on Networked Systems Design and Implementation

2020

External Reviewer

OSDI'20: USENIX Symposium on Operating Systems Design and Implementation

2020

External Reviewer

SOSP'19: ACM Symposium on Operating Systems Principles

2019

External Reviewer

HotOS'19: Workshop on Hot Topics in Operating Systems

2019

External Reviewer

SOSP'17: ACM Symposium on Operating Systems Principles

2017

Student Volunteer

Talks

Pushing Performance Isolation Boundaries into Application with pBox

SOSP'23

Oct 2023

Automated Reasoning and Detection of Specious Configuration in Large Systems with Symbolic Execution

Seminar, MIT

Nov 2022

Automated Reasoning and Detection of Specious Configuration in Large Systems with Symbolic Execution

Seminar, StoryBrook

Mar 2021

Automated Reasoning and Detection of Specious Configuration in Large Systems with Symbolic Execution OSDI'20 (Virtual)	<i>Nov 2020</i>
Case for Lease-Based, Utilitarian Resource Management on Mobile Devices Microsoft Azure	<i>Jun 2019</i>
Case for Lease-Based, Utilitarian Resource Management on Mobile Devices ASPLOS'19	<i>Apr 2019</i>

Student Mentoring

Harry Liang Master@Purdue University	<i>Sept 2023 - Current</i>
Yicheng Liu Undergrad@Shanghai Jiaotong University	<i>June 2023 - Current</i>
Shuangyu Lei Undergrad@ University of Michigan	<i>June 2023 - Current</i>
Zeyin Zhang Master@Johns Hopkins University	<i>Sept 2022 - Current</i>
Emily Zhai Undergrad@Johns Hopkins University →Microsoft	<i>Sept 2021 - May 2022</i>
Gongqi Huang Undergrad@Johns Hopkins University →Ph.D. student@Princeton	<i>Sept 2019 - May 2022</i>
Varun Radhakrishnan Undergrad@Johns Hopkins University →Amazon	<i>Oct 2018 - May 2019</i>
Justin Shafer Master@Johns Hopkins University →Westpoint	<i>Sept 2018 - May 2019</i>
Suyi Liu Undergrad@Johns Hopkins University →Netflix	<i>Sept 2017 - May 2018</i>

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