Gongqi Huang

Contact Information

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Research Interests

Operating Systems

Education

Princeton University, Princeton, NJ
- Ph.D. Candidate in Computer Science ..... Sep. 2022 - Present

Johns Hopkins University, Baltimore, MD
- M.S.E in Computer Science ..... May. 2022
- B.S. in Computer Science ..... May. 2021
  - Minor in Entrepreneurship and Management
  - Graduated with General Honors

Honors and Awards

Honorable Mentions in 2021 CRA Outstanding Undergrad Researcher Award ..... Dec. 2020

Research Experience

SNS Group at Princeton University
- Research Assistant ..... Sep. 2022 - Present
  - Currently hacking on a leak-free kernel and hardware architecture to close microarchitectural and high-level timing channels for parallel embedded systems.
  - Designed and developed a novel cloud system for user-defined security in Rust. Evaluated both the performance and the storage overheads of the cloud system under various workloads. Implemented a library for the NodeJS runtime.

Order Lab at Johns Hopkins University
- Research Assistant ..... Dec. 2019 - Jun. 2022
  - Worked on the network stack of Linux kernel to achieve userspace-defined performance isolation and evaluated the prototype under real world cases.
  - Ported a revocable lock prototype from Solaris to Linux.
  - Developed a S^{2}E plugin in C to symbolically identify performance degradation in large software systems due to misconfiguration.

Teaching Experience
- Intro to Programming Systems, Princeton, COS217 ..... Fall'23, Spring'24
- Principles of Operating Systems, JHU, CS3/4/618 ..... Fall'20, Fall'21

Publications

Gongqi Huang, Leon Schuermann, and Amit Levy. Bridge: A Leak-Free Hardware-Software Architecture for Parallel Embedded Systems. *To appear in the 2nd Workshop on Kernel Isolation, Safety and Verification (KISV'24).*

Yigong Hu, **Gongqi Huang**, and Peng Huang. Pushing Performance Isolation Boundaries into Application with pBox. *In Proceedings of the 29th Symposium on Operating Systems Principles (SOSP'23)*, October 2023.

Yigong Hu, **Gongqi Huang**, and Peng Huang. Automated Reasoning and Detection of Specious Configuration in Large Systems with Symbolic Execution. *14th USENIX*

Symposium on Operating Systems Design and Implementation (OSDI'20), November 2020.