HAORAN QIU

haoranq4@illinois.edu ⋄ (217) 979-6580 ⋄ haoran-qiu.com (homepage)

EDUCATION

University of Illinois, Urbana-Champaign Champaign, IL
Ph.D. in Computer Science 2019-24
- Graduate Research Assistant at the DEPEND Lab. Advisor: Prof. Ravishankar K. Iyer

The University of Hong Kong Hong Kong
B.Eng in Computer Science, Minor in Mathematics, CGPA: 4.01, First Class Honors 2015-19
- Awards: Dean's Honor List, Lee Shau Kee Scholarships, HKU Foundation Scholarships
- Teaching Assistant for COMP 2396 Object-oriented Programming and Java (Fall 2017)

University of Wisconsin, Madison Madison, WI
Visiting Student in College of Engineering, GPA: 4.0/4.0 2017-18

PUBLICATIONS

FRING: A Geography-based P2P Overlay Network for Fast and Robust Blockchain Systems. **H. Qiu**, T. Ji, S. Zhao, X. Chen, et al. IEEE Transactions on Service Computing (Under Review)

OWL: Understanding and Detecting Concurrency Attacks. S. Zhao, R. Gu, **H. Qiu**, et al. Proceedings of The 48th IEEE International Conference on Dependable Systems and Networks (DSN '18)

PLOVER: Fast, Multi-core Scalable Virtual Machine Fault-tolerance. C. Wang, X. Chen, **H. Qiu**, et al. Proceedings of the 15th USENIX Symposium on Networked Systems Design and Implementation (NSDI '18)

RESEARCH EXPERIENCE

Systems Software Lab, HKU 09/2017 - 05/2019
- Augmenting Blockchain System Efficiency and Security with a TEE-Facilitated P2P Overlay Network: Designed a new overlay network protocol and implemented a prototype in C++. Performance is improved ∼3 times.
- Concurrency Attack Modeling and Detection: Designed and implemented concurrency bug detector and attack input fuzzer and evaluated OWL on MySQL, Apache and Linux Kernel.
- Fast Virtual Machine Fault Tolerance: Designed an algorithm to determine an appropriate time to synchronize; Built and designed performance evaluation on various web services (e.g. Django+Nginx,PostgreSQL, Redis).

WiNGS Lab, UW-Madison 01/2018 - 05/2018
- Augmenting Vision-based Indoor Navigation System with Edge Computing.
  Developed the back-end by using SLAM to locate and navigate, and using Elasticsearch to improve image storage efficiency, search scalability and performance.
  Evaluated bandwidth consumption and scalability comparison between cloud and edge computing.

WORK EXPERIENCE

Credit Suisse Group Hong Kong
Software Engineer, APAC Markets Risk IT 06/2018 - 08/2018
- Chinchilla - Big data system for risk information management. Developed the multi-risk report generator;
- Developed widget for change freeze notification and tech events reminder widget used by the whole IT division;

Hututa Technologies Ltd. Hong Kong
R&D Software Engineer Intern 07/2017 - 08/2017
- Extended a distributed data processing system to support biological gene mapping algorithms.
- Designed and developed a network monitor system and added dynamic DNS update module.

SKILLS

Coding C/C++, Java, Python, Shell, Haskell, MATLAB, Julia, SQL, JavaScript, HTML
Toolkits GNU/Linux, Git, Wireshark, Nginx, Docker, Elasticsearch, Django, Hadoop, Hive, MongoDB