Yu Gan

yg397@cornell.edu

Education

Cornell University Ithaca, NY
Ph.D. student in Electrical and Computer Engineering Aug 2016 - present
- ✧ Advisor: Christina Delimitrou
- ✧ Research interest: Cloud Computing, Computer Architecture and Distributed Systems

Tsinghua University Beijing, China
B.Eng. in Electronic Engineering Sep 2012 - Jul 2016
- ✧ GPA: **3.9/4.0**

University of New South Wales Sydney, Australia
International Student Exchange Program Jul 2014 - Dec 2014
- ✧ Grade**: High Distinction**

Publications

- ✧ **Yu Gan**, Yanqi Zhang, Dailun Cheng, Ankitha Shetty, Priyal Rathi, Nayantara Katarki, Ariana Bruno, Justin Hu, Brian Ritchken, Brendon Jackson, Kelvin Hu, Meghna Pancholi, Brett Clancy, Chris Colen, Fukang Wen, Catherine Leung, Siyuan Wang, Leon Zaruvinsky, Mateo Espinosa, Yuan He, and Christina Delimitrou. "An Open-Source Benchmark Suite for Microservices and Their Hardware-Software Implications for Cloud and Edge Systems". *To appear in the Twenty Fourth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Providence, RI, April 2019.*

- ✧ **Yu Gan,** Yanqi Zhang, Kelvin Hu, Yuan He, Meghna Pancholi, Dailun Cheng, and Christina Delimitrou. "Seer: Leveraging Big Data to Navigate the Complexity of Performance Debugging in Cloud Microservices". *To appear in the Twenty Fourth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Providence, RI, April 2019.*

- ✧ Yanqi Zhang, **Yu Gan**, and Christina Delimitrou. "μqSim: Enabling Accurate and Scalable Simulation for Interactive Microservices". *To appear in IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS), Madison, WI, March 2019.*

- ✧ **Yu Gan** and Christina Delimitrou, "*The Architectural Implications of Cloud Microservices*," in IEEE Computer Architecture Letters, vol. 17, no. 2, pp. 155-158, July-Dec. 1, 2018.

- ✧ **Yu Gan,** Meghna Pancholi, Dailun Cheng, Siyuan Hu, Yuan He, and Christina Delimitrou "*Seer: Leveraging Big Data to Navigate the Increasing Complexity of Cloud Debugging,*" in the 10th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud), July 2018.

- ✧ **Yu Gan**, Chunxiao Jiang, Norman C. Beaulieu, Jian Wang and Yong Ren, "*Secure Collaborative Spectrum Sensing: A Peer-Prediction Method*," in IEEE Transactions on Communications, vol. 64, no. 10, pp. 4283-4294, Oct. 2016.

- ✧ **Yu Gan,** Chunxiao Jiang, Wei Zhang, Norman C. Beaulieu and Yong Ren, **"***Incentive Attack Prevention for Collaborative Spectrum Sensing: A Peer-Prediction Method*," *2015 IEEE Global Communications Conference (GLOBECOM)***,** San Diego, CA, 2015, pp. 1-6.

Internships

Google Sunnyvale, CA
Software Engineering Intern May 2018 – Aug 2018
Intern Manager: David Lo, Sundar Dev
CPU Frequency Sensitivity Prediction for Cloud Applications
- ✧ Created fingerprints for cloud applications and designed a method to predict the CPU frequency sensitivity of each application based on the fingerprints with machine learning.

Research Experiences

CSL, Cornell University Ithaca, NY
Graduate Research Assistant Aug 2016 – present
Advisor: Christina Delimitrou
DeathStarBench Suite for Microservices and IoT Applications
- ✧ Implemented a microservices benchmark suite and discovered the implications that microservices have across the system stacks in the datacenters.

Tsinghua University Beijing, China
Undergraduate Research Assistant Dec 2015 - Jun 2016
Advisor: Yongpan Liu
Power Management with Non-volatile memory
- ✧ Analyzed the performance and power efficiency of an embedded system using the non-volatile memory for power management.

University of Michigan Ann Arbor, MI
Undergraduate Research Assistant Jul 2015 - Sep 2015
Advisor: Trevor Mudge
PERFECT Project
- ✧ Optimized a parallel image processing application on a middle-sized SIMT processor, improving the performance by 4x.

Scalability of Computation System in the Base-station
- ✧ Built the on-chip network topology with hierarchical crossbars on gem5 simulator. Analyzed the network utilization while scaling.

Tsinghua University Beijing, China
Undergraduate Research Assistant Sep 2014 - Sep 2015
Advisor: Yong Ren
Trustful Collaborative Spectrum Sensing in Cognitive Radio

- ✧ Designed two attack detection mechanisms to identify malicious users in distributed sensor networks based on a game theory algorithm.

Tsinghua University Beijing, China
Undergraduate Research Assistant Sep 2013 - Jun 2014
Advisor: Xiang Xie

Bare-Finger Touch Recognition of High Precision

- ✧ Constructed a system consisting of two cameras and one projector, which recognizes bare-finger touch on a projection screen with high performance and low error rates.

Awards and Honors

- ✧ Best of IEEE Computer Architecture Letters Award 2018
- ✧ Jacobs Scholar Fellowship 2016, 2017
- ✧ Guanghua Excellence Scholarship 2015
- ✧ Meng Zhaoying Excellence Scholarship 2015
- ✧ First Award of Excellent SRT Program Award 2014
- ✧ Second Award of Challenge Cup 2014
- ✧ Third Award of China Undergraduate Physics Tournament 2014
- ✧ Tencent Innovation Excellence Scholarship 2014
- ✧ Excellent International Exchange Student Scholarship 2014
- ✧ Academic Excellence Scholarship 2013

Leadership & Activities

Vice Minister, **Student Union, Tsinghua University** Aug 2013-Sep 2015

- ✧ Designed and organized various activities and evening galas, such as: student festivals, dancing parties, singing contests and talent shows.

Skills

- ✧ Languages: C/C++, Java, Python, PHP, Verilog HDL, LaTeX, MATLAB
- ✧ Software & Tools: Docker, Apache thrift, NGINX, MongoDB, Systemtap, gem5