SHU WANG

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RESEARCH SUMMARY

Research experience with (1) configuration tuning for distributed systems like Mapreduce, HDFS, Hbase, and Cassandra, (2) concurrency bugs fixing using Hardware Transactions Memory for MySQL, Apache, etc and (3) wireless network security for acoustic eavesdropping.

EDUCATION

The University of Chicago *Sep 2015 -Dec 2021*
Ph.D. & M.S. in Computer Science **Advisor: Shan Lu**

University of Wisconsin-Madison *Sep 2013 - May 2015*
M.S. in Computer Engineering (With Thesis) **Advisor: Xinyu Zhang**

Harbin Institute of Technology (Main Campus), China *Aug 2009 - Jul 2013*
B.E. in Electrical Engineering

PUBLICATIONS

A Self-Adaptive System for Software Configurations Tuning
Shu Wang, Henry Hoffmann, Shan Lu
(In preparation for submission)

Statically Inferring Performance Properties of Software Configurations
Chi Li, **Shu Wang**, Henry Hoffmann, Shan Lu
European Conference on Computer Systems(**EuroSys**), 2020
Acceptance ratio: 18%, 43 out of 234 submissions

Applying Transactional Memory for Concurrency-Bug Failure Recovery in Production Runs
Yuxi Chen, **Shu Wang**, Shan Lu, Karthikeyan Sankaralingam
IEEE *Transactions on Parallel and Distributed Systems* (**TPDS**), 2018
Impact Factor: 3.402

Applying Hardware Transactional Memory for Concurrency-Bug Failure Recovery in Production Runs
Yuxi Chen, **Shu Wang**, Shan Lu, Karthikeyan Sankaralingam
USENIX *Annual Technical Conference* (**ATC**), 2018
Acceptance ratio: 20%, 76 out of 378 submissions

Understanding and Auto-Adjusting Performance-Related Configurations
Shu Wang, Chi Li, William Sentosa, Henry Hoffmann, Shan Lu
ACM *International Conference on Architectural Support for Programming Languages and Operating Systems* (**ASPLOS**), 2018
Acceptance ratio: 18%, 56 out of 307 submissions

Fundamental Analysis of Full-duplex Gains in Wireless Networks
Shu Wang, Vignesh Venkateswaran, Xinyu Zhang
IEEE/ACM *Transactions on Networking* (**ToN**), 2017
Impact Factor: 3.597

Acoustic Eavesdropping through Wireless Vibrometry
Teng Wei, **Shu Wang**, Anfu Zhou, Xinyu Zhang
ACM *International Conference on Mobile Computing and Networking* (**MobiCom**), 2015
Acceptance ratio: 18%, 38 out of 207 submissions, one of **top 9** pre-accepted papers

Exploring Full-Duplex Gains in Multi-Cell Wireless Networks:A Spatial Stochastic Framework
Shu Wang, Vignesh Venkateswaran, Xinyu Zhang

IEEE *Conference on Computer Communications* (**INFOCOM**), 2015
Acceptance ratio: 19%, 316 out of 1640 submissions

PATENTS

Wireless Vibometer with Antenna Array
Xinyu Zhang, Teng Wei, **Shu Wang**, Anfu Zhou

POSTERS

Repeatability as Side-Effect in Testbed
Shu Wang, Zhuo Zhen, Jason Anderson, Kate Keahey
ACM/IEEE *Supercomputing Conference* (**Supercomputing**), 2018

RESEARCH EXPERIENCES

Automatic Configuration for Software   *Apr 2016 - Present*
Research Assistant   *Uchicago*

- Investigated the correlation between configuration and performance.
- Proposed a new configuration framework.
- Proposed control-theatrical based solutions for auto-adjusting configurations.

Hardware Transactional Memory Application   *Jan 2016 - Aug 2016*
Research Assistant   *Uchicago*

- Explored Intel Hardware Transactional Memory to improve software reliability.

Fine-grained Wireless Sensing Application   *Aug 2014 - Mar 2015*
Research Assistant   *UWmadison*

- Implemented an eavesdropping system based on the vibration of wireless signal strength.

Stochastic Analysis of Full-duplex Wireless Network   *Jan 2014 - Jul 2014*
Research Assistant   *UWmadison*

- Analyzed full-duplex networks capacity using stochastic geometry under different MAC protocols.

INTERN

Argonne National Laboratory(**ANL**)   *Jun 2018 - Sep 2018*

TEACHING ASSISTANT

MPCS-51040 C Programming   *Autumn 2015*
CMSC-15400 Introduction to Computer Systems   *Spring 2019*

AWARDS

Student Travel Grant, ASPLOS, Midwest PL Summit	*2018*
People's Scholarship for Academic Excellence, Three Times	*Aug 2009 - Jul 2013*
Outstanding Students, Harbin Institute of Technology	*2012*
Mathematical Contest in Modeling, Honorable Mention	*2012*
The 3rd China Undergraduate Mathematical Contest, 2nd Prize	*2011*
Endress+Hauser **Enterprise Scholarship**	*2011*
The 2nd China Undergraduate Mathematical Contest, 2nd Prize	*2010*

SKILLS

- **Programming:** C, Java, Python, Matlab, PHP, Verilog.
- **Software:** Hadoop, HBase, OpenStack.
- **Hardware:** Intel HTM, Embedded System.
- **Platform:** WARP, Intel MCS-51, TI CC2530.
- **IDE:** Emacs, Eclipse, Quartus, IAR, keil, Latex.
- **Related Courses:** OS, Advanced OS, Algorithms, Database, Wireless and Mobile Networks, Computer Architecture, Advanced Computer Networks, Machine Learning, Deep Learning