

Xiangfeng Zhu

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RESEARCH INTERESTS	Networking, Cloud Computing, Distributed System, Operating System	
EDUCATION	University of Michigan, Ann Arbor B.S., Computer Science <ul style="list-style-type: none">GPA: 4.00/4.00 Univeristy of California, Santa Cruz B.S., Computer Science <ul style="list-style-type: none">GPA: 3.94/4.00	Expected: May 2020 Sep. 2016 - June. 2018
RESEARCH EXPERIENCE	Research Assistant University of Michigan, College of Engineering Work under: Prof. Mosharaf Chowdhury and Fan Lai <i>Speed-of-Light Wide-Area Computation</i> <ul style="list-style-type: none">Working on a project related to geo-distributed data analytics. Undergraduate Researcher Disorderly Lab, UCSC Advisor: Prof. Peter Alvaro <i>Protocol Repair Using Lineage Graphs</i> <ul style="list-style-type: none">Developed a debugging approach based on analysis of provenance data obtained during system executions equipped with correctness specifications. Our approaches require programs and their correctness properties written in a high-level declarative language.Helped Design a standalone prototype Debugger Nemo and validated Nemo on protocols from real-world distributed bugs. Our experimental result shows that Nemo demonstrates the promise of automatic provenance-guided debugging for complex distributed protocols. Undergraduate Researcher Computer Communication Research Group, UCSC Advisor: Prof. J.J. Garcia-Luna-Aceves <i>CUP: Channel-Utilization Persistence for MAC protocols</i> <ul style="list-style-type: none">Helped Professor J.J. design the first transmission strategy(CUP) for contention-based MAC protocols. This approach applies to any MAC protocols with carrier sensing, virtual carrier sensing, or priority acknowledgments.Analyzed the efficiency of Channel-Utilization Persistence MAC protocols, such as CUP-CSMA and CUP-CSMA/CA, using Markov Chains. Presented numerical results that compare the throughput of CUP-CSMA, non-persistent CSMA, and 1-persistent CSMA. Undergraduate Researcher Storage System Research Center, UCSC Worked under: Prof. Darrell D. E. Long	Dec. 2018 - Now Mar. 2018 - Sep. 2018 Aug. 2017 - Feb. 2018 Mar. 2017 - Aug. 2017

Rogue Cell tower(IMSI Catcher) detector

- Wrote a design document with three lab partners detailing the project and future work. Our approach includes Neighboring Cell Tower Information, Absence of Encryption and Signal Strength.
- Designed an algorithm to pinpoint the location of IMSI Catchers based on received signal strength (RSS)
- Wrote C code to communicate with a SIMCOM module via AT commands and a GPS module

PROJECTS	Distributed Debugger Using Provenance Graph 2018 <ul style="list-style-type: none">• Designed a lineage-driven distributed debugger(Nemo) with graduate students that can analyze the program and give suggestions to the programmer how and where to correct the program Fault-tolerant Scalable Key-Value Store 2018 <ul style="list-style-type: none">• Developed a distributed, fault-tolerant key-value store that can store the amount of data that cannot fit into one single machine, using consistent hashing. Chess Puzzle Solver 2017 <ul style="list-style-type: none">• Wrote a program that can determine if a player can force checkmate in up to 5 steps, including the moves of the opponent. Online Reservation system 2017 <ul style="list-style-type: none">• Designed an online reservation app for Manyue Yoga Stadium, on-line payment system, and on-line community for member to share their experience.
PUBLICATION	1. Lennart Oldenburg, Xiangfeng Zhu , Kamala Ramasubramanian, Peter Alvaro, "Fixed It For You: Protocol Repair Using Lineage Graphs", <i>Proceedings of the 9th biennial Conference on Innovative Data Systems Research (CIDR 19)</i> , Asilomar, CA, 2019
OTHER EXPERIENCE	<ul style="list-style-type: none">• CMPE107: Probability and Statistics , UCSC, Grader Spring 2018• CMPS12B: Introduction to Data Structures, UCSC, Tutor Spring 2018• CMPS12B: Introduction to Data Structures, UCSC, Lab Tutor Winter 2018• CMPS101: Algorithms and Abstract Data Types, UCSC, Tutor Fall 2017• CMPS101: Algorithms and Abstract Data Types, UCSC, Grader Fall 2017
AWARDS	<ul style="list-style-type: none">• Dean's Honor List: Fall 2016, Winter 2017, Spring 2017, Winter 2018, Spring 2018
SKILLS	<ul style="list-style-type: none">• Language: English, Chinese• Programming: C, C++, Shell Scripting, Python, Java, JavaScript, Matlab, Bash, Go(Limited), Scala(Limited), HTML, CSS, \LaTeX• Platform: Mac OS, Windows, Linux• Tools: Perf, GDB, Valgrind, Make, Git, Vim, Neo4j, Docker• Data: MySQL, SQLite3, Hadoop, Hive, Spark
REFERENCES	Dr. J.J. Garcia-Luna-Aceves University of California, Santa Cruz Distinguished Professor of Computer Science and Engineering Jack Baskin Endowed Chair of Computer Engineering

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