

Xiangfeng Zhu

CONTACT INFORMATION	3510 Murdoch Dr. Palo Alto, CA 94306 xzhu27.me	650-660-0918 zxfeng@umich.edu www.linkedin.com/in/xzhu
RESEARCH INTERESTS	Networking, Cloud Computing, Distributed System, Systems for machine learning/artificial intelligence-based data analytics	
EDUCATION	University of Michigan, Ann Arbor B.S., Computer Science <ul style="list-style-type: none">GPA: 3.92/4.00 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 Software System Lab, University of Michigan Advisor: Prof. Mosharaf Chowdhury <i>Sol: Fast Distributed Computation Over Slow Networks</i> <ul style="list-style-type: none">Co-developed a general-purpose execution engine, Sol, that can adapt to diverse network conditions on top of Apache Spark.Improved SQL, machine learning, and streaming jobs by 4.2 and 16.4 on average, respectively, in offline and online settings compared to Apache Spark in resource-constrained networks. Undergraduate Researcher Disorderly Lab, UC Santa Cruz 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, UC Santa Cruz 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.	Dec. 2018 - Now Mar. 2018 - Now Aug. 2017 - Feb. 2018

- Presented numerical results that compare the throughput of CUP-CSMA, non-persistent CSMA, and 1-persistent CSMA.

Undergraduate Researcher

Mar. 2017 - Aug. 2017

Storage System Research Center, UC Santa Cruz

Worked under: Prof. Darrell D. E. Long

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

INTERN EXPERIENCE

Software Engineer Intern, Dropbox

May 2019 - Now

Filesystem Team

- Working in Dropbox's Filesystem team as a Software Engineer intern

PROJECTS

Distributed Debugger Using Provenance Graph

2018

- 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

- 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

- 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

- Designed an online reservation app for Manyue Yoga Stadium, on-line payment system, and on-line community for member to share their experience.

PUBLICATIONS

1. Fan Lai, Jie You, **Xiangfeng Zhu**, Mosharaf Chowdhury, Harsha Madhyastha, "Sol: Fast Distributed Computation Over Slow Networks", *under review*
2. Lennart Oldenburg, **Xiangfeng Zhu**, Kamala Ramasubramanian, Peter Alvaro, "Fixed It For You: Protocol Repair Using Lineage Graphs", *Proceedings of the 9th biennial Conference on Innovative Data Systems Research (CIDR 19)*, Asilomar, CA, 2019

OTHER EXPERIENCE

- **CMPE107: Probability and Statistics** , UC Santa Cruz , Grader Spring 2018
- **CMPS12B: Introduction to Data Structures**, UC Santa Cruz , Tutor Spring 2018
- **CMPS12B: Introduction to Data Structures**, UC Santa Cruz , Lab Tutor Winter 2018
- **CMPS101: Algorithms and Abstract Data Types**, UC Santa Cruz , Tutor Fall 2017

	<ul style="list-style-type: none"> • CMPS101: Algorithms and Abstract Data Types, UC Santa Cruz , 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: Language: Java, C, C++, Python, Scala, MATLAB, Bash, SQL, HiveQL, HTML, CSS, L^AT_EX, Go(Limited), JavaScript(Limited) • Platform: Mac OS, Windows, Linux • Tools: Perf, GDB, Valgrind, Make, Git, Vim, Neo4j, Docker • Data: Oracle, MySQL, Hadoop, Hive, Spark, Flink
REFERENCES	<p>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 Phone: 831-459-4153 E-mail: jj@soe.ucsc.edu</p> <p>Dr. Peter Alvaro University of California, Santa Cruz Assistant Professor of Computer Science and Engineering Phone: 415-813-9364 E-mail: palvaro@ucsc.edu</p> <p>Chris Parsa University of California, Santa Cruz Adjunct lecturer of of Computer Science and Engineering Phone: 831-252-9033 E-mail: cparsa@ucsc.edu</p>