

Xiangfeng Zhu

CONTACT INFORMATION	650-660-0918 zxfeng@umich.edu	xzhu27.me www.linkedin.com/in/xzhu
RESEARCH INTERESTS	Cloud Computing, Distributed Systems, Systems for ML/Big Data, Federated Learning, Video Analytics	
EDUCATION	University of Michigan, Ann Arbor B.S., Computer Science <ul style="list-style-type: none">GPA: 3.76/4.00 Univeristy of California, Santa Cruz B.S., Computer Science <ul style="list-style-type: none">GPA: 3.94/4.00	Expected: Dec 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. <i>Participant Selection for Federated Learning</i> <ul style="list-style-type: none">Developing a device management framework for client selection to tackle data and device heterogeneity in Federated Learning Undergraduate Researcher Disorderly Lab, UC Santa Cruz Advisor: Prof. Peter Alvaro <i>Nemo: Protocol Repair Using Lineage Graphs</i> <ul style="list-style-type: none">Co-Designed a debugging approach for distributed systems based on analysis of provenance data obtained during system executionsCo-Developed a standalone prototype Debugger Nemo and Evaluated our approach on the TaxDC collection of real-world bugs from large-scale distributed systems.Demonstrated 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 which 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 - Sep. 2019 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 and Prof. Ethan L. Miller

Rogue Cell tower(IMSI Catcher) detector

- Wrote a design document with three lab partners detailing the project and future work.
- Co-Designed an algorithm to pinpoint the location of IMSI Catchers based on received signal strength (RSS)

WORK EXPERIENCE

Software Engineer Intern, Databricks

May 2020 - Aug. 2020

Software Engineer Intern, Dropbox

May 2019 - Aug. 2019

Software Engineer Intern, Hainan Airline

Jun. 2018 - Aug. 2018

PUBLICATIONS

1. Fan Lai, Jie You, **Xiangfeng Zhu**, Harsha Madhyastha, Mosharaf Chowdhury, "Sol: Fast Distributed Computation Over Slow Networks", *Proceedings of the 17th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2020)*, Santa Clara, CA, 2020
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
- **CMPS101: Algorithms and Abstract Data Types**, UC Santa Cruz, Grader Fall 2017

AWARDS

- **Dean's Honor List:** Fall 2016, Winter 2017, Spring 2017, Winter 2018, Spring 2018

SKILLS

- **Language:** English, Chinese
- **Programming:** Java, C, C++, Python, Bash, SQL, HTML, CSS, L^AT_EX
- **Platform:** Mac OS, Windows, Linux
- **Tools:** Perf, GDB, Valgrind, Make, Git, Vim, Docker
- **Data:** Oracle, MySQL, 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
Phone: 831-459-4153 E-mail: jj@soe.ucsc.edu

Dr. Peter Alvaro University of California, Santa Cruz
Assistant Professor of Computer Science and Engineering
Phone: 415-813-9364 E-mail: palvaro@ucsc.edu

Chris Parsa University of California, Santa Cruz
Adjunct lecturer of of Computer Science and Engineering
Phone: 831-252-9033 E-mail: cparsa@ucsc.edu