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CUP: Channel-Utilization Persistence for MAC protocols

- 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.
- 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