

Lloyd Brown

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EDUCATION

University of California, Berkeley, Electrical Engineering & Computer Science

PhD, Computer Science, GPA: 4.00

- EECS excellence award recipient

Berkeley, CA

Fall 2019 – Present

Cornell University, College of Engineering

BSc, Computer Science, magna cum laude, GPA: 3.79

- Dean of Engineering scholarship recipient

Ithaca, NY

Fall 2015 - Spring 2019

PROJECTS

HotNets | On the Future of Congestion Control for the Public Internet

Conventional wisdom requires that all congestion control algorithms deployed on the public Internet be TCP-friendly. If universally obeyed, this requirement would greatly constrain the future of such congestion control algorithms. If partially ignored, as is increasingly likely, then there might be significant inequities in the bandwidth received by different flows. To avoid this dilemma, we propose an alternative to the TCP-friendly paradigm, which can accommodate innovation, is consistent with the Internet's current economic model, and is feasible to deploy given current usage trends.

USENIX Security | Pancake: Frequency Smoothing for Encrypted Data Stores

This project aims to create a secure key-value store which takes its relevancy from modern questions about consumer privacy. The goal is to create a store in which user's access frequencies are unknown to the service storing the user's data, providing better performance guarantees compared to traditional storage paradigms.

Universal Data Structures

Collaborator: Dr. Siddhartha Sen at Microsoft Research NYC

This project involves work on a uniquely adaptive key-value store to determine the most effective way to leverage the strengths of the best data structure for each portion of a given workload.

PUBLICATIONS

➤ On the Future of Congestion Control for the Public Internet | First author

Proceedings of the 19th ACM Workshop on Hot Topics in Networks

➤ Pancake: Frequency Smoothing for Encrypted Data Stores | Fourth author

Proceedings of the 29th USENIX Security Symposium (**Distinguished paper award**)

EXPERIENCE

UC Berkeley

Research Assistant, Advisors: Professors Scott Shenker and Sylvia Ratnasamy

Berkeley, CA

Fall 2019 - Present

- Leading project to provide a new interface to propel edge computing application development
- Leading project to challenge traditional assumptions regarding the role of wide-area congestion control
- Performed and analyzed wide-area Internet measurements to study the nature of congestion
- Helped build and evaluate a novel system for serverless computation
- Presented research findings in a lab retreat to 50+ researchers at Intel and VMware
- Mentoring 2 master's students

MICROSOFT RESEARCH

New York, NY

Computer Systems Research Intern, Supervisor: Dr. Siddhartha Sen

Summer 2018

- Designed a dynamic database that leverages the unique strengths of several data structures
- Presented findings to other researchers in an internal conference

CORNELL UNIVERSITY

Ithaca, NY

Research Assistant, Supervisor: Professor Rachit Agarwal

Spring 2017 – Spring 2019

- Researched novel techniques for secure data storage by a third party
- Researched novel techniques for multi-tenant cache sharing
- Collaborative Research Experience for Undergraduates Scholar

ELECTRONIC ARTS

Redwood Shores, CA

IT Security Project Management Intern, Supervisor Michael Lee

Summer 2017

- Led global deployment of secure hardware improving robustness of company's network, coordinating with 300 employees in 17 countries
- Developed tool to improve resource management workflow of IT through JavaScript, G Suite, and Google App Maker
- Global vendor relations development & negotiations resulting in \$20,000 savings in forecasted budget
- Gave weekly presentations to CIO level staff on the health of the department's projects

ACADEMIC HONORS AND ACTIVITIES

Google ExploreCSR panelist at Cornell University	Fall 2020
Distinguished Paper Award Winner USENIX Security	Fall 2020
Teaching Assistant for Introduction to the Internet (UC Berkeley)	Spring 2020
Teaching Assistant for Introduction to Computer Networks (Cornell)	Spring 2019
EECS Excellence award Recipient (UC Berkeley)	Fall 2019
Cornell University Dean of Engineering Scholar	Fall 2015 - Spring 2019
Collaborative Research Experience for Undergraduates Scholar (Cornell)	Fall 2017 - Spring 2018
Cornell University Engineering Dean's List	Fall 2015, Fall 2016 - Spring 2019
Intel Corporate Award for Diversity in Engineering (Cornell)	Spring 2017
ACM Richard Tapia Celebration of Diversity Scholar	Spring 2017
Underrepresented Minorities in Computing	Spring 2017 - Spring 2019