

MAYURI SRIDHAR

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EDUCATION

Massachusetts Institute of Technology:

Sept 2020 - Current

Ph.D. in Electrical Engineering

Massachusetts Institute of Technology:

Jan 2018 - Jan 2019

Master's of Engineering in Artificial Intelligence

Overall GPA: 5.0/5.0

Massachusetts Institute of Technology:

September 2013 - June 2017

B.S. in Computer Science and Mathematics

Overall GPA: 4.8/5.0

TECHNICAL SKILLS

Proficient in

Python, C++, PHP

Experienced in

C, Javascript (jQuery, Angular, Node), MySQL, Java, HTML5, TeX, R

PAPERS

“*k*-Cut: A Simple Approximately-Uniform Method for Sampling Ballots in Post-Election Audits” (published in Financial Cryptography and Data Security 2019 International Workshops). Joint work with Ronald L. Rivest (MIT); first author.

“A Peculiarity in the Parity of Primes” (pre-print on ArXiv). Joint work with Debayan Gupta (MIT); second author.

TALKS

“Four-Cut: An Approximate Sampling Procedure for Election Audits” in State Certification Testing of Voting Systems (July 2018).

“Introduction to Bayesian Audits” in Michigan RLA Kickoff Meeting (September 2018).

“*k*-Cut in Practice” during Michigan pilot audits (December 2018).

Invited Panelist at *A Practical Guide to Risk-Limiting Audits*, a joint conference between the Brennan Center for Justice, Microsoft, Common Cause and other organizations (January 2019).

RESEARCH EXPERIENCE

MIT

September 2020-Current

Ph.D. Student supervised by Prof. Wu

- Focusing on advancing reinforcement learning algorithms to improve human mobility in cities

MIT

January 2018-January 2019

M. Eng. Student supervised by Prof. Rivest

- Designed a simple approximate sampling algorithm, *k*-cut, for improving efficiency of statistically based election audits.
- This algorithm has been used in Marion County and Porter County (Indiana), Rochester Hills, Lansing, and Kalamazoo (Michigan) and Rhode Island pilot audits.
- Analyzed workload estimation and optimization for election audits.

- Analyzed correctness and convergence properties for Bayesian election audits.

MIT

September 2016-May 2017

EECS Draper Laboratory Undergraduate Research and Innovation Scholar supervised by Prof. Bresler

- Explored intrinsic structure in recommendation systems, using collaborative filtering.
- Analyzed performance on collaborative filtering algorithms and the strength of their assumptions on the Netflix data set.

SUNY Stony Brook University

March 2012-January 2013

Lab Intern under Prof. Simmerling

- Created a computer model, using Visual Molecular Dynamics, of the p53 tumor suppressor to understand structural changes caused by mutations
- Located key binding sites for developing cancer diagnostic drug treatments

New York University

July 2011-January 2012

Research Intern under Prof. Lagatta

- Created a stochastic model, in Java, to analyze the use of cooperation as an evolutionary tactic
- Defined and analyzed the most profitable behavior based on the rules of gain and loss in different societies

WORK EXPERIENCE

Facebook, Inc.

February 2019-August 2020

Software Engineer

- Worked on Societal Violence team in Civic Integrity to reduce the spread of abusive content on platform
- Focused on using of data science and machine learning to understand user behavior patterns in countries at risk of conflict
- Designed, implemented and deployed broad product changes that focused on changing platform incentives to reduce the spread of content likely to lead to offline violence

Facebook, Inc.

September 2017-December 2017

Software Engineering Intern

- Worked on the Core App Monetization team to increase Ads revenue
- Designed new features for machine learning models to improve CTR
- Deployed and tested a new model, using these features, to show a significant increase in AUC, predictive of an increase in ads revenue.

Uber ATG

June 2017-September 2017

Software Engineering Intern

- Developed image recognition models for improving offline efficiency for mapping and labeling.
- New models were deployed to the stack and tested on labelers, showing an improvement in efficiency.
- Worked on self-driving technologies, with an emphasis on mapping, safety, and autonomy.

Quora, Inc.

May 2016-August 2016

Software Engineering Intern

- Built and tested a personalized ranking system for author and topic recommendations
- Designed infrastructure to support more personalization in back-end feed ranking
- Ran offline analysis to test performance of personalized ranking over many users

Google, Inc.

May 2015-August 2015

Engineering Practicum Intern

- Built a monitoring system to analyze BigTable usage across several Google teams
- Researched and implemented several methods of statistical analysis to detect a sudden change in the size or growth of a BigTable
- Implemented a notification system to alert users of stale tables or tables with sudden growth or decay.

Build-It-Yourself

March 2014-August 2014

Platform Developer

- Headed a team of high school and middle school interns in building an interactive website
- Developed back-end to handle large sets of user data using object-oriented PHP and MySQL
- Designed an interactive user interface using Javascript (jQuery) and HTML5.

AWARDS

2019 Election Verification Network Innovation Award Winner for designing k -Cut Technique (with Prof. Rivest)

2017 Frederick C. Hennie Teaching Award Winner

Intel STS 2013 Finalist

National Merit Scholarship Recipient (2013)

TEACHING EXPERIENCE AND RELEVANT COURSES

MIT

September 2013-Present

Teaching Experience

- 6.009 (Fundamentals of Programming) Lab Assistant in Spring 2016
- 6.046 (Design and Analysis of Algorithms) Teaching Assistant in Fall 2016, Fall 2017, Spring 2018, Fall 2018

MIT

September 2013-Present

Coursework

- Design and Analysis of Algorithms
- Distributed Algorithms
- Advanced Algorithms
- Randomized Algorithms
- Machine Learning
- Artificial Intelligence
- Computer and Network Security