

UTHSAV CHITRA

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EDUCATION

Princeton University, Princeton, New Jersey

Sept 2018 - Present

Ph.D. Candidate in Computer Science

M. A. in Computer Science

Received September 2020

Brown University, Providence, Rhode Island

Sept 2013 - May 2017

Sc.B. Mathematics, A.B. Computer Science, A.B. Applied Math

GPA: 4.0/4.0

PUBLICATIONS

*Authors generally appear in order of contribution, with * denoting joint first authorship. Papers with alphabetical ordering of authors are marked with ^(A).*

Quantifying and Reducing Bias in Maximum Likelihood Estimation of Structured Anomalies. Uthsav Chitra, Kimberly Ding, Jasper C. H. Lee, Benjamin J. Raphael. *International Conference on Machine Learning (ICML) 2021, to appear.*

NetMix: A network-structured mixture model for reduced-bias estimation of altered subnetworks. Matthew A Reyna*, Uthsav Chitra*, Rebecca Elyanow, Benjamin J. Raphael. *International Conference on Research in Computational Molecular Biology (RECOMB) 2020.*

Analyzing the Impact of Filter Bubbles on Social Network Polarization^(A). Uthsav Chitra, Christopher Musco. *ACM International Web Search and Data Mining Conference (WSDM) 2020.*

Random Walks on Hypergraphs with Edge-Dependent Vertex Weights. Uthsav Chitra, Benjamin J. Raphael. *International Conference on Machine Learning (ICML) 2019.*

Committee Selection is More Similar Than You Think: Evidence from Avalanche and Stellar. Tarun Chitra, Uthsav Chitra. *Manuscript, 2019.*

HONORS AND AWARDS

NSF Graduate Research Fellowship Recipient *2020*

Jerome Stein Memorial Award, Brown University Applied Math Department *2017*

- Given to two students each year who “show outstanding potential in an interdisciplinary area that involves applied mathematics.”

Phi Beta Kappa, Brown University (elected junior year) *2016*

Top 200, William Lowell Putnam Math Competition *2015*

TEACHING

Instructor/Curriculum Developer, Princeton Prison Teaching Initiative *2019-Present*

- Teaching college-accredited algebra classes at NJ state prisons through the NJ-STEP program.
- Developing new computer science course to be taught in NJ state prisons starting in 2022.

Teaching Assistant/Grader, Brown University

- MATH 1560:** Number Theory *Spring 2016, Spring 2017*
- CSCI 1570:** Design and Analysis of Algorithms *Fall 2015, Fall 2016*
- CSCI 1450:** Probability in Computing *Spring 2015*
- CSCI 0530:** Linear Algebra for CS *Fall 2014*

- **MATH 1530:** Abstract Algebra

Spring 2014

Counselor, Program in Mathematics for Young Scientists (PROMYS)

Summer 2014

- Counselor for summer program that introduces high school students to higher math through elementary number theory.

Teaching Assistant, Art of Problem Solving

2012-2016

- Assisted online, real-time math classes in algebra, number theory, combinatorics, and geometry.
- Oversaw the message queue and helped students struggling with class material.

TALKS

NetMix: A network-structured mixture model for reduced-bias estimation of altered subnetworks

Conference on Research in Computational Molecular Biology (RECOMB)
Princeton University Generals Exam

June 2020

May 2020

Analyzing the Impact of Filter Bubbles on Social Network Polarization

ACM International Web Search and Data Mining Conference (WSDM)
KDD WISDOM Workshop

February 2020

August 2019

Random Walks on Hypergraphs with Edge-Dependent Vertex Weights

Princeton University Generals Exam
International Conference of Machine Learning (ICML)

May 2020

June 2019

STUDENTS ADVISED

Kimberly Ding, Princeton CS undergrad

2019-2021

- *Recommender Systems with Hypergraph Random Walks* (IW Fall 2019)
- *Maximum Likelihood Estimation of Structured Anomalies* (Spring 2020)
- *Spatial-NetMix: Less Biased and More Flexible Anomaly Detection* (Senior Thesis 2020-2021)
– Kimberly won the “**Outstanding Computer Science Senior Thesis Prize**” for her thesis.

Shirley Zhang, Princeton CS undergrad

Summer 2020

- *Learning DAGs using continuous optimization*

SERVICE/OUTREACH

Conference Reviewing

RECOMB 2020 (poster session), ICML 2021, NeurIPS 2021

Officer, Brown Math Departmental Undergraduate Group

2015-2017

Mentor, Brown Matched Advising Program for Sophomores

2016-2017

WORK EXPERIENCE

Software Engineer, Facebook

2017-2018

- Developed infrastructure and machine learning models for news feed ads.

Software Engineering Intern, Facebook

Summer 2016

- Worked on various projects on the Video Ads team.

Hobbies/interests: **Bouldering**, current events, political betting markets, bad puns.