

Harshay Shah

education **University of Illinois, Urbana-Champaign (UIUC)** Champaign, IL
B.S. Computer Science and Statistics, GPA 3.97/4.00 2014-2019
Summa Cum Laude (Top 3 percent) and Highest Departmental Distinction

papers *Number of Connected Components in a Graph: Estimation via Counting Patterns*
Ashish Khetan, **Harshay Shah**, and Sewoong Oh
[arXiv:1812.00139](#), 2018

Growing Attributed Networks through Local Processes
Harshay Shah, Suhansanu Kumar, and Hari Sundaram
Proceedings of the World Wide Web Conference (WWW 2019)
[arXiv:1712.10195](#), 2019.

experience **Microsoft Research** Bangalore, India
Research Fellow July 2019 - Present
Working on understanding deep learning phenomena through theory and empirics with Dr. [Praneeth Netrapalli](#) and Dr. [Prateek Jain](#) in the Machine Learning and Optimization group.

Koyejo Lab at UIUC Champaign, IL
Undergraduate Researcher July 2018 - May 2019
Generalized the Kronecker Graph Model (KPGM) to infer the multi-scale topology of structural brain networks and derived distributional graph properties as functions of model parameters and network resolution. Advised by Dr. [Sanmi Koyejo](#).

Coordinated Science Laboratory at UIUC Champaign, IL
Undergraduate Researcher May 2017 - June 2018
Augmented the Multinomial Logit model to robustly learn latent user-item preferences from partially corrupted pairwise comparisons and established minimax-optimal sample complexity of the proposed estimator. Advised by Dr. [Sewoong Oh](#).

Crowd Dynamics Lab at UIUC Champaign, IL
Undergraduate Researcher July 2016 - May 2018
Developed an interpretable and resource-constrained network growth model that unifies multiple link formation phenomena to accurately preserve global structural properties of large-scale attributed information networks. Advised by Dr. [Hari Sundaram](#).

Akuna Capital Chicago, IL
Software Engineering Intern May 2015 - July 2015
Collaborated with the trading infrastructure team to develop internal tools in Python and C++ to update financial instruments across databases and harness data for unit testing.

awards [CRA Outstanding Undergraduate Researcher](#) (Honorable Mention), 2019
Among 77 students in US & Canada recognized for research potential in computer science

[C.W. Gear Outstanding Undergraduate Student Award](#), 2019
One of two UIUC seniors selected for demonstrated interest in computer science research

[UIUC Undergraduate Conference Travel Grant](#), 2019
Received travel funds to present my work at the [World Wide Web \(WWW\) conference](#)

[IMC Trading Scholarship](#), 2018
Merit-based scholarship awarded to two Computer Science students at UIUC

[ICCP James N. Snyder Memorial Award](#), 2018
One of three UIUC juniors selected for academic merit & interest in software engineering

coursework Nonlinear Optimization, Mathematical Statistics, Machine Learning, Deep Learning, Algorithms, Statistical Computing, Numerical Methods, Network Analysis, Data Structures

projects [Escaping saddle points in non-convex optimization problems](#)
Literature survey and analysis of gradient-based methods that escape strict saddle points

[Semantic reddit graph](#)
User-friendly graph-based interface to explore semantically similar Subreddits

[Topical phrase mining](#)
Tools to evaluate topical phrases extracted from graph-based topic modeling algorithms

