Microsoft Research India
harshay.rshah@gmail.com
www.harshay.me

Harshay Shah

education

University of Illinois, Urbana-Champaign (UIUC) — Champaign, IL
B.S. Computer Science and Statistics — 2014-2019
GPA 3.97/4.00, Highest Distinction

papers

Modeling Choice via Robust Multinomial Logit model
Harshay Shah, Kiran Thekumparampil, and Sewoong Oh. In preparation.

Number of Connected Components in a Graph: Estimation via Counting Patterns
Submitted to IEEE Transactions on Signal and Information Processing over Networks
Ashish Khetan**,** **Harshay Shah**, and Sewoong Oh. arXiv:1812.00139, 2018.

Growing Attributed Networks through Local Processes
Proceedings of the World Wide Web Conference (WWW 2019)
Harshay Shah, Suhansanu Kumar, and Hari Sundaram. arXiv:1712:10195, 2019.

experience

Microsoft Research — Bangalore, India
Research Fellow — July 2019 - Present
Working with Dr. Praneeth Netrapalli and Dr. Prateek Jain in the Machine Learning and Optimization group to better understand how data distribution, network architecture and training algorithms shape optimization & generalization properties of deep neural nets.

Koyejo Lab at UIUC — Champaign, IL
Undergraduate Researcher — July 2018 - May 2019
Generalized the Kronecker Product Graph Model (KPGM) to infer multi-scale topology of structural brain networks and derived expected 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

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 Reddit communities

Topical phrase mining
Tools to evaluate topical phrases extracted from graph-based topic modeling algorithms

coursework

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

■