

# Arpit Agarwal

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## CONTACT INFORMATION

Department of Computer and Information Science  
University of Pennsylvania  
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## RESEARCH INTERESTS

My research focuses on *interdisciplinary* questions at the interface of machine learning and other fields including information elicitation, mechanism design, preference/choice modeling, and theoretical computer science.

## EDUCATION

**Ph.D. candidate in Computer & Information Science** 2016 – present  
University of Pennsylvania Philadelphia, USA  
GPA: 4.0/4.0  
Advisor: Shivani Agarwal

**Ph.D. candidate in Computer Science & Automation** 2014 – 2016  
Indian Institute of Science Bangalore, India  
Transferred to University of Pennsylvania in Fall 2016

**M.E. in Computer Science & Engineering** 2012 – 2014  
(Awarded **CSI medal** for Best Student in the outgoing batch)  
Indian Institute of Science Bangalore, India  
GPA: 7.4/8.0

**B.Tech. (Hons.) in Computer Science & Engineering** 2008 – 2012  
Kamla Nehru Institute of Technology Sultanpur, India

## RESEARCH INTERNSHIPS & VISITS

- **Google Research, Mountain View** (June, 2019 – Sept, 2019)  
Mentor: Ashwinkumar Badanidiyuru Varadaraja
- **Harvard University, Cambridge** (Sept, 2015 – Dec, 2015)  
Mentor: Prof. David Parkes

## PUBLICATIONS

- Agarwal, A., Mandal, D., Parkes, D., and Shah, N.,  
*Peer Prediction with Heterogeneous Users*.  
In ACM Transactions on Economics and Computation (**TEAC**), Forthcoming.  
Supercedes the EC-17 paper below.
- Agarwal, A., Assadi, S., and Khanna, S.,  
*Stochastic Submodular Covering with Limited Adaptivity*.  
In ACM-SIAM Symposium on Discrete Algorithms (**SODA**), 2019
- Agarwal, A., Patil, P., and Agarwal, S.,  
*Accelerated Spectral Ranking*.  
In International Conference on Machine Learning (**ICML**), 2018.
- Agarwal, A., Agarwal, S., Assadi, S., and Khanna, S.,  
*Learning with Limited Rounds of Adaptivity: Coin Tossing, Multi-Armed Bandits, and*

*Ranking from Pairwise Comparisons.*

In Conference on Learning Theory (**COLT**), 2017.

- Agarwal, A., Mandal, D., Parkes, D., and Shah, N.,  
*Peer Prediction with Heterogeneous Users.*  
In ACM Conference on Economics and Computation (**EC**), 2017.  
Invited to **TEAC special issue** for EC 2017 papers.
- Shnayder, V., Agarwal, A., Frongillo, R. and Parkes D.C.,  
*Informed Truthfulness in Multi-Task Peer Prediction.*  
In ACM Conference on Economics and Computation (**EC**), 2016. A shorter version appeared in **HCOMP** Workshop on Mathematical Foundations of Human Computation, 2016.
- Agarwal, A. and Agarwal, S.,  
*On Consistent Surrogate Risk Minimization and Property Elicitation.*  
In Conference on Learning Theory (**COLT**), 2015.
- Agarwal, A., Narasimhan, H., Kalyanakrishnan, S. and Agarwal, S.,  
*GEV-Canonical Regression for Accurate Binary Class Probability Estimation when One Class is Rare.*  
In International Conference on Machine Learning (**ICML**), 2014.

TALKS/  
PRESENTATIONS

- Stochastic Submodular Covering with Limited Adaptivity
  - Algorithms seminar, Google Research, Mountain View 2019
  - ACM-SIAM Symposium on Discrete Algorithms (SODA), San Diego 2019
- Accelerated Spectral Ranking
  - NYC research seminar, Google Research, New York 2018
  - International Conference on Machine Learning (ICML), Stockholm 2018
  - Summer UG research program, University of Pennsylvania, Philadelphia 2018
- Learning with Limited Rounds of Adaptivity: Coin Tossing, Multi-Armed Bandits, and Ranking from Pairwise Comparisons
  - CSA Department Seminar, Indian Institute of Science, Bangalore 2017
  - ML seminar, Microsoft Research, Bangalore 2017
  - Conference on Learning Theory (COLT), Amsterdam, Netherlands 2017
- On Consistent Surrogate Risk Minimization and Property Elicitation
  - ACM IKDD, Pune, India 2016
  - EconCS seminar, Harvard University, Cambridge 2015
- GEV-Canonical Regression for Accurate Binary Class Probability Estimation when One Class is Rare
  - International Conference on Machine Learning (ICML), Beijing 2014
- Randomization at work: An Introduction to Randomized Algorithms
  - CSA Undergraduate Summer School, Indian Institute of Science, Bangalore 2013

TEACHING  
EXPERIENCE

- Teaching Assistant, Advanced Topics in Machine Learning (CIS 620) Fall 2018  
University of Pennsylvania
- Teaching Assistant, Machine Learning (CIS 520) Fall 2017  
University of Pennsylvania
- Teaching Assistant, Machine Learning (E0 270) Spring 2016  
Indian Institute of Science

ADVISING &  
SERVICE

- **Mentoring undergraduate students**
  - Arnab Sarker, University of Pennsylvania, “A unified framework for quantile elicitation with applications”, 2018-2019.
  - Jane Lee, University of Pennsylvania, “Multiclass classification under asymmetric label noise”, 2018-2019.
- **Organizational activities**
  - Volunteer for Penn Research in Machine Learning (PRiML) forum, University of Pennsylvania, 2018-2019.
  - Member of Departmental Curriculum Committee, Computer Science & Automation, Indian Institute of Science, 2015-2016.
  - Lead volunteer for Big Data Initiative, Indian Institute of Science, 2014-2015.
- **Conference reviewing activities**– STOC 2020, SODA 2020, ICML 2019, AISTATS 2019, N(eur)IPS 2018, COLT 2018, 2017.
- **Journal reviewing activities**– JAIR, JMLR.

REFERENCES

- **Shivani Agarwal**  
Rachleff Family Associate Professor  
Department of Computer and Information Science  
University of Pennsylvania  
Levine Hall, 3330 Walnut Street  
Philadelphia, PA 19104, USA  
E-mail: [ashivani@seas.upenn.edu](mailto:ashivani@seas.upenn.edu)
- **David Parkes**  
George F. Colony Professor of Computer Science  
Co-Director, Harvard Data Science Initiative  
School of Engineering and Applied Sciences  
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Cambridge, MA 02138, USA  
E-mail: [parkes@eecs.harvard.edu](mailto:parkes@eecs.harvard.edu)
- **Sanjeev Khanna**  
Henry Salvatori Professor  
Department of Computer and Information Science  
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Philadelphia, PA 19104, USA  
E-mail: [sanjeev@cis.upenn.edu](mailto:sanjeev@cis.upenn.edu)