

Amit Sharma

Education

- 2010–2015 **Ph.D. Computer Science**, *Cornell University*, Ithaca, NY, 3.99/4.
Advisor: Dan Cosley
Dissertation: The interplay of personal preferences and social influence in online sharing networks
Committee: Dan Cosley, Johannes Gehrke, Levent Orman
Awarded Master of Science (M.S.) in January 2014. Graduate Minor in Business.
- 2006–2010 **B.Tech. (Honors) Computer Science and Engineering**, *Indian Institute of Technology Kharagpur*, WB, India, 9.63/10.
Advisor: Partha P. Chakrabarti
Thesis: Algorithms for Generating Ordered Solutions for Explicit AND/OR Graphs
CPA: Ranked second in the department and fourth university-wide.

Professional Experience

- July 2015 – **Microsoft Research**, New York, USA.
Present Postdoctoral Researcher.
Key Focus: Causal inference in online systems.
- May 2014 – **Microsoft Research**, New York, USA.
Aug 2014 Research Intern with Jake Hofman and Duncan Watts.
Estimation of causal effect of recommendation systems.
- May 2013 – **Google Inc.**, Mountain View, USA.
Aug 2013 Engineering Intern with Gueorgi Kossinets.
Inference of attributes for local businesses, studying the evolution of their ratings.
- May 2012 – **LinkedIn Corp.**, Mountain View, USA.
Aug 2012 Engineering Intern with Baoshi Yan.
Pairwise models for learning implicit user feedback in a community recommendation system.
- May 2009 – **EPFL**, Lausanne, Switzerland.
July 2009 Research Intern with Frederic Kaplan, Khaled Bashour and Pierre Dillenbourg.
Prosodic analysis of speech and visualizations for supporting collaborative dialogue.
- May 2008 – **IBM Research**, New Delhi, India.
July 2008 Research Intern with Gargi Dasgupta, Akshat Verma and Anindya Neogi.
Local-optimal search algorithm for dynamic composition of web services, GUI tool for analyzing server power consumption.

Honors and Awards

- 2016 Honorable Mention for Best Paper award at the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW). Top 5% paper in that year at a peer-reviewed international research conference.
- 2012 Yahoo! Key Scientific Challenges (KSC) Award for research on recommender systems. National award given to 30 students in the USA.
- 2012 Selected for the NSF Summer Social Webshop on Technology-Mediated Social Participation, University of Maryland.
- 2011 Selected to attend the “Making sense of social media” summer school at the Leibniz Graduate School for Knowledge Media Research, Tubingen, Germany.

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- 2010 Computer Science Fellowship, Cornell University.
- 2010 Honorable Mention for excellence in technology, IIT Kharagpur. University-wide award for the graduating class.
- 2009 Honda Young Engineer and Scientist (YES) award. Awarded to 10 students in India.
- 2007 Jagadis Bose National Science Talent Search Scholarship (JBNSTS), India. A scholarship aimed at promoting scientific thought among undergraduates.

Papers

Working Papers

- 2017 **Split-door criterion for causal identification: Automatic search for natural experiments**
Amit Sharma, Jake Hofman, and Duncan Watts. In *submission to Annals of Applied Statistics*.
- 2017 **Necessary and probably sufficient test for finding valid instrumental variables**
Amit Sharma. *Working paper*.

Peer-reviewed Conference Publications

- 2017 **Identifying differential performance across demographics for search engines**
Rishabh Mehrotra, Ashton Anderson, Fernando Diaz, Amit Sharma, Hanna Wallach, and Emine Yilmaz. In *Proceedings of the 26th International Conference on World Wide Web, WWW '17*. ACM.
- 2016 **Predictability of popularity: Gaps between prediction and understanding**
Benjamin Shulman, Amit Sharma, and Dan Cosley. In *Proceedings of the 10th International Conference on Web and Social Media, ICWSM '16*. AAAI.
- 2016 **Averaging gone wrong: Using time-aware analyses to better understand behavior**
Samuel Barbosa, Dan Cosley, Amit Sharma, and Roberto M. Cesar-Jr. In *Proceedings of the 25th International Conference on World Wide Web, WWW '16*. ACM.
- 2016 **Exploring limits to prediction in complex social systems: Predicting cascade size on Twitter**
Travis Martin, Jake M. Hofman, Amit Sharma, Ashton Anderson, and Duncan J. Watts. In *Proceedings of the 25th International Conference on World Wide Web, WWW '16*. ACM.
- 2016 **Distinguishing between personal preferences and social influence in online activity feeds (Honorable Mention for Best Paper award)**
Amit Sharma and Dan Cosley. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing, CSCW '16*. ACM.
- 2015 **Estimating the causal impact of recommendation systems from observational data**
Amit Sharma, Jake M. Hofman, and Duncan J. Watts. In *Proceedings of the 16th ACM Conference on Economics and Computation, EC '15*. ACM.
- 2015 **Studying and modeling the connection between people's preferences and content sharing**
Amit Sharma and Dan Cosley. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing, CSCW '15*. ACM.
- 2013 **Do social explanations work? Studying and modeling the effects of social explanations in recommender systems**
Amit Sharma and Dan Cosley. In *Proceedings of the 22nd International Conference on World Wide Web, WWW '13*. ACM.
- 2013 **Pairwise learning in recommendation: Experiments with community recommendation on LinkedIn**
Amit Sharma and Baoshi Yan. In *Proceedings of the 7th ACM Conference on Recommender Systems, RecSys '13*. ACM.

- 2013 **Friends, strangers, and the value of ego networks for recommendation**
Amit Sharma, Mevlana Gemici, and Dan Cosley. In *Proceedings of the 7th International Conference on Web and Social Media, ICWSM '13 Short papers*. AAAI.
- 2011 **Network-centric recommendation: Personalization with and in social networks**
Amit Sharma and Dan Cosley. In *Proceedings of the 3rd IEEE International Conference on Social Computing, SocialCom '11*. IEEE.
- 2011 **Recomp: Qos-aware recursive service composition at minimum cost**
Vimmi Jaiswal, Amit Sharma, and Akshat Verma. In *Proceedings of the IFIP/IEEE International Symposium on Integrated Network Management*.

Journal Publications

- 2017 **Prediction and explanation in social systems** Jake M. Hofman, Amit Sharma, and Duncan J. Watts. *Science*, 355(6324):486–488.
- 2012 **Algorithms for generating ordered solutions for explicit AND/OR structures**
Priyankar Ghosh, Amit Sharma, P. P. Chakrabarti, and Pallab Dasgupta. *Journal of Artificial Intelligence Research (JAIR) and Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*.
- 2011 **Workload management for power efficiency in virtualized data centers**
Gargi Dasgupta, Amit Sharma, Akshat Verma, Anindya Neogi, and Ravi Kothari. *Communications of the ACM*.

Workshops and Demos

- 2014 **Personalization in social networks: Modeling the underlying social processes**
Amit Sharma. In *Proc. Data Design for Personalization Workshop, WSDM*.
- 2013 **A research platform for recommendation within social networks**
Amit Sharma. In *Proc. Recommender Systems and the Social Web Workshop, RecSys*.
- 2013 **Popcore: A system for network-centric recommendations**
Amit Sharma. In *Proc. CSCW*.
- 2011 **Popcore: A system for network-centric recommendations**
Amit Sharma, Meethu Malu, and Dan Cosley. In *Proceedings of the Recommender Systems and Social Web Workshop, co-located with the 5th ACM Conference on Recommender Systems, RSWeb '11*.

Patents

- 2013 Filed as a co-inventor for Google Inc. Details to be made available once accepted.

Talks

Invited talks

- Nov 2016 **Causal inference in data science**, *Third Engineering and Data Science Conference (DataEngConf)*, New York.
- Oct 2016 **Limits of social influence in online social networks**, *Affective Brain Lab, University College London*.
- Oct 2016 **Organizational Spectroscope: Predicting employee attitudes using email metadata**, *Conference on the Frontiers of Computational Social Science, University of Chicago*.
- Sep 2016 **Data mining for natural experiments**, *Microsoft Economics and Computation conference, New York*.
- Apr 2016 **Data mining for natural experiments**, *Marketing Seminar, MIT Sloan School of Management*.

- Oct 2015 **Here, there, causality is everywhere: A practical guide to causal inference**, *Appnexus Inc., New York.*
- Nov 2014 **Estimating the causal effect of online recommendation and social feeds**, *Knewton Inc., New York.*
- Jun 2014 **Effect of social explanations in recommender systems**, *Amazon Inc., Seattle.*
[Recent conferences/workshops](#)
- Nov 2016 **Auditing search engines for differential satisfaction across demographics**, *Workshop on Data Accountability and Transparency (DAT), New York University Law School.*
- Oct 2016 **Split-door criterion for causal identification: Automatic search for natural experiments**, *MIT Conference on Digital Experimentation (CODE), Atlantic Causal Inference Conference (ACIC).*
- May 2016 **Necessary and probably sufficient test for validating instrumental variables**, *MIT Conference on Digital Experimentation (CODE), Atlantic Causal Inference Conference (ACIC).*
- May 2016 **Estimating the causal impact of recommendation systems from observational data**, *International Conference on Computational Social Science (IC2S2), AAAI Spring Symposium on Observational Studies through Social Media and Other Human-Generated Content, MIT Conference on Digital Experimentation (CODE).*
- Mar 2016 **Distinguishing between personal preferences and social influence in online activity feeds**, *AAAI Spring Symposium on Observational Studies through Social Media and Other Human-Generated Content.*

Tutorials

- Jun 2016 **Causal inference tutorial**, *2nd International Conference on Computational Social Science.*
Designed and taught a tutorial on causal inference, including both lecture and practical sessions. ([Link](#))

Advising and Mentoring

- Summer 2015, **Project Mentor**, *Microsoft*, Data Science Summer School.
2016 Mentored college students from the New York City area on data science projects for two successive years.
One of the projects, "Cost of public schools" won First place in the undergraduate poster session of the 2016 ACM Richard Tapia Celebration of Diversity in Computing conference.
In both years, students' work was accepted as poster presentations at the MIT Conference on Digital Experimentation (CODE).
- Spring 2014 **Mentor**, *Cornell*, Term project on recommender systems.
Mentored a team of Masters students from the Statistics department on their independent project. Their project won the Best final-year project award in the department.
- 2015-2016 **Mentor**, *Microsoft*, Topics in Computational Social Science.
Joseph Risi, Graduate, Stevens Institute of Technology
Rishabh Mehrotra, Ph.D. student, University College London
Abigail Jacobs, Ph.D. student, University of Colorado
- 2011-2015 **Independent study mentor**, *Cornell*, Topics in social recommendation systems.
Benjamin Shulman (M. Eng. Computer Science)
Michael Triche (M.P.S. Information Science)
Meethu Malu (M. Eng. Information Science)
Shruti Gautam (M.Eng. Computer Science)
Arpana Hosabettu, Ganesh Gupta, Harsh Shah (M.Eng. Computer Science)
Yulan Miao (Undergraduate)

Teaching Experience

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- Fall 2016 **Guest lecture**, *Microsoft*, Data Science Summer School.
Gave a lecture on causation versus prediction, and best practices for inference from data.
- Spring 2014 **Co-Instructor**, *INFO 6940*, Readings in Recommender Systems.
Designed and co-taught a new course on recommender systems.
- Fall 2013 **Head Teaching Assistant**, *INFO 1300*, Introduction to Web Design and Programming.
Instructor: Dan Cosley
Responsible for designing a project for the class and co-ordinating assignment grading sessions for a team of 35 TAs.
Taught a short lecture on JQuery.
- Spring 2012 **Teaching Assistant**, *CS 4758/6758*, Robot Learning.
Instructor: Ashutosh Saxena
Responsible for designing homework problems and assignment grading.

Service and Participation

Proceedings editor

Proceedings Co-chair for Poster session of ACM Conference on Recommender Systems 2016 (RecSys).

Program committee member

WWW: International World Wide Web conference (2017)

WSDM: ACM International Conference on Web Search and Data Mining (2017)

UMAP: User Modeling, Adaptation and Personalization (2014)

RSWeb: Workshop on Recommender Systems and the Social Web (2014, 2013)

SocialCom: IEEE Conference on Social Computing (2012)

Reviewer

NSF: Reviewed a grant for the Division of Information and Intelligent Systems (IIS)

NIPS: Neural Information Processings Systems (2016)

CHI: Conference on Human Factors in Computing Systems (2017, 2016)

CSCW: ACM Conference on Computer-Supported Cooperative Work and Social Computing (2017)

TIST: ACM Transactions on Intelligent Systems and Technology (2014)

RecSys: ACM Conference on Recommender Systems (2013)

TOCHI: ACM Transactions on Computer-Human Interaction (2013)

SocialCom: IEEE Conference on Social Computing (2011)

Community participation

Judge for 2015 Data science student challenge, Columbia University.

Mentored participating teams at the Cornell Tech data hackathon 2016.

Computer Science Field Representative, Graduate and Professional Student Assembly (GPSA), Cornell University (2012-2014).

Member of Asha Cornell, a volunteer organization dedicated to basic educational efforts for underprivileged children in India.