

Xiaorui Sun

CONTACT INFORMATION	Simons Institute for the Theory of Computing University of California, Berkeley Berkeley, CA 94720	<i>Cellular:</i> 347-583-7011 <i>Email:</i> xiaoruisun@cs.columbia.edu <i>Webpage:</i> www.cs.columbia.edu/~xiaoruisun/
RESEARCH INTERESTS	Algorithms with an emphasis on massive data analysis, including algorithmic graph theory, massively parallel computing, and machine learning theory	
CURRENT POSITION	Simons Institute for the Theory of Computing, Berkeley, CA, USA Google Research Fellow	2016 – Present
EDUCATION	Columbia University, New York, NY, USA Ph.D., Computer Science • Dissertation: “On the Isomorphism Testing of Graphs” • Advisor: Professor Xi Chen Shanghai Jiao Tong University, Shanghai, China M.E., Computer Science B.E., Computer Science	2011 – 2016 2008 – 2011 2004 – 2008
AWARDS AND HONORS	Google Research Fellow Simons Award for Graduate Students in Theoretical Computer Science Edith Shih Scholarship The ECML PKDD Best Student Paper Award Morgan Stanley Scholarship Excellent Undergraduate Thesis Award, Shanghai Jiao Tong University Microsoft Research Asia Young Fellow ACM International Collegiate Programming Contest, Asian Champion	2016 – 2017 2014 – 2016 2013 2010 2009 2008 2007 2004
PUBLICATIONS	Efficient Massively Parallel Methods for Dynamic Programming Sungjin Im, Benjamin Moseley, Xiaorui Sun <i>Manuscript</i> The Query Complexity of Testing Graph Isomorphism Krzysztof Onak, Xiaorui Sun <i>Manuscript</i> Faster Canonical Forms for Primitive Coherent Configurations Xiaorui Sun, John Wilmes <i>In ACM Symposium on Theory of Computing (STOC) 2015.</i> <i>Invited to SIAM Journal on Computing Special Issue.</i> On the Complexity of Optimal Lottery Pricing and Randomized Mechanisms Xi Chen, Ilias Diakonikolas, Anthi Orfanou, Dimitris Pappas, Xiaorui Sun, Mihalis Yannakakis <i>In IEEE Symposium on Foundations of Computer Science (FOCS) 2015.</i>	

Near-Optimal Density Estimation in Near-Linear Time Using Variable-Width Histograms

Siu-On Chan, Ilias Diakonikolas, Rocco A. Servedio, Xiaorui Sun

In Annual Conference on Neural Information Processing Systems (NIPS) 2014.

Efficient Density Estimation via Piecewise Polynomial Approximation

Siu-On Chan, Ilias Diakonikolas, Rocco A. Servedio, Xiaorui Sun

In ACM Symposium on Theory of Computing (STOC) 2014.

A Composition Theorem for Parity Kill Number

Ryan O'Donnell, Xiaorui Sun, Li-Yang Tan, John Wright, Yu Zhao

In IEEE Conference on Computational Complexity (CCC) 2014.

The Complexity of Optimal Multidimensional Pricing

Xi Chen, Ilias Diakonikolas, Dimitris Pappas, Xiaorui Sun, Mihalis Yannakakis

In ACM-SIAM Symposium on Discrete Algorithms (SODA) 2014.

Faster Canonical Forms For Strongly Regular Graphs

László Babai, Xi Chen, John, Wilmes, Xiaorui Sun, Shang-Hua Teng

In IEEE Symposium on Foundations of Computer Science (FOCS) 2013.

Invited to SIAM Journal on Computing Special Issue.

Multi-Stage Propagation and Quasipolynomial-Time Isomorphism Testing of Steiner 2-Systems

Xi Chen, Xiaorui Sun, Shang-Hua Teng

In ACM Symposium on Theory of Computing (STOC) 2013.

Learning Mixtures of Structured Distributions over Discrete Domains

Siu-On Chan, Ilias Diakonikolas, Rocco A. Servedio, Xiaorui Sun

In ACM-SIAM Symposium on Discrete Algorithms (SODA) 2013.

Information Dissemination via Random Walks in d-Dimensional Space

Henry Lam, Zhenming Liu, Michael Mitzenmacher, Xiaorui Sun, Yajun Wang

In ACM-SIAM Symposium on Discrete Algorithms (SODA) 2012.

Optimal Pricing in Social Networks with Incomplete Information

Wei Chen, Pinyan Lu, Bo Tang, Xiaorui Sun, Yajun Wang, Zeyuan Allen Zhu

In Workshop on Internet & Network Economics (WINE) 2011.

Asymptotically Optimal Strategy-Proof Mechanisms for Two-Facility Games

Pinyan Lu, Yajun Wang, Xiaorui Sun, Zeyuan Allen Zhu

In ACM Conference on Electronic Commerce (EC) 2010.

A Game Theoretic Framework to Identify Overlapping Communities in Social Network.

Wei Chen, Zhenming Liu, Xiaorui Sun, Yajun Wang.

*In European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD) 2010, **Best Student Paper**. Invited to Data Mining and Knowledge Discovery Journal.*

PRESENTATIONS “The Query Complexity of Testing Graph Isomorphism.”

- Algorithm and Uncertainty Seminar, Simons Institute, Berkeley, USA, 2016
- Columbia University Theory Seminar, New York, USA, 2016

“Efficient Density Estimation via Piecewise Polynomial Approximation.”

- Toyota Technological Institute at Chicago, Chicago, USA, 2016

- STOC, New York, USA, 2014

“On the Order of the Automorphism Groups of Strongly Regular Graphs.”

- American Mathematical Society(AMS) sectional meeting, Knoxville, TN, USA, 2014

“Faster Canonical Forms For Strongly Regular Graphs.”

- FOCS, Berkeley, USA, 2013

“Multi-Stage Propagation and Quasipolynomial-Time Isomorphism Testing of Steiner 2-Systems.”

- IBM Watson Research Center Theory Seminar, Yorktown Heights, USA, 2013
- STOC, Palo Alto, USA, 2013
- Columbia University Theory Seminar, New York, USA, 2013

“Learning Mixtures of Structured Distributions over Discrete Domains.”

- NYU Polytechnic Theory Seminar, New York, USA, 2013
- SODA, New Orleans, USA, 2013

“Asymptotically Optimal Strategy-Proof Mechanisms for Two-Facility Games.”

- Summer School on Algorithmic Game Theory, Fudan University, Shanghai, China, 2010
- ACM Conference of Electronic Commerce, Boston, USA, 2010

RESEARCH
EXPERIENCE

IBM Watson Research Center, Yorktown Heights, NY, USA 2013

Research Intern
Mentor: Krzysztof Onak

City University of Hong Kong, Hong Kong 2010

Research Assistant
Mentor: Professor Xiaotie Deng

Microsoft Research Asia, Beijing, China 2007, 2009–2010

Research Intern
Mentor: Yajun Wang, Ting Zhang

SERVICE

Journal Reviewer: Journal of Computer and System Sciences, Journal of Computer Science and Technology, Theoretical Computer Science

Conference Reviewer: STOC 2016, SODA 2016, RANDOM 2015, STOC 2015, WINE 2015, ESA 2014, ICALP 2014, SAGT 2014, RANDOM 2013, SAGT 2011, WINE 2010

Organizer: Whiteboard Seminar, Algorithm and Uncertainty Program, Simons Institute for the Theory of Computing, Fall 2016

TEACHING
EXPERIENCE

Teaching Assistant at Columbia University

Randomness in Computing Fall 2012
Introduction to Computational Learning Theory Fall 2012
Analysis of Algorithms Spring 2012