

# Chao Xu

Research Scientist, Scalable Algorithms and Machine Learning Group, Yahoo Research

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## Research Interest

Combinatorial Optimization · Computational Geometry · Algorithms

## Education

- 2018 PHD in Computer Science, University of Illinois at Urbana-Champaign  
Advisors: Karthik Chandrasekaran and Chandra Chekuri.
- 2013 BS in Mathematics and Applied Mathematics & Statistics with minor in Computer Science, Stony Brook University

## Visiting Positions

- Jun.-Aug. 2017 Visiting Researcher, National Institute of Informatics, Tokyo, Japan.  
Hosted by Ken-ichi Kawarabayashi.
- Jun.-Aug. 2015 Visiting Scholar, New York University, New York, USA.  
Hosted by Boris Aronov.

## Conference Publications

- 2018 Karthekeyan Chandrasekara, Chao Xu, and Xilin Yu. Hypergraph  $k$ -cut in randomized polynomial time. In *Proceedings of the Twenty-Ninth Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1426–1438.
- 2017 Kristóf Bérczi, Karthekeyan Chandrasekaran, Tamás Király, Euiwoong Lee, and Chao Xu. Global and Fixed-Terminal Cuts in Digraphs. In *Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques (APPROX/RANDOM 2017)*, volume 81 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 2:1–2:20, Dagstuhl, Germany, 2017.
- 2017 Konstantinos Koiliaris and Chao Xu. A faster pseudopolynomial time algorithm for subset sum. In *Proceedings of the Twenty-Eighth Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1062–1072. SIAM, 2017.
- 2017 Chandra Chekuri and Chao Xu. Computing minimum cuts in hypergraphs. In *Proceedings of the Twenty-Eighth Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1085–1100. SIAM, 2017.

- 2015 Chandra Chekuri, Thapanapong Rukkanchanunt, and Chao Xu. On element-connectivity preserving graph simplification. In Nikhil Bansal and Irene Finocchi, editors, *Algorithms - ESA 2015*, volume 9294 of *Lecture Notes in Computer Science*, pages 313–324. Springer Berlin Heidelberg, 2015.
- 2015 Hsien-Chih Chang, Jeff Erickson, and Chao Xu. Detecting weakly simple polygons. In *Proceedings of the Twenty-Sixth Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1655–1670. SIAM, 2015.

## Journal Publications

- 2018 Chao Xu and Qian Zhang. The shortest kinship description problem. *Information Processing Letters*, 138:61 – 66, 2018.
- 2018 Kristóf Bérczi, Karthekeyan Chandrasekaran, Tamás Király, Euiwoong Lee, and Chao Xu. Beating the 2-approximation factor for global bicut. *Mathematical Programming*, Mar 2018.
- 2016 Chao Xu. Reconstructing edge-disjoint paths faster. *Operations Research Letters*, 44(2):174 – 176, 2016.
- 2013 Neil J. Calkin, Janine E. Janoski, Allison Nelson, Sydney Ryan, and Chao Xu. Champion spiders in the game of Graph Nim. *Congr. Numer.*, 218:5–19, 2013.

## Teaching

- F 2016 CS 374 Algorithms and Models of Computation @ UIUC. Teaching Assistant
- F 2015 CS 498 DL1 “new ” CS 473 Theory II @ UIUC. Teaching Assistant
- S 2015 CS 498 DL1 “new ” CS 473 Theory II @ UIUC. Teaching Assistant
- F 2014 CS 374 Algorithms and Models of Computation @ UIUC. Teaching Assistant
- F 2013 CS 373 Introduction to Theory of Computation @ UIUC. Teaching Assistant
- F 2010 AMS 345 Computational Geometry @ Stony Brook University. Teaching Assistant

## Fellowship/Scholarship

- 2017 NSF East Asia and Pacific Summer Institute (EAPSI) Fellow
- 2016-2017 State Farm Companies Foundation Doctoral Scholar
- 2010-2012 NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)