

## Yipu Wang

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## Research Interests

Combinatorial Optimization; Planar Graph Algorithms; Computational Topology

## Education

2013-present *University of Illinois at Urbana-Champaign*  
Ph.D. in Computer Science, expected May 2020  
Advisor: Jeff Erickson  
2009-2013 *Cornell University*  
A.B. in Mathematics and Computer Science (double major)

## Current Submissions and Manuscripts

- *Maximum integer flow in planar graphs with vertex capacities and multiple sources and sinks*. To appear in the 30th ACM-SIAM Symposium on Discrete Algorithms (2019)
- *Topologically trivial closed walks in directed surface graphs*. With Jeff Erickson. Preprint, Jul 2018.
- *Four shortest vertex-disjoint paths in planar graphs*. With Jeff Erickson. Preprint, Apr 2018.
- *Maximal Unbalanced Families*. With Louis J. Billera, Justin Tatch Moore, Costantino Dufort Moraites, and Kameryn J. Williams. Preprint, Sep 2012. arXiv:1209.2309.

## Work Experience

2013-present *University of Illinois at Urbana-Champaign* - Teaching/Research Assistant  
TA for CS473: Fundamental Algorithms, CS374: Algorithms and Models of Computation  
RA with Prof. Jeff Erickson  
Summer 2015 *Alcatel-Lucent Bell Labs Consulting* - Intern  
Developed methods of detecting and fixing errors in a relational database containing telecommunications data (SQL)  
2010-2013 *Cornell University* - Teaching Assistant  
CS2800: Discrete Structures, CS4820: Introduction to Algorithms, CS4850: Mathematical Foundations for the Information Age & Intro to Analysis of Algorithms  
Summer 2013 *Applied Science Innovations* - Intern  
Developed methodology and implemented code enabling constant self-correction in a

measuring instrument used to detect imperfections in aspheric domes and windows  
(MATLAB)

Summer 2011 *X-Ray Optical Systems* - Intern

Developed software for a system detecting harmful chemicals in solid objects using  
emitted x-ray frequencies (C++)

### **Programming Languages**

Python, Java, MATLAB

### **Awards and Honors**

2015 Honorable Mention, NSF Graduate Research Fellowship Program

2013 Honorable Mention, Ford Foundation Fellowship Predoctoral Competition

### **Invited Talks**

Nov 2017 *Four shortest vertex-disjoint paths in planar graphs*, Oregon State University