

Yang Yuan

Address:
107B Wiedmaier Court
Ithaca, NY, 14850

Phone: +1-607-319-9166
E-mail: callowbird@gmail.com
Homepage: www.callowbird.com

Research Interests

I am interested in Machine Learning, Optimization, Game Theory and Mechanism Design.

Education

CORNELL UNIVERSITY Aug, 2012 – present
Ph.D. student in Theory Group, Computer Science Department.
Advisor: Prof. Robert Kleinberg.

MICROSOFT RESEARCH NEW ENGLAND Sep, 2014 – June, 2015
Visiting student
Advisor: Prof. Robert Kleinberg.

PEKING UNIVERSITY Sep, 2008 – Jun, 2012
B.S. *summa cum laude* in Computer Science (honors track). GPA: 3.77/4.0, Rank: 2/138.
Thesis title: Design and Implementation of a Token-based Approach to Code Clone Detection.
Thesis advisor: Prof. Yao Guo. With Distinguished Dissertation Award (top 3%).

Publications

(Working paper) “Optimal Auctions vs. Anonymous Pricing”, with Saeed Alaei, Jason Hartline, Robert Kleinberg, Rad Niazadeh, and Emmanouil Pountourakis.

Rong Ge, Furong Huang, Chi Jin, and Yang Yuan, “Escaping From Saddle Points – Online Stochastic Gradient for Tensor Decomposition”, in COLT 2015.

Rad Niazadeh, Yang Yuan, Robert Kleinberg, “Simple and Near-Optimal Mechanisms for Market Intermediation”, in WINE 2014.

Robert Kleinberg and Yang Yuan, “On the Ratio of Revenue to Welfare in Single-Parameter Mechanism Design”, in EC 2013.

Wei Chen, Yajun Wang and Yang Yuan, “Combinatorial Multi-Armed Bandit: General Framework, Results and Applications”, in ICML 2013.

Yang Yuan and Yao Guo, “Boreas: An Accurate and Scalable Token-based Approach to Code Clone Detection”, in ASE 2012.

Yang Yuan, “A Fast Parallel Branch and Bound Algorithm for Treewidth”, in ICTAI 2011.

Projects

Research Intern, Twitter Jun, 2014 – Aug, 2014
Manager: Reid Andersen.
Advisor: Ashish Goel.

Topic: Mechanism Comparison at Twitter

- Compared two reserve mechanism with one reserve mechanism. Got some approximation results.
- Designed a truthful mechanism for the multiple one-slot ads display auction.
- Found a NE in the budget throttling setting, which converges super fast, and had good CPE & revenue.
- Used scalding and ipython to do many related simulations with large scale (half million auctions).

Research Intern, Theory Group, Microsoft Research Asia Sep, 2011 – Jun, 2012
Supervisors: Dr. Wei Chen and Dr. Yajun Wang.

Topic: Parallel algorithms for Hyperbolic delta of real-world networks and random graphs

- Designed an algorithm with EdgeNum heuristic for computing hyperbolic delta.
- Implemented the algorithm with EdgeNum heuristic in parallel.

Research Assistant, Peking University Jul, 2010 – Jun, 2012

Advisor: Prof. Yao Guo.

Topic: Code clone detection and aspect mining in Software Engineering

- Implemented Boreas, which is 5-100 times faster than the state-of-the-art algorithm Deckard, and produces results with equally good clone quantity and quality.
- Found a bug in JDK source code (reported).
- Implemented a code plagiarism detecting system embedded into Web IDE.
- Two courses in PKU adopted this system to check students' homework.

Research Assistant, Peking University Sep, 2009 – Mar, 2011

Advisors: Prof. Tian Liu and Prof. Ke Xu.

Topic: Fast parallel algorithm for Treewidth

- Designed a new fast algorithm for Treewidth, which works in parallel.
- Solved 17 benchmark graphs whose exact treewidths were previously unknown.
- The algorithm is 40-200 times faster than the state-of-the-art algorithm.

Talks

Escaping From Saddle Points – Online Stochastic Gradient for Tensor Decomposition

- Cornell CS Theory Tea, 2015

Simple and Near-Optimal Mechanisms for Market Intermediation

- WINE 2014, Beijing

On the ratio of revenue to welfare in single parameter mechanism design

- EC 2013, Philadelphia

Combinatorial multi-armed bandit problem

- STEM Grad Student Summer Colloquium, Cornell, 2013

Fast algorithm for Treewidth

- ICTAI 2011, Florida
- Computer Basis Honors Track, Peking University, 2011

Awards

Jeff Hawkins & Janet Strauss Fellowship	2012
Pivot of Merit Student	2011
Tung OOCL Scholarship	2010
Kwang-Hua Scholarship	2009
Huaying Scholarship	2007 – 2008

Computer Skills C & C++, JAVA, Python, Scala, Matlab, TikZ