

# Tao Xiao

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## Education

### Shanghai Jiao Tong University

Ph.D in Computer Science

Advisors: Prof. Xiaotie Deng and Prof. Pinyan Lu

Thesis: Mechanism Design Through the Lens of Approximation.

2013/09-2019/06(expected)  
Shanghai, China

### Shanghai Jiao Tong University

B.E. in Computer Science

2009/09-2013/07  
Shanghai, China

### No.2 Middle School of Jingdezhen, Jiangxi.

2006/09-2009/06

## Research Interest

I have a broad interest in theoretical computer science and its applications. Currently my focus is on algorithmic mechanism design, social choice theory, and their applications.

## Working Papers

### Size Relaxing Approximation Algorithms for Committee Selection

Joint work with Sujoy Sikdar, Lirong Xia

### On the complexity of Sequential Posted Pricing

Joint work with Zhengyang Liu

## Publications

### Tight Approximation Ratio of Anonymous Pricing

Joint work with Yaonan Jin, Pinyan Lu, Qi Qi and Zhihao Tang  
STOC'19

### Tight Revenue Gaps among Simple Mechanisms

Joint work with Yaonan Jin, Pinyan Lu and Zhihao Tang  
SODA'19

### Nearly tight bounds for sandpile transience on the grid

Joint work with David Durfee, Matthew Fahrbach and Yu Gao  
SODA'18

### Learn to Play Maximum Revenue Auction

Joint work with Xiaotie Deng and Keyu Zhu  
IEEE Transactions on Cloud Computing (2017).

**Liquid Welfare Maximization in Auctions with Multiple Items**

Joint work with Pinyan Lu

**SAGT'17****Improved Efficiency Guarantees in Auctions with Budgets**

Joint work with Pinyan Lu

**EC'15**

## Research Experiences

**Visiting Student**

CFCS, Peking University

Host: Prof. Xiaotie Deng

Topic: Learn to play maximum revenue auction. Secretary problem with patience.

2019/4-present

Beijing, China

**Visiting Student**

ITCS, Shanghai University of Finance and Economics

Host: Prof. Pinyan Lu

Topic: Understanding the power and limit of simple mechanisms.

2018/10-2019/3

Shanghai, China

**Visiting Scholar**

McGill University

Host: Prof. Yang Cai

Topic: Complexity of mechanism design. Simple mechanism with budget.

2017/10-2018/10

Montreal, QC, Canada

**Visiting Student**

ITCS, Shanghai University of Finance and Economics

Host: Prof. Pinyan Lu

Topic: Revenue gaps among simple mechanisms.

2016/06-2017/10

Shanghai, China

**Research Intern**

Microsoft Research Asia

Mentor: Dr. Pinyan Lu

Topic: Welfare maximization in auctions with budgets.

2014/01-2014/04

Shanghai, China

**Research Intern**

HP Labs China

Mentor: Dr. Zhiyong Shen

Topic: Network latency estimation and prediction.

2012/07-2013/02

Beijing, China

## Teaching Assistants

Project Workshop of Database Design

Spring 2013

Game Theory and Mechanism Design *by Jing Chen*

Summer 2013

Automata Theory *by John Hopcroft*

Winter 2014

Approximation Algorithms *by Ning Chen*

Summer 2014

Probability and Computing *by Yitong Yin*

Summer 2015

Spatial and Temporal Data Analysis *by Yu Zheng*

Summer 2015

Algorithms and Complexity <i>by Dominik Scheder</i>	Fall 2015
Algorithms and Complexity <i>by Dominik Scheder</i>	Fall 2016
Computer Science Theory in the Information Age <i>by John Hopcroft</i>	Winter 2016

## Talks

<b>Welfare Maximization in Auctions with Budgets.</b> Bellairs Workshop on Algorithmic Game Theory	Apr 10 2018 Barbados
<b>Welfare Maximization in Auctions with Budgets.</b> Theory lunch at McGill University	Nov 9 2018 Montreal, QC, Canada
<b>Welfare Maximization in Auctions with Budgets.</b> China Theory Week 2017	Jul 19 2017 Shanghai, China
<b>Improved Efficiency Guarantees in Auctions with Budgets.</b> Conference talk at ACM conference on Economics and Computation 2015	Jun 18 2015 Portland, OR, USA
<b>Improved Efficiency Guarantees in Auctions with Budgets.</b> CICGTA 2014	Dec 12 2014 Shanghai, China

## Honors and Awards

<i>Silver Medal</i> in Chinese Mathematical Olympiad	2009/01
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## Activities

China Theory Week 2015. Serving as main contact to organize this event.	2015/08 Shanghai, China
CICGTA 2014 Serving as volunteer in this event.	2014/12 Shanghai, China