Keyu Zhu

CONTACT INFORMATION

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RESEARCH INTERESTS

Algorithmic game theory, network science, mechanism design, machine learning, combinatorial optimization, operations research

EDUCATION

Shanghai Jiao Tong University, Shanghai, China   **September, 2014 - present**

B.S., Mathematics and Applied Mathematics (Zhiyuan Honors Program)
- Cumulative GPA: 90.6 / 100, Major GPA: 90.8 / 100, Ranking: 1 / 18

Technical University of Munich, Munich, Germany   **October, 2017 - March, 2018**

Exchange student.

University of California, Los Angeles, Los Angeles, USA   **July - September, 2017**

2017 Cross-disciplinary Scholars in Science and Technology Summer Program.

Hertford College, University of Oxford, Oxford, UK   **August, 2015**

Exchange student.

PUBLICATION

(Alphabetically) Xiaotie Deng, Tao Xiao, **Keyu Zhu**. Learn to Play Maximum Revenue Auction. Accepted by *the IEEE Transactions on Cloud Computing (TCC)*.

(Alphabetically) Xiaotie Deng, **Keyu Zhu**. On Bayesian Epistemology of Myerson Auction. Accepted by *the Twelfth International Frontiers of Algorithmics Workshop (FAW 2018)*.

CONFERENCE PRESENTATIONS

Xiaotie Deng, Tao Xiao, **Keyu Zhu**. Learning the Maximum Revenue Auction.
the Twelfth Conference on Web and Internet Economics (WINE 2016).

ACADEMIC EXPERIENCE

Shanghai Jiao Tong University, Shanghai, China

Research Assistant   **May, 2016 - present**

- Conducted research on Myerson's optimal auction by challenging one of its crucial assumptions that agents' prior distributions are common knowledge.
- Proved that agents have no incentive to deviate from their true prior distributions when their priors are restricted to the class of power-law distributions.
- Advisor: Professor Xiaotie Deng

Teaching Assistant   **September - December, 2016**

Taught the graduate course, Game Theoretical Methodology and Technique for Internet Protocols. Assisted the professor in preparing lectures and grading exams and assignments.
- Instructor: Professor Xiaotie Deng

Technical University of Munich, Munich, Germany

Research Assistant   **October, 2017 - March, 2018**

- Working on undergraduate thesis about approximating the Myerson's optimal auction with simple mechanisms such as posted-price mechanism and dealing with the revenue gap among these mechanisms.

- Advisor: Professor Andreas S. Schulz, Supervisor: Dr. Yiannis Giannakopoulos

University of California, Los Angeles, Los Angeles, USA

Research Assistant   **July - September, 2017**

- Built up a bounded confidence model on networks with a negotiation mechanism of opinion dynamics, explaining a ubiquitous social phenomenon that people are only willing to interact with those who are similar to themselves.
- Conducted both theoretical and numerical analysis of its stable state(s) and convergence time from the initial state to the stable one(s). Interpreted the model by using a game-theoretical method.

- Advisor: Professor Mason A. Porter

HONORS AND AWARDS

National Scholarship   **October, 2017**

- Highest honor for undergraduates in China, awarded to top 1% students.

Academic Excellence Scholarship (First Class)   **November, 2016**

- For top 5% of undergraduate students at Shanghai Jiao Tong University.

Zeyuan Scholarship   **October, 2016**

- Donated by Mr. Zhiyong Lu for outstanding students in Zhiyuan Honors Program.

KoGuan Encouragement Scholarship   **October, 2015**

- Donated by Leo KoGuan Foundation for outstanding students in Zhiyuan Honors Program.

Contemporary Undergraduate Mathematical Contest in Modeling   **October, 2015**

- Second prize, Ranking: 1,768 / 25,558 ($\approx 6.9\%$).

Bronze Medal in National Olympics in Biology   **December, 2013**

SELECTED COURSEWORK

Regular courses on campus:
Fourier Analysis and Real Analysis, Probability, Abstract Algebra, Differential Geometry, Partial Differential Equations, Mathematical Programming, Stochastic Process, Functional Analysis, Numerical Methods for Ordinary and Partial Differential Equations.
Online courses on Coursera$^{\text{TM}}$ (with certificates):
Game Theory & Game Theory II: Advanced Applications
(Instructors: Kevin Leyton-Brown, Matthew O. Jackson, Yoav Shoham)

SKILLS

- Languages: C++, Julia, Mathematica, Matlab, Python.
- Applications: LaTeX, Beamer, Microsoft PowerPoint
- Operating Systems: macOS, Windows.

LANGUAGE PROFICIENCY

- Chinese: native proficiency
- English: professional working proficiency

- TOEFL iBT Test: reading (27) listening (29) speaking (22) writing (28)

Miscellaneous
- Participant in Workshop on Mean Field Games at IPAM, UCLA.
- Translator in Global Translator Community of Coursera$^{\text{TM}}$
- Member of 2014 summer camp at Shanghai Yacht Club with primary certificate of sailing
- Invited speaker of Annual Academic Seminar of the Mount Everest Plan organized by the Ministry of Education of the P.R.C
- Invited speaker of Workshop on Time Management at Shanghai Jiao Tong University
- Deputy director in charge of design at Student Union of Zhiyuan College