Juntao WANG

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Research Interests

Game Theory Applications, Market Competition, Multi-agent Systems, Mechanism Design

Education

Shanghai Jiao Tong University, Shanghai, China *Sept. 2015 - Mar. 2017(expected)*
M.S. in Computer Science, supervised by Prof. Xiaotie Deng, GPA: 3.7/4.0

Shanghai Jiao Tong University, Shanghai, China *Sept. 2010 - June 2014*
B.S. in Computer Science (with honors), GPA: Core 93.5/100(1/130) Overall 89.6/100(3/130)

Publications

[1] **J. T. Wang**, X. Xiao, J. P. Wang, et al, "**When Group-buying Meets Cloud Computing**", in *IEEE Conference on Computer Communication (INFOCOM)*, 2016.

[2] X. T. Deng, J. P. Wang, **J. T. Wang**, et al, "**How to Design a Common Telecom Infrastructure by Competitors Individually Rational and Collectively Optimal**", in *IEEE Conference on Computer Communication (INFOCOM) workshops*, 2015.

[3] Z. Z. Zhe, **J. T. Wang**, F. Wu, et al, "**SAIL: A Strategy-Proof Auction Mechanism for Cooperative Communication**", in *IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, 2013.

[4] X. T. Deng, J. P. Wang, **J. T. Wang**, et al, "**How to Design a Common Telecom Infrastructure by Competitors Individually Rational and Collectively Optimal**", in *IEEE Journal on Selected Areas, special issue on game theory on networks*, submitted.

[5] W. Qi, **J. T. Wang**, D. H. Yi, et al, "**A Game-theoretic Solution to Mitigate Cross-VM Covert Channels in Clouds**", in *IEEE Transaction on Cloud Computing*, submitted.

[6] Patent: PCT/CN2016/085713, **Mitigation of Cross-VM Covert Channel**, 14 Jun 2016, submitted.

Research Experience

Joint Venture Pricing and Sharing Schemes for Telecom Oligopoly
Research Assistant in Shanghai Jiao Tong University *Apr. 2014 - Aug. 2014 & June 2016 - Present*

- Explored the sharing and pricing schemes of a telecom infrastructure joint venture to manipulate the pricing strategy of rational downstream operators, which also share the joint venture, to achieve social optimality or budget balance.
- Discovered potential prisoners' dilemma laying in this new business practice and revealed how it could be overcome by pooling each agent's resource together and then renting these resources back to the same pool of agents.

A Game-theoretic Solution to Mitigate Cross-VM Covert Channels in Clouds
Research Assistant in City University of Hong Kong *Aug. 2015 - May. 2016*

- Reduced the real-time covert channel attack and defense game to a one-shot bi-matrix game and improved 60% of the defense efficiency with reduced system overhead.

Group-buying Strategies and Equilibriums in Cloud Market
Research Assistant in City University of Hong Kong *Apr. 2015 - Sept. 2015*

- Conducted a comprehensive survey of cooperative game stability concept and algorithms to compute them.
- Proposed a new stability concept the complements the original ones and refined the algorithm used in a number of cooperative game setting to improve the stability of the game outcome.
- Applied the above progress to group-buying problem in cloud market and achieved 0.85 approximate ratio to the intractable optimal solution experimentally.

Strategy-Proof Auction Mechanisms for Cooperative Communication
Research Assistant in City University of Hong Kong *Apr. 2015 - Sept. 2015*

- Extended the single-mind auction mechanism to multi-mind uniform valuation auction and solved out the cooperative relay problem.

Teaching Experience

Graduate Course - Big Data Algorithms and Analysis
Teaching Assistant in Shanghai Jiao Tong University, Lecture: Prof. Xiaotie Deng *Sept. 2016 - Present*

- Assist students in learning linear median algorithm, shortest path in big graphs, fast cover hall algorithms, incomputability of Kolmogorov complexity, etc.

Graduate Course - Internet Economics and Mechanism Design
Teaching Assistant in Shanghai Jiao Tong University, Lecture: Prof. Xiaotie Deng *Sept. 2016 - Present*

- Mastered market equilibrium and envy-free solutions in position auctions, VCG, GSP, Myerson auction mechanism, stable marriage algorithms, etc.

Undergraduate Course - Computability Theory
Teaching Assistant in Shanghai Jiao Tong University, Lecture: Prof. Xiaotie Deng *Sept. 2016 - Present*

- Mastered Church-Turing thesis, halting problem, and Cantors diagonalization method.

Selected Awards

National Scholarship of China, *Top 4/110* *2016*
Google Scholarship China, *Top 5/330* *2015*
Excellent Graduate Award, Shanghai Jiao Tong University *2014*
Google Scholarship China, *Top 2/130* *2013*
The First Prize, National Olympiad in Informatics in Provinces *2009*

Knowledge & Skills

Knowledge on: Multi-armed bandit problems, computability, deep learning, reinforcement learning
Skills: C/C++, Matlab, Java, python, Mathematica, LaTeX