ZHENZHE ZHENG

+1-217-607-4827 ⋄ zhenzhe@illinois.edu ⋄ Homepage

University of Illinois at Urbana-Champaign, Coordinated Science Laboratory (CSL)

1308 W Main St, Urbana, IL 61801, USA

EDUCATION

University of Illinois at Urbana-Champaign   Mar. 2018 - Present
Post Doctoral in Electrical and Computer Engineering
Advisor: Prof. R. Srikant
Research Topic: Game Theory and Large-scale Optimization for Sharing Economy

Shanghai Jiao Tong University   Mar. 2015 - Mar. 2018
Ph.D. in Computer Science
Co-Advisors: Prof. Guihai Chen and Prof. Fan Wu
Thesis: Game Models and Mechanism Design for Mobile Internet

University of Illinois at Urbana-Champaign   Sep. 2016 - Mar. 2018
Visiting Scholar in Electrical and Computer Engineering
Advisor: Prof. R. Srikant
Research Topic: Dynamic Pricing for Cloud Bandwidth Markets

Shanghai Jiao Tong University   Sep. 2012 - Mar. 2015
M.S. in Computer Science
Advisor: Prof. Fan Wu
Thesis: Game Theory based Resource Management in Non-Cooperative Wireless Networks

Xidian University   Sep. 2008 - June 2012
B.E. in Software Engineering
Advisor: Prof. Junzhao Du

RESEARCH INTERESTS

Algorithmic Network Economics, e.g., Algorithmic Game Theory and Economic Incentive.

Networking and Mobile Computing, e.g., Resource Management and Mobile Crowdsourcing.

Online Marketplaces, e.g., Sharing Economy and Data Pricing.

PUBLICATIONS

* indicates the student mentored by me.
Journal Papers

J1. **Zhenzhe Zheng**, Yanqing Peng*, Fan Wu, Shaojie Tang, and Guihai Chen, "ARETE: On Designing Joint Online Pricing and Reward Sharing Mechanisms for Mobile Data Markets", to appear in *IEEE Transactions on Mobile Computing* (**TMC**), 2019, DOI: 10.1109/TMC.2019.2900243.

J2. **Zhenzhe Zheng**, Yanqing Peng*, Fan Wu, Shaojie Tang, and Guihai Chen, "Trading Data in the Crowd: Profit-Driven Data Acquisition for Mobile Crowdsensing", *IEEE Journal on Selected Areas in Communications* (**JSAC**). Volume 35, Issue 2, Pages 486 - 501, Feb. 2017.

J3. **Zhenzhe Zheng**, Fan Wu, Xiaofeng Gao, Hongzi Zhu, Shaojie Tang, and Guihai Chen, "A Budget Feasible Incentive Mechanism for Weighted Coverage Maximization in Mobile Crowdsensing", *IEEE Transactions on Mobile Computing* (**TMC**). Volume 16, Issue 9, Pages 2392 - 2407, Sep. 2017.

J4. **Zhenzhe Zheng**, Fan Wu, Shaojie Tang, and Guihai Chen, "AEGIS: An Unknown Combinatorial Auction Mechanism Framework for Heterogeneous Spectrum Redistribution in Non-Cooperative Wireless Networks", *IEEE/ACM Transactions on Networking* (**TON**), Volume 24, Number 3, Pages 1919-1932, June 2016.

J5. **Zhenzhe Zheng**, Fan Wu, and Guihai Chen, "A Strategy-Proof Combinatorial Heterogeneous Channel Auction Framework in Noncooperative Wireless Networks", *IEEE Transactions on Mobile Computing* (**TMC**), Volume 14, Number 6, Pages 1123-1137, June 2015.

J6. **Zhenzhe Zheng**, Yang Gui, Fan Wu, and Guihai Chen, "STAR: Strategy-Proof Double Auctions for Multi-Cloud, Multi-Tenant Bandwidth Reservation", *IEEE Transactions on Computers* (**TC**), Volume 64, Number 7, Pages 2071 - 2083, July 2015.

J7. Chaoyue Niu, **Zhenzhe Zheng**, Fan Wu, Xiaofeng Gao, and Guihai Chen, "Achieving Data Truthfulness and Privacy Preservation in Data Markets", *Transactions on Knowledge and Data Engineering* (**TKDE**), Volume 31, Number 1, Pages 105 - 119, Jan. 2019.

J8. Chaoyue Niu*, Minping Zhou*, **Zhenzhe Zheng**, Fan Wu, and Guihai Chen, "ERA: Towards Privacy Preservation and Verifiability for Online Ad Exchanges", *Journal of Network and Computer Applications. (JNCA)*, Volume 98, Number 15, Pages 1-10, Nov. 2017.

J9. Chaoyue Niu, **Zhenzhe Zheng**, Fan Wu, Shaojie Tang, Xiaofeng Gao and Guihai Chen, "ERATO: Trading Noisy Aggregate Statistics over Private Correlated Data", under a Minor Revision in *Transactions on Knowledge and Data Engineering* (**TKDE**).

J10. 吴帆, **郑臻哲**. 基于博弈论的频谱动态管理研究, 计算机研究与发展 [J], 53(1):38-52, 2016.

J11. **郑臻哲**, 吴帆, 陈贵海. 大数据交易市场构建, 中国计算机学会通讯 [J], 2019 年第 1 期.

J12. **郑臻哲**, 吴帆, 陈贵海. 多维度防策略性云带宽预留拍卖机制设计, 计算机学报 [J], 2019 年第四期.

Conference Papers

C1. **Zhenzhe Zheng** and R. Srikant: "Optimal Search Segmentation Mechanisms for Online Platform Markets", submitted to the (ACM **SIGMETRICS** 2019).

C2. **Zhenzhe Zheng**, Weichao Mao*, Fan Wu, and Guihai Chen "Challenges and Opportunities in IoT Data Markets", in the *4th International Workshop on Social Sensing* (IEEE **SocialSense** 2019), Montreal, Canada, Apr. 15, 2019. (Invited Paper).

C3. **Zhenzhe Zheng**, R. Srikant, and Guihai Chen: "Pricing for Revenue Maximization in Inter-DataCenter Networks", in Proceedings of the *37th IEEE International Conference on Computer Communications* (IEEE **INFOCOM** 2018), Honolulu, HI, USA, Apr. 16-19, 2018.

C4. **Zhenzhe Zheng**, Yanqing Peng*, Fan Wu, Shaojie Tang, and Guihai Chen, "An Online Pricing Mechanism for Mobile Crowdsensing Data Markets", in Proceedings of the *18th ACM International Symposium on Mobile Ad Hoc Networking and Computing* (ACM **MobiHoc** 2017), Madras, Chennai, India, Jul. 10-13, 2017.

C5. **Zhenzhe Zheng**, Zhaoxiong Yang*, Fan Wu, and Guihai Chen, "Mechanism Design for Mobile Crowdsensing with Execution Uncertainty", in Proceedings of the *37th IEEE International Conference on Distributed Computing* (IEEE **ICDCS** 2017), Atlanta, GA, USA, June 5-8, 2017.

C6. Shengzhong Liu†, **Zhenzhe Zheng**†, Fan Wu, Shaojie Tang, and Guihai Chen: "Context-Aware Data Quality Estimation in Mobile Crowdsensing", in Proceedings of the *36th IEEE International Conference on Computer Communications* (IEEE **INFOCOM 2017**), Atlanta, GA, USA, May 1-4, 2017. (†: Co-Primary Authors).

C7. **Zhenzhe Zheng**, Fan Wu, Shaojie Tang, and Guihai Chen, "Unknown Combinatorial Auction Mechanisms for Heterogeneous Spectrum Redistribution", in Proceedings of the *15th ACM International*

Symposium on Mobile Ad Hoc Networking and Computing (ACM **MobiHoc** 2014), Philadelphia, PA, USA, Aug. 11-14, 2014.

C8. **Zhenzhe Zheng**, Fan Wu, and Guihai Chen: "SMASHER: Strategy-Proof Combinatorial Auction Mechanisms for Heterogeneous Channel Redistribution", in Proceedings of the *14th ACM International Symposium on Mobile Ad Hoc Networking and Computing* (ACM **MobiHoc 2013**) short paper, Bangalore, Indian, Jul. 29 - Aug. 1, 2013.

C9. **Zhenzhe Zheng**, Juntao Wang*, Fan Wu, and Guihai Chen, "SAIL: A Strategy-Proof Combinatorial Auction Mechanism for Cooperative Communication", in Proceedings of the *19th IEEE International Conference on Parallel and Distributed Systems* (IEEE **ICPADS 2013**), Seoul, Korea, Dec. 15-18, 2013.

C10. Weichao Mao*, **Zhenzhe Zheng**, and Fan Wu, "Pricing for Revenue Maximization in IoT Data Markets: An Information Design Perspective", in Proceedings of the *38th Annual IEEE International Conference on Computer Communications* (IEEE **INFOCOM** 2019), Paris, France, Apr. 29 - May 2, 2019.

C11. Chaoyue Niu, **Zhenzhe Zheng**, Shaojie Tang, Xiaofeng Gao, and Fan Wu, "Making Big Money from Small Sensors: Trading Time-Series Data under Pufferfish Privacy", in Proceedings of the *38th Annual IEEE International Conference on Computer Communications* (IEEE **INFOCOM** 2019), Paris, France, Apr. 29 - May 2, 2019.

C12. Chaoyue Niu, **Zhenzhe Zheng**, Fan Wu, Shaojie Tang, Xiaofeng Gao, and Guihai Chen, "Unlocking the Value of Privacy: Trading Aggregate Statistics over Private Correlated Data", in Proceedings of the *23rd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (ACM **SIGKDD** 2018), London, UK, Aug. 19-23, 2018.

C13. Weichao Mao*, **Zhenzhe Zheng**, Fan Wu, and Guihai Chen, "Online Pricing for Revenue Maximization with Unknown Time Discounting Valuations". in Proceedings of the *27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence* (**IJCAI-ECAI** 2018), Stockholm, July 13-19, 2018.

C14. Zun Li*, **Zhenzhe Zheng**, Fan Wu, and Guihai Chen, "On Designing Optimal Data Purchasing Strategies for Online Ad Auctions". in Proceedings of the *2018 International Conference on Autonomous Agents & Multiagent Systems* (**AAMAS** 2018), Stockholm, July 11-13, 2018.

C15. Shuo Yang, Kunyang Han, **Zhenzhe Zheng**, Shaojie Tang, and Fan Wu: "Towards Personalized Task Matching in Mobile Crowdsensing via Fine-Grained User Profiling", in Proceedings of the *37th IEEE International Conference on Computer Communications* (IEEE **INFOCOM** 2018), Honolulu, HI, USA, Apr 16-19, 2018.

C16. Chaoyue Niu*, **Zhenzhe Zheng**, Fan Wu, Xiaofeng Gao, and Guihai Chen, "Trading Data in Good Faith: Integrating Truthfulness and Privacy Preservation in Data Markets", in Proceedings of the *33rd IEEE International Conference on Data Engineering*, (IEEE **ICDE**), short paper, San Diego, California, USA, April 19-22, 2017.

C17. Xiao Ma*, **Zhenzhe Zheng**, Fan Wu, and Guihai Chen, "Trust-Based Time Series Data Model for Mobile Crowdsensing", in Proceedings of the *2017 IEEE International Conference on Communications* (IEEE **ICC**, 2017), Paris, France, May 21-25, 2017.

C18. Yangsu Liu*, **Zhenzhe Zheng**, Fan Wu, and Guihai Chen, "Fault Tolerant Mechanism Design for Time Coverage in Crowdsensing System", in Proceedings of the *36th IEEE International Performance Computing and Communications Conference* (**IPCCC 2017**), San Diego, California, USA, Dec. 10-12, 2017.

C19. Xiang Wang*, **Zhenzhe Zheng**, Fan Wu, Xiaoju Dong, Shaojie Tang, and Guihai Chen, "Strategy-Proof Data Auctions with Negative Externalities (Extended Abstract)". in Proceedings of the *2016*

International Conference on Autonomous Agents & Multiagent Systems (**AAMAS** 2016), Singapore, May 9-13, 2016.

C20. Yuanyuan Li, Linghe Kong, Fan Wu, **Zhenzhe Zheng**, and Guihai Chen, "MAPM: Movement-based Adaptive Prediction Mechanism for Energy Conservation in Body Sensor Networks", in Proceedings of the *2016 IEEE Global Communications Conference* (IEEE **GLOBECOM**, 2016), Washington, DC USA, Dec. 4-8, 2016.

C21. Minping Zhou*, Chaoyue Niu*, **Zhenzhe Zheng**, Fan Wu, and Guihai Chen, "An Efficient, Privacy-Preserving, and Verifiable Online Auction Mechanism for Ad Exchanges", in Proceedings of the *2015 IEEE Global Communications Conference* (IEEE **GLOBECOM**, 2015), San Diego, CA, USA, Dec. 6-10, 2015.

C22. Fan Wu, Junming Liu*, **Zhenzhe Zheng**, and Guihai Chen, "Online Incentive Mechanisms with discounting bids". in Proceedings of the *28th AAAI Conference on Artificial Intelligence* (**AAAI** 2014), Quebec City, Canada, July 27-31, 2014.

C23. Yang Gui, **Zhenzhe Zheng**, Fan Wu, and Guihai Chen, "SOAR: Strategy-Proof Auction Mechanisms for Distributed Cloud Bandwidth Reservation", in Proceedings of the *14th IEEE International Conference on Communication Systems* (IEEE **ICCS**, 2014), Macau, Nov. 19 - 21, 2014. **Best Student Paper Award**.

HONORS AND AWARDS

China Computer Federation (CCF) Excellent Doctoral Dissertation Award (**5** total recipients in China) (CCF 优秀博士学位论文)	Dec. 2018
ACM China Doctoral Dissertation Award Nominee (ACM 中国优秀博士学位论文提名)	Nov. 2018
Excellent PhD Dissertation of SJTU (**15** total recipients in SJTU) (上海交通大学优秀博士学位论文)	Mar. 2019
Ten Academic Stars in SJTU (上海交通大学首届学术之星)	Oct. 2016
Microsoft Research Asia Ph.D. Fellowship (**13** total recipients)	Sep. 2015
Google Ph.D. Fellowship (**44** global recipients, **8** in East Asia)	Aug. 2015
Baidu Ph.D. Scholarship Nominee	Oct. 2015
SJTU Oversea Post Doc Program (上海交通大学海外师资博士后计划)	Oct. 2017
SJTU SEIEE Scholarship for Excellent Doctoral Dissertation (上海交通大学电子信息与电气工程学院优秀博士论文培育基金)	Oct. 2016
National Scholarship	2017, 2014, 2011
Tang Lixin Scholarship	Aug. 2017
Excellent Graduate of Shanghai	Mar. 2015
Best Student Paper Award, IEEE ICCS	Nov. 2014
The **first** place TAC Ad Exchange (AdX) competition hosted by Trading Agent Research	May 2014
Student Travel Grant for IEEE ICPADS	Dec. 2013
China Aerospace Science Industry Corporation (CASIC) Scholarship	2012 - 2013
2011 International Mathematical Contest in Modeling (MCM), Honorable Mention	Apr. 2011
The 35th ACM/ICPC Asia Regional Hangzhou site, Bronze Prize	Oct. 2010

PROFESSIONAL ACTIVITIES

Program Committee Member

- The 4th ACM/IEEE International Conference on Internet-of-Things Design and Implementation (Posters and Demos) (IoTDI 2019)
- The 5th International Conference on Big Data Computing and Communications, (BigCom 2019)
- The 3rd International Conference on Big Data Computing and Communications, (BigCom 2017)

Conference Reviewer

- The 20th International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'19)
- The 38th IEEE Conference on Computer Communications (INFOCOM'19)
- IEEE/ACM International Symposium on Quality of Service (IWQoS'19)
- The Association for Computing Machinery's Special Interest Group on Measurement and Evaluation 2018, (SIGMETRICS'18)
- The 19th International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'18)
- The 37th IEEE Conference on Computer Communications (INFOCOM'18)
- The 16th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt'18)
- FIP working group WG7.3 on performance modeling and analysis (IFIP Performance'17)
- The 36th IEEE International Conference on Distributed Computing Systems (ICDCS'16)
- The 24th IEEE International Conference on Network Protocols (ICNP'16)
- The 36th IEEE International Conference on Distributed Computing Systems (ICDCS'16)
- The 35th IEEE Conference on Computer Communications (INFOCOM'16)
- The 34th IEEE Conference on Computer Communications (INFOCOM'15)
- The 33rd IEEE Conference on Computer Communications (INFOCOM'14)
- The 23rd International Conference on Computer Communications and Networks (ICCN 2014)
- The International Conference on Computing, Networking and Communications (ICNC 2013)

Journal Reviewer

- INFORMS Operation Research (OR)
- IEEE Transactions on Networking (TON)
- IEEE Journal on Selected Areas in Communications (JSAC)
- IEEE Transactions on Parallel and Distributed Systems (TPDS)
- IEEE Transactions on Mobile Computing (TMC)
- IEEE Transactions on Wireless Communications (TWC)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Vehicular Technology (TVT)
- IEEE Transactions on Cognitive Communications and Networking
- IEEE Access
- IEEE Network Magazine
- Springer Peer-to-Peer Networking and Applications