

# WEN SHEN

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## Research Interests

Mechanism Design, Multi-Agent Systems, Human-Machine Interaction, Machine Learning, Network Analysis

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## Education

**University of California, Irvine**

**Irvine, CA, USA**

*Ph.D in Information and Computer Science*

*May 2019 (expected)*

- Dissertation: Beyond Nash Equilibrium: Mechanism Design with Thresholding Agents.
- Advisor: Cristina V. Lopes

**Masdar Institute of Science and Technology**

**Abu Dhabi, UAE**

*M.S. in Computing and Information Science*

*June 2013*

- Thesis: *Regulating Self-Adaptive Multi-Agent Systems with Real-Time Interventions.*
- Advisor: Jacob W. Crandall

**Northwestern Polytechnical University**

**Xi'an, China**

*B.E. in Software Engineering (with distinction)*

*July 2009*

- Thesis: *A Spam Filtering System using Naïve Bayes.*
- Advisors: Yi Lin, and Wei Zheng

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## Professional Experience

**University of California, Irvine**

**Irvine, CA, USA**

*Research Assistant*

*2014 - Present*

- Project A: *Mechanism Design for Online Platforms* (Papers: 1, 2, 3, 5, 7).
- Project B: *An Aspect-Oriented Approach to Large-Scale Urban Simulations* (Papers: 4, 7, 8).

**Masdar Institute of Science and Technology**

**Abu Dhabi, UAE**

*Research Engineer*

*2013 - 2014*

- Project: *Monitoring and Predictive Maintenance of Buildings and Building Systems* (Papers: 11-15).

**Masdar Institute of Science and Technology**

**Abu Dhabi, UAE**

*Research Assistant*

*2011 - 2013*

- Project A: *Trade-offs in Regulating Highly Automated Machine Ecologies* (Papers: 6, 18).
- Project B: *Energy Time Series Forecasting* (Paper: 9).

**Shenzhen Comtop Information Technology Co. Ltd.**

**Shenzhen, China**

*Software Engineer*

*2009-2010*

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## Working Papers

1. [W. Shen](#), A. Rohan, C.V. Lopes: *A Simulation Analysis of Large Contests with Thresholding Agents.*
2. [W. Shen](#), K. Yan, C.V. Lopes: *Manipulation-Resistant Mechanism Design for Strategic Network Diffusion.*
3. [W. Shen](#), C.V. Lopes: *Countering Free Riding in Utility Sharing with Sequential Contests.*

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## Refereed Conference Papers

(In CS, conferences are the primary venues for scientific publications. Google Scholar: <https://goo.gl/qaXQQR>)

4. [W. Shen](#), Y. Feng, C. V. Lopes: *Multi-Winner Contests for Strategic Diffusion in Social Networks.* In Proc. of the 33rd AAAI Conf. on Artificial Intelligence (**AAAI 2019**).
5. [W. Shen](#), R. Achar, C. V. Lopes: *Toward Understanding the Impact of User Participation in Autonomous Ridesharing Systems.* In Proc. of the 2018 Winter Simulation Conference (**WSC 2018**).
6. [W. Shen](#), J.W. Crandall, K. Yan, C.V. Lopes: *Information Design in Crowdfunding under Thresholding Policies.* In Proc. of the 17th Intl. Conf. on Autonomous Agents and Multi-Agent Systems (**AAMAS 2018**).
7. [W. Shen](#), A. A. Khemiri, A. Almhrezi, W.A. Enezi, I. Rahwan, J.W. Crandall: *Regulating Highly Automated Robot Ecologies: Insights from Three User Studies.* In Proc. of Intl. Conf. on Human-Agent Interaction (**HAI 2017**). **Winner of Best Student Paper Award.** Selected Media: *Heise online.*

8. W. Shen, C.V. Lopes, J.W. Crandall: *An Online Mechanism for Ridesharing in Autonomous Mobility-on-Demand Systems*. In Proc. of the 25th Intl. Joint Conf. on Artificial Intelligence (**IJCAI 2016**).
9. W. Shen, C. V. Lopes: *Managing Autonomous Mobility on Demand Systems for Better Passenger Experience*. In Proc. of the 18th Conf. on Principles and Practice of Multi-Agent Systems (**PRIMA 2015**).
10. W. Shen, V. Babushkin, Z. Aung, W.L. Woon: *An Ensemble Model for Day-ahead Electricity Demand Time Series Forecasting*. In Proc. of ACM Intl. Conf. on Future Energy Systems (**ACM e-Energy 2013**).

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## Refereed Journal Articles

11. K. Yan, W. Shen, H. Lu and Q. Jin: *Emerging Privacy Issues and Solutions in Cyber-Enabled Sharing Services: From Multiple Perspectives*. **IEEE Access**, 2019.
12. K. Yan, L. Ma, Y Dai, W. Shen, Z. Ji: *Cost-sensitive and Sequential Feature Selection for Chiller Fault Detection and Diagnosis*. **International Journal of Refrigeration**, Vol. 86 (2018), pp. 401-409.
13. K. Yan, Z. Ji, H. Lu, J. Huang, W. Shen, Y. Xue: *Fast and Accurate Classification of Time Series Data using Extended ELM: Application in Fault Diagnosis of Air Handling Units*. **IEEE Transactions on Systems, Man and Cybernetics: Systems**, Vol. PP (2017), Issue 99, pp. 1-8.
14. K. Yan, Z. Ji, W. Shen: *Online Fault Detection Methods for Chillers Combining Extended Kalman Filter and Recursive One-class SVM*. **Neurocomputing**, Vol.228 (2017), pp. 205-212.
15. T. Mulumba, A. Afshari, K. Yan, W. Shen, L. K. Norford: *Robust Model-based Fault Diagnosis for Air Handling Units*. **Energy and Buildings**, Vol.86(2015), pp. 698-707.
16. K. Yan, W. Shen, T. Mulumba, A. Afshari: *ARX Model Based Fault Detection and Diagnosis for Chillers using Support Vector Machines*. **Energy and Buildings**, vol.81(2014), pp. 287-295.
17. W. Zheng, W. Shen, Y. Zhang: *Implementing Spam Filter by Improving Naïve Bayesian Algorithm*. **Journal of Northwestern Polytechnical University**, vol.28, no.4, pp. 622-627, 2010.

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## Technical Reports

18. B. Quadros, R. Kadam, D. Lavaniya, M. Mukhtar, K., Saxena, W. Shen, A. Kobsa: *Dashbell: A Low-cost Smart Doorbell System for Home Use*. (**PerCom WiP 2016**, accepted ).
19. W. Shen: *Regulating Self-Adaptive Multi-Agent Systems with Real-Time Interventions*. Master Thesis, Masdar Institute of Science and Technology, June 2013.

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## Honors and Awards

Student Travel Grant, Bren School of ICS, University of California, Irvine	2019
Student Travel Award, International Conference on Autonomous Agents and Multiagent Systems	2018
Best Student Paper Award, International Conference on Human-Agent Interaction	2017
Chair's Award, Department of Informatics, University of California, Irvine	2014
Student Travel Grant (US\$2,500), Masdar Institute of Science and Technology	2013
Outstanding Bachelor Thesis Award, Northwestern Polytechnical University	2009
National Endeavor Scholarship, Ministry of Education of China	2008
Academic Excellence Scholarship, Northwestern Polytechnical University	2006-2008

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## Teaching

Mentor, Pratik Shetty (M.S. at UCI, Now a software engineer at Microsoft), 2018  
 Reader, ICS45J - Programming In Java, Spring 2018, Fall 2018, Winter 2018  
 Assistant, INF295 - Distributed Interactive Simulation, Spring 2016  
 Reader, INF124 - Internet Applications Engineering, Spring 2015  
 Reader, INF225/CS221 - Information Retrieval, Winter 2015  
 Reader, INF43 - Introduction to Software Engineering, Fall 2014

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## Academic Service

**Conference Reviewer:** The Annual ACM/IEEE International Conference on Human Robot Interaction 2016-2019; International Conference on Human-Agent Interaction 2017; The CHI Conference on Human Factors in Computing Systems 2017.

**Journal Reviewer:** World Wide Web (WWW) 2019; Journal of Urban Technology 2018; IEEE Access 2018; Applied Thermal Engineering 2018; Transportation Science 2017; IEEE Transactions on Systems, Man, and Cybernetics: Systems 2017; International Journal of Electrical Power & Energy Systems 2013.

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## References

**Cristina V. Lopes**, Professor of Informatics, University of California, Irvine, Email: lopes@ics.uci.edu  
**Jacob W. Crandall**, Assoc. Professor of Computer Science, Brigham Young University, Email: crandall@cs.byu.edu  
**Ke Yan**, Assoc. Professor of Information Engineering, China Jiliang University, Email: yanke@cjlu.edu.cn