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Assistant Professor
Industrial Engineering & Management Systems,
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EDUCATION

- Ph.D. in Operations Research, Department of Industrial & Systems Engineering, University of Florida, Gainesville, FL, USA, August 2010.
Dissertation Topic: “Stochastic Integer Optimization and Applications in Energy Systems.”
Advisor: Dr. Panos M. Pardalos
- M.S. in Operations Research, Department of Industrial and Systems Engineering, University of Florida, Gainesville, FL, USA, August 2008.
- M.S. in Automation, Department of Automation, Tsinghua University, Beijing, P.R. China, July 2005.
- B.S. in Automation, Department of Automation, North China University of Technology, Beijing, P.R. China, July 2001.

ACADEMIC APPOINTMENTS

- Assistant Professor, Aug, 2013 – present
Department of Industrial Engineering & Management Systems,
University of Central Florida, Orlando, FL, USA
- Assistant Professor, Aug. 2010 – Aug. 2013
Department of Industrial & Management Systems Engineering,
West Virginia University, Morgantown, WV, USA
- Graduate Research Assistant, Aug. 2005 – Aug. 2010
Department of Industrial and Systems Engineering,
University of Florida, Gainesville, FL, USA
- Graduate Research Assistant, Aug. 2002 – Jul. 2005
Department of Automation,
Tsinghua University, Beijing, China

RESEARCH INTERESTS

Stochastic Programming, Integer Programming, Network Optimization, Global Optimization, Optimization in Energy and Environments, Operations Research in Healthcare, Transportation Planning, Supply Chain Management, Logistics, Dynamic Traffic Assignment.

PUBLICATIONS

“★” denotes my students.

Journal Articles

- Y. Huang★, Q. P. Zheng, N. Fan and K. Aminian. Optimal Scheduling for Enhanced Coal Bed Methane Production through CO₂ Injection. *Applied Energy*, Volume 113, pp. 1475-1483, January 2014.
- Y. Huang★, S. Rebennack and Q. P. Zheng. Techno-Economic Analysis and Optimization Models for Carbon Capture and Storage - A Survey. *Energy Systems*, Volume 4, Number 4, pp. 315-353, December 2013.
- Q. P. Zheng, J. Wang, P. M. Pardalos and Y. Guan. A Decomposition Approach to Two-Stage Stochastic Unit Commitment. *Annals of Operations Research*, Volume 210, Issue 1, pp. 387-410, November 2013.
- N. Fan, Q. P. Zheng and P. M. Pardalos. Robust optimization of graph partitioning involving interval uncertainty. *Theoretical Computer Science*, Volume 447, pp. 53-61, August, 2012.
- Q. P. Zheng and A. Arulselvan. Discrete Time Dynamic Traffic Assignment Models and Solution Algorithm for Managed Lanes. *Journal of Global Optimization*, Volume 51, Number 1, pp. 47-68, 2011.
- T. Zhang, Y. Zhang, Q. P. Zheng and P. M. Pardalos. A hybrid Particle Swarm Optimization and Tabu Search Algorithm for Order Planning Problems of Steel Factory based on the Make-To-Stock and Make-To-Order Management. *Journal of Industrial and Management Optimization*, Volume 7, Number 1, pp. 31-51, 2011.
- Q. P. Zheng and P. M. Pardalos. Stochastic and Risk Management Models and Solution Algorithm for Gas Transmission Network Expansion and LNG Terminal Location Planning. *Journal of Optimization Theory and Applications*, Volume 147, Number 2, pp. 337-357, 2010.
- B. Li, X. Li, W. Liu and Q. Zheng. Dynamic maintenance service management based on exception perception. *Journal of Computer Integrated Manufacturing Systems*, Vol.12, No.08, 1006-5911(2006)08-1308-05, 2006. (In Chinese with an English Abstract)
- Q. Zheng, W. Liu, X. Li and B. Li. “Application of Support Vector Machine in Bank Customer Classification”. *Journal of Control & Automation*. 2005 (33) 68-70, 2005. (In Chinese with an English Abstract)

Book Chapters

- N. Fan, Q. P. Zheng and P. M. Pardalos. On the two-stage stochastic graph partitioning. In *Combinatorial Optimization and Applications* (edited by Weifan Wang, Xuding Zhu and Ding-Zhu Du), COCOA 2011, Lecture Notes in Computer Science, Volume 6831, pp. 500-509, 2011.
- P. M. Pardalos, Q. P. Zheng and A. Arulselvan. Deterministic Global Optimization. *Wiley Encyclopedia of Operations Research and Management Science* (edited by James J. Cochran), Volume 2, John Wiley & Sons, pp. 1388-1407, 2011.
- Q. P. Zheng, Y. Lou and P. M. Pardalos. Economics of Gambling on Sports: A Multistage Stochastic Programming Approach to American Jai Alai Gambling Strategies. In *Optimal Strategies in Sports Economics and Management*, Sergiy Butenko, Jaime Gil-Lafuente and Panos M. Pardalos (Eds.), pp. 199-215, 2010.
- Q. P. Zheng, S. Rebennack, N. A. Iliadis and P. M. Pardalos. Optimization Models in Natural Gas

Industry. Chapter 6 in *Handbook of Power Systems I*, Steffen Rebennack, Panos M. Pardalos, Mario V.F. Pereira and Niko A. Iliadis (Eds.), Energy Systems, Springer, pp. 121-148, 2010.

Conference Proceedings

- J. R. Davis, Q. P. Zheng, V. A. Paramygin, B. Tutak, C. Vogiatzis, Y. P. Sheng, P. M. Pardalos, and R. J. Figueiredo. Development of a Multimodal Transportation Educational Virtual Appliance (MTEVA) to study congestion during extreme tropical events. *Proceedings of the Transportation Research Board (TRB) 91st Annual Meeting*, Paper No. 12-1119, Washington, D. C., January, 2012.
- W. Liu, Q. Zheng, X. Li and B. Li. “Application of Support Vector Machine in Customer Relationship Management”. *Proceedings of the Symposium on Global Manufacturing & Simulation Technology of the 21st Century*. Paper No. 7-5062-6822-1 (2004)-B165, Oct. 2004. (In Chinese)

Book Edited

- *Handbook of CO₂ in Power Systems*.
Q. P. Zheng, S. Rebennack, P. M. Pardalos, N. A. Iliadis, and M. V. F. Pereira (Eds.)
ISBN 978-3-642-27430-5, Springer, May, 2012.

Other Publications

- “Co-optimization of Transmission and other Supply Resources.” Report prepared for Eastern Interconnection States Planning Council (EISPC) and National Association of Regulatory Utility Commissioners (NARUC), funded by Department of Energy (DoE), Pages 1-213, September 2013. (with A. L. Liu, B. H. Hobbs, J. Ho, J. D. McCalley, V. Krishnan, M. Shahidepour)
http://www.naruc.org/Grants/Documents/Co-optimization-White-paper_Final_rv1.pdf

WORKS IN PROGRESS

- Minimum Cost Flow Problems with Value-at-Risk and Conditional Value-at-Risk Flow Losses under Topological Uncertainty. *In Revision*.
http://www.optimization-online.org/DB_HTML/2012/05/3487.html
- An Equilibrium Model for Energy Consumption Scheduling in Smart Grid with Consumers Preference. *In Revision*.
- Two-Stage Stochastic Security-Constrained Unit Commitment Models Including Energy Storage and Demand Response with Risk Control. *In Revision*.
- Co-optimization of Multi-Level Inventory Matching and Order Planning for Steel Plants via Particle Swarm Optimization. *In Revision*.
- Solving Enhanced Coal Bed Methane Production Planning Problems using Discretization and Linearization Techniques. *Submitted*.
- Expansion Planning Models for Combined Electrical and Natural Gas Systems. *To be submitted*.
- Reliable Routing under independent random arc failures and decomposition algorithm with scenarios reduction. *To be submitted*.
- Evacuation Planning via Discrete Dynamic Traffic Assignment with Lane Reversals. *Finished, to be*

submitted.

- Gas Contract Optimization for Power Plants by Solving Multi-Stage Stochastic Mixed Integer Programming Problems. *In preparation.*
- Discrete-Time Dynamic User Equilibrium and Bounded Rational User Equilibrium. *In preparation.*
- Chance-Constrained Stochastic Unit Commitment via Benders Decomposition Based on Reformulation-Linearization-Technique. *In preparation.*

BOOKS IN PROGRESS

- Electrical Power Unit Commitment: Models and Algorithms, Springer (with Panos M. Pardalos), *In preparation.*

FUNDED RESEARCH PROJECTS

- PI: **Q. P. Zheng.**
“Collaborative Research: The Next-Generation Electricity Capacity and Transmission Expansion Model with Large-Scale Energy Storage and Renewable Resources.”
Sponsor: National Science Foundation, CMMI-1234094.
Budget: \$172,655.
Duration: 08/2012 - 07/2015.
- PI: S. Solanki; co-PIs: **Q. P. Zheng**, J. Solanki, D. Martinelli.
“Grid Challenges for a Smart Transit System.”
Sponsor: National Science Foundation, ECCS-1232168.
Budget: \$322,501.
Duration: 08/2012 - 07/2015.
- PI: A. L. Liu (Purdue University); co-PIs: B. F. Hobbs (John Hopkins University), J. McCalley (Iowa State University), M. Shahidehpour (Illinois Institute of Technology), P. T. Sullivan (NREL) and **Q. P. Zheng.**
“Whitepaper: Co-Optimization of Transmission and other Supply Resources.”
Sponsor: Department of Energy (Sub-contracted through National Association of Regulatory Utility Commissioners).
Budget: \$150,000.
Duration: 02/2013 - 9/2013.
- PI: **Q. P. Zheng.**
“Robust Minimum Cost Flows via Risk Measures.”
Sponsor: NASA WV Space Grant Consortium.
Budget: \$26,139.
Duration: 08/2011 - 07/2012.

HONORS AND AWARDS

- IIE New Faculty Colloquium participant, May, 2011.
- [Best Presentation Award](#), CMS Annual Student Conference, March, 5, 2010.
- INFORMS, Future Academician Colloquium participant, Nov, 2009.

- Academic Excellence Scholarships, NCUT, China, 1997-2001.
- Honor Prize of Physics Thesis, NCUT, China, 1998.

CONFERENCE AND INVITED PRESENTATIONS AS THE SPEAKER

- “Multistage Stochastic Models for Natural Gas Contract and Maintenance Scheduling of Power Plants,” INFORMS Annual Meeting, Minneapolis, MN, October, 2013.
- “Reliable routing under independent random arc failures and decomposition algorithm with scenarios reduction,” INFORMS Annual Meeting, Phoenix, AZ, October, 2012.
- “Minimum Cost Flow Problems with Value-at-Risk and Conditional Value-at-Risk Flow Losses under Topological Uncertainty,” Air Force Research Lab/UF REEF Seminar, Shalimar, FL, July, 2012.
- “Multi-Level Inventory Matching and Order Planning for Steel Plants via Particle Swarm Optimization,” IIE ISERC Annual Conference, Orlando, FL, May, 2012.
- “Compare Spinning Reserves and Risk Management Models for Stochastic Network-based Security Constrained Unit Commitment”, IIE ISERC Annual Conference, Orlando, FL, May, 2012.
- “Reliable Routing under independent random arc failures”, 4th International Conference on the Dynamics of Information Systems, Gainesville, FL, February, 2012.
- “Transmission and Generation Capacity Expansion with Unit Commitment – A Multiscale Stochastic Model”, INFORMS Annual Meeting, Charlotte, NC, November, 2011.
- “Stochastic Security Constrained Unit Commitment with Chance Constraints”, IIE IERC Annual Conference, Reno, NV, May, 2011.
- “Stochastic Security-Constrained Unit Commitment Models and Solution Algorithm”, Department of Integrated Systems Engineering, Ohio State University, Columbus, OH, January, 2011.
- “Stochastic Security-Constrained Unit Commitment Models and Solution Algorithm”, INFORMS Annual Meeting, Austin, TX, November, 2010.
- “Advancing Scheduling Models for Real-Time Disaster Evacuation”, Center for Multimodal Solutions and Congestion Mitigation, Annual Student Conference, Gainesville, March, 2010. ([Best Presentation Award](#))
- “Risk Management Models and Solution Algorithm for Gas Transmission Network Expansion and LNG Terminal Location Planning”, INFORMS Optimization Society, Conference on Energy, Sustainability and Climate Change, Gainesville, February, 2010.
- “Risk Management Models of Natural Gas Contracts Portfolio Optimization for Gas Power Plants.” INFORMS Annual Meeting, San Diego, October, 2009.
- “Natural Gas Transportation Network Expansion and LNG Terminal Location Planning Models.” INFORMS Annual Meeting, San Diego, October, 2009.
- “The Order Planning Method of Steel Factory Based on the MTO-MTS Management Architecture.” INFORMS Annual Meeting, San Diego, October, 2009.
- “Gas Contract Optimization by Solving Multi-Stage Stochastic Mixed Integer Programming Problems.” Power Systems Modeling 09, Gainesville, March 2009.
- “Dynamic Network Equilibrium and Bounded Rational Equilibrium.” INFORMS Annual Meeting,

Washington DC, October 2008.

- “Discrete-Time Dynamic Traffic Assignment Model for Managed Lanes.” CMS Annual Student Conference, University of Florida, Gainesville, FL, March 2008.
- “Discrete-Time Dynamic Traffic Assignment Model for Managed Lanes.” INFORMS Annual Meeting, Seattle, WA, November 2007.

CONFERENCE AND INVITED PRESENTATIONS AS A CONTRIBUTING AUTHOR

- “An Equilibrium Model for Distributed Energy Consumption Scheduling in Smart Grid,” INFORMS Annual Meeting, Minneapolis, MN, October, 2013.
- “Generation and Transmission Maintenance Scheduling Considering Renewable Energy,” INFORMS Annual Meeting, Minneapolis, MN, October, 2013.
- “Optimal Physician Traveling Assignment for Improving Care Access in an Outpatient Care Network,” INFORMS Annual Meeting, Minneapolis, MN, October, 2013.
- “Regulation Energy Management in Renewable Integration Market with Non-Generation Resources,” INFORMS Annual Meeting, Minneapolis, MN, October, 2013.
- “Stochastic Security-Constrained Unit Commitment Models Including Energy Storage and Demand Response with Risk Control,” INFORMS Annual Meeting, Phoenix AZ, October, 2012.
- “Utilizing Multi-Attribute Utility Functions and Simulation to Model Load Leveling in Smart Grid,” INFORMS Annual Meeting, Phoenix AZ, October, 2012.
- “A Method for Two-Stage Stochastic Programming with Mixed 0-1 Integer Second Stage”, IIE ISERC Annual Conference, Orlando, FL, May, 2012.
- “Expansion Planning for Combined Electricity and Natural Gas Systems”, INFORMS Annual Meeting, Charlotte NC, November, 2011.
- “Optimal Scheduling for Enhanced Coal Bed Methane Production Through CO₂ Injection,” IERC Annual Conference, Reno, NV, May, 2011.
- “Decomposition Methods for Solving the Two-stage Stochastic Graph Partitioning Problem,” INFORMS Annual Meeting, Austin TX, November, 2010.

TEACHING EXPERIENCE

“G” denotes a graduate course.

- Instructor, ESI5306, Operations Research^G, Fall 2013
- Instructor, IENG593G, Nonlinear Programming^G, Spring 2012
- Instructor, IENG350, Introduction to Operations Research, Fall 2010, Spring 2011, Fall 2011 and Fall 2012
- Instructor, IENG446, Facility Planning and Material Handling, Spring 2013
- Instructor, ESI4567, Numerical and Matrix Analysis, Summer 2009 and Fall 2009
- Instructor, EIN4354, Engineering Economy, Spring 2009 (169 students)
- Teaching Assistant, EIN4354 Engineering Economy, Fall 2008

- Teaching Assistant, CGI2421 Computer Programming C++, Summer 2008
- Teaching Assistant, ESI6942 Introduction to Nonlinear Optimization[□], Spring 2007
- Teaching Assistant, EIN4343 Inventory and Supply Chain System, Spring 2006
- Teaching Assistant, EIN4221 Industrial Quality Control, Fall 2005

INDUSTRIAL EXPERIENCE

- Feb.2002– Sep.2002, System Design and Software Engineer in Sino-Electronic Future Telecommunication Company Ltd, Beijing, P.R. China.

I was responsible for the software design of the power-on initialization, phone status settings, and SMS (Short Message Service) modules using C and C++ language.

PROFESSIONAL ACTIVITIES

- Associate Editor and Editorial Board Member of
 - *Energy Systems*, Springer. (2010-present)
- Associate Editor for
 - *SAGE Open*, SAGE. (2012)
- Paper Referee for
 - *Annals of Operations Research*, Springer;
 - *Applied Energy*, Elsevier;
 - *Computers and Industrial Engineering*, Elsevier;
 - *Energy Policy*, Elsevier;
 - *Energy Systems*, Springer;
 - *Environmental Modeling and Assessment*, Springer;
 - *European Journal of Operational Research*, Elsevier;
 - *IIE Transactions*, Taylor & Francis;
 - *IEEE Transactions on Power Systems*, IEEE;
 - *International Journal of Energy Sector Management*, Emerald;
 - *International Journal of Operational Research*, InderScience;
 - *Journal of Combinatorial Optimization*, Springer;
 - *Journal of Global Optimization*, Springer;
 - *Journal of Industrial and Management Optimization*, American Institute of Mathematical Sciences;
 - *Journal of Optimization Theory and Applications*, Springer;
 - *Journal of Systems Science and Systems Engineering*, Springer;
 - *Journal of Transportation Safety & Security*, Taylor & Francis;
 - *Mathematical Methods of Operations Research*, Springer;
 - *Networks*, Wiley;
 - *Networks and Spatial Economics*, Springer;
 - *Optimization and Engineering*, Springer;

- *Optimization Letters*, Springer;
- *Several books, etc.*
- Session Chair of
 - Smart Grid Integration and Analysis in the New Electrical Era, INFORMS Annual Meeting, Minneapolis, MN, Oct, 2013.
 - New Models and Algorithms for Power Grid Transmission, INFORMS Annual Meeting, Phoenix, AZ, Oct, 2012.
 - Energy System Planning with Smart Grid Challenges, IIE Annual Conference and Expo, ISERC Annual Conference, May, 2012.
 - Integrated Production Planning and Inventory Control, IIE Annual Conference and Expo, ISERC Annual Conference, May, 2012.
 - Long-Term Power Systems Planning with New Features of Smart Grids, INFORMS Annual Meeting, Charlotte, NC, Nov, 2011.
 - Scheduling Problems in Various Areas, IIE 61st Annual conference and Expo, IERC Annual Conference, May, 2011.
 - Power System Planning, IIE 61st Annual conference and Expo, IERC Annual Conference, May, 2011.
 - Conference on Systems and Optimization Aspects of Smart Grid Challenges, Gainesville, FL, April, 2011.
 - Risk Management and Stochastic Programming in Natural Gas and Power Systems, INFORMS Annual Meeting, Austin, TX, 2010.
- Conference Co-organizer of
 - Local Organizing Committee member and Session Chair for the Conference on Energy, Sustainability and Climate Change, INFORMS Optimization Society, Gainesville, FL, 2010,
 - Local Organizing Committee member for the Conference of Power Systems Modeling, Gainesville, FL, 2009.
- Academic Society Member of
 - Mathematical Optimization Society (MOS, formerly MPS),
 - INFORMS,
 - IIE,
 - IEEE, Power and Energy Society,
 - International Society of Global Optimization,

STUDENTS

Current PhD Students

- Yi (Vivian) Fang (at WVU), started in August 2008, and expects to graduate in July 2014.
- Yuping Huang (at UCF), started in August 2011, and expects to graduate in December 2014.
- Zhouchun (Joe) Huang (at UCF), started in May 2013, and expects to graduate in August 2016.
- Yiduo Zhan (at UCF), started in December 2013, and expects to graduate in August 2016.

Current Master Students with Thesis

- Daniel Simmons (at WVU), started in August 2009, and expects to graduate in August 2014.

- Yixin (Justin) Du (at WVU), started in August 2012, and expects to graduate in July 2014.

Graduated Master Students with Thesis

- Yeh Ern Poh (M.S. WVU), graduated in August 2013.
Thesis title: “Discrete Time Dynamic Traffic Assignment Models with Lane Reversals for Evacuation Planning.”
Job placement: industrial engineer at SanDisk, Texas.
- Yuping Huang (M.S. WVU), graduated in August 2011.
Thesis title: “Optimal Scheduling for Enhanced Coal Bed Methane Production through CO2 Injection.”
Now: Pursuing PhD in IEMS at UCF.