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Assistant Professor
Industrial and Systems Engineering
Davidson College of Engineering
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RESEARCH INTERESTS:

Optimization and Modeling
Expert system and Artificial Intelligence
Data Analytics in Supply Chain Management
Scheduling, Dispatch and Pricing problems in Power Systems Management

EDUCATION BACKGROUND:

UNIVERSITY OF WASHINGTON, Seattle, WA, USA
Ph.D., Industrial & Systems Engineering, 2010

SAN JOSÉ STATE UNIVERSITY, San José, CA, USA
M.S., Industrial & Systems Engineering, 2004

HEBEI SCIENCE & TECHNOLOGY UNIVERSITY, Hebei, CHINA
B.S., Chemical Engineering, 1998

PROFESSIONAL BACKGROUND:

ASSITANT PROFESSOR, Industrial and Systems Engineering, San Jose State University, San Jose, USA (08/2017 - Present)

OPERATIONS RESEARCH CONSULTANT, Peritus Inc., TX, USA (09/2015 – 12/2017)

SYSTEMS ENGINEER – Power Market Operations, Alstom Grid, San Jose, CA/Redmond, WA, USA (04/2010 - 08/2015)

SOFTWARE ENGINEER INTERN, AREVA T&D, Redmond, WA, USA (06/2009 - 12/2009, 01/2008 - 03/2008, 06/2007 - 09/2007)

GRANT EXPERIENCE:

- **PI** of Test/Research Market Clearing Systems for ISO New England, 2019. Awarded \$55,264
- **PI** of Test/Research Market Clearing Systems for ISO New England, 2018. Awarded \$54,670

- **Co-PI** of Strengthening ISE Graduate Curriculum in “Supply Chain Analytics” (College of Engineering, SJSU), 2018. Awarded \$20,000.

HONORS & AWARDS:

UW Graduate School Distinguished Dissertation Award Nominee, 2010
 INFORMS Future Academician representative for University of Washington, 2007
 Alpha Pi Mu - IE Honor Society Member, since 2006
 Tao Beta Pi - The Engineering Honor Society Member, since 2003

PUBLICATIONS (Peer Reviewed):

- H. Alshayji* & **H. Liu**, “Rule-based Smart Contract Design in Supply Chain”. Proceedings of the Institute of Industrial and Systems Engineers (IISE), Orlando, FL, May 2019
- A. Aluko* & **H. Liu**, “A Comparative Study of Traditional Forecasting Methodologies vs. Machine Learning Algorithms”. Proceedings of the Institute of Industrial and Systems Engineers (IISE), Orlando, FL, May 2019
- Song, H., Zheng, T., **Liu, H.** and Zhang, H., “Modeling MW-Dependent Ramp Rate in Electricity Market,” Proceedings of the IEEE Power Energy Society (PES), Washington, DC., July 2014.
- **Liu, H.**, Zabinsky, Z. B., and Kohn, W., “Rule-based Forecasting and Production Control System Design Utilizing a Feedback Control Architecture,” IIE Transactions, Vol. 43, Issue. 2, Feb. 2011.
- **Liu, H.**, Zabinsky, Z. B., and Kohn, W., Rule-based Control System Design for Smart Grids, Proceedings of the IEEE Power Energy Society (PES), Minneapolis, MN, July 2010.
- **Liu, H.**, Shen, Y., Zabinsky, Z. B., Liu, C. C., Alan, C. and Joo, S.K., “Social Welfare Maximization in Transmission Enhancement Considering Network Congestion,” IEEE Trans. on Power Systems, Vol. 23, No. 3, August 2008.
- Tsao, J and **Liu, H.**, “Optimal Sequencing of Test Conditions in 2k Factorial Experimental Design for Run-Size Minimization,” Computers and Industrial Engineering, Volume 55, Issue 2, September 2008.

Note: *Student Author

CONFERENCES & PRESENTATIONS :

“Designing a Deceptive Comment Detection Platform with a Rule Based Artificial Intelligent Algorithm” INFORMS Annual Conference, Seattle, WA, October 2019.

“Rule-based Smart Contract Design in Supply Chain,” Institute of Industrial and Systems Engineers Annual Conference, Orlando, Florida, May 2019

“A Comparative Study of Traditional Forecasting Methodologies vs. Machine Learning Algorithms,” Institute of Industrial and Systems Engineers Annual Conference, Orlando, Florida, May 2019

“A Creative Computing Approach to Film-story Creation,” IEEE International Conference on Creative Lifestyle Computing, Dalian, China, September 2018

“Practical Mathematical Methods for Political Redistricting,” INFORMS International, Taipei, Taiwan, June 2018

“Smart Dispatch in the Electricity Market,” Department of Industrial and Systems Engineering, University of Washington, Seattle, WA, January 2013.

“Optimization of Enterprise Dynamical Systems Described by Rules,” NSF CMMI Grantees Conference, Atlanta, GA, Jan 2011.

“Application of Rule-based System Design in Supply Chain,” Nankai University, Tianjin, P.R. China, December 2011.

“Rule-based Control System Design for Smart Grids,” Proceedings of the IEEE Power Energy Society (PES), Minneapolis, MN, July 2010.

“Optimization of Dynamic Rule-based Systems,” 20th International Symposium on Mathematical Programming (ISMP), Chicago, IL, August 2009.

“Rule-based Supply Chain Forecasting and Control,” INFORMS Annual Conference, Seattle, WA, July 2007.

PAPER UNDER REVIEW OR IN-PROGRESS

- **H. Liu**, S. A. Erdogan, R. Lin, H. J. Tsao, “Practical Mathematical Methods for Political Redistricting and Competitive and Fair Elections”. **Submitted** to Computers and Industrial Engineering (**second round**), July 2019
- H. Liu, **H. Liu**, H. Yang, Y. Yu “A Creative Computing Approach to Film-story Creation: From Theory to Practice”. **Submitted** to International Journal of Automation and Computing, July 2019
- **H. Liu**, M. N. Patel, “A Logic-based Inventory Management System Design for Perishable Products”. In Progress.
- A. Toplu*, **H. Liu**, “Designing a Deceptive Comment Detection Platform with a Rule Based Artificial Intelligent Algorithm”. In Progress.
- J. Huang*, **H. Liu**, “Online Grocery Delivery of Perishable Produces”. In Progress.

Note: *Student Author

PROFESSIONAL ORGANIZATIONS:

Member of Institute of Electrical and Electronics Engineers (IEEE)

Member of IEEE Power & Energy Society (PES)

Member of INFORMS

INVITED REVIEWS:

IIE Transactions

IET Science, Measurement & Technology

Electrical Engineering

Computers & Industrial Engineering
Communications in Statistics – Theory and Methods

SKILLS:

C#, Matlab, Python, R, Access, Oracle/SQL, Maple, Minitab, SPSS, Visio, GAMS, LINGO,
CPLEX/GUROBI/XPRESSMP, AIMMS