Dr. Yue Wang

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Yue Wang is the Director of the Intelligent and Interdisciplinary Research (I2R) laboratory in the Mechanical Engineering Department at Clemson University. Dr. Wang joined the Department in 2012. She received a Ph.D. degree in Mechanical Engineering from Worcester Polytechnic Institute in 2011 and held a postdoctoral position in Electrical Engineering at University of Notre Dame from 2011 to 2012.

Dr. Wang's research interests are in cooperative control and decision-making for human-robot collaboration systems, symbolic robot motion planning with a human-in-the-loop, cyber-physical systems, and multi-robot systems. Her work has resulted in over 50 journal publications, peer-reviewed conference papers and books, which are cited over 600 times (Google scholar) with an h-index of 13. Her research has been supported by NSF, AFOSR, AFRL, ARO, ARC, NASA EPSCoR, and Clemson University. She has received an AFOSR YIP award in 2016, an NSF CAREER award in 2015, the Air Force Summer Faculty Fellowship in 2015 and 2016, and the Clemson University Mechanical Engineering Eastman Chemical Award for Excellence in 2015. Dr. Wang is a senior member of IEEE, and member of ASME and AIAA. She serves as the Chair of the IEEE Control System Society Technical Committee on Manufacturing Automation and Robotic Control and the Chair of the IEEE Vehicular Technology Society Ad Hoc Committee on Autonomous Vehicles. Her work has been featured in NSF Science360, ASEE First Bell and State News, SC EPSCoR/IDeA Research Focus, and Clemson University.

Education

PhD, Mechanical Engineering Department at Worcester Polytechnic Institute in May, 2011
MS, Mechanical Engineering from Worcester Polytechnic Institute in 2008
BS, Mechanical Engineering and Automation from Shanghai University in 2005

Research interests

Cooperative Control, Decision-Making, Motion Planning, Human-Robot Interaction, Cyber-Physical Systems, Multi-Robot Systems, Connected and Automated Vehicles, Advanced Manufacturing.

Selected Publications

S. M. Mizanoor Rahman and **Y. Wang**, "Mutual Trust-Based Subtask Allocation for Human-Robot Collaboration in Flexible Lightweight Assembly in Manufacturing", *Mechatronics*, 2018.

S. Fu, H. Saeidi, J. Huang, **Y. Wang** and J. Wagner, "A Customizable Unmanned Aerial Vehicle (UAV) Haptic Feedback Interface - Theory and Test", *AIAA Journal of Guidance, Control, and Dynamics (JGCD)*, 2018.

Y. Wang, L. Humphrey, Z. Liao, and H. Zheng, "Trust-based Multi-Robot Symbolic Motion Planning with a Human-in-the-Loop", *ACM Transactions on Interactive Intelligent Systems (TiiS)*, 2018. Accepted.

F. Li and **Y. Wang**, "Cooperative Adaptive Cruise Control (CACC) for String Stable Mixed Traffic: Benchmark and Human-Centered Design", *IEEE Transactions on Intelligent Transportation Systems (ITS)*, Special Issue on Applications and Systems for Collaborative Driving, 2017.

B. Sadrfaridpour, and **Y. Wang**, "Collaborative Assembly in Hybrid Manufacturing Cells: An Integrated Framework for Human-Robot Interaction", *IEEE Transactions on Automation Science and Engineering (TASE)*, 2017.

Hamed Saeidi, J. R. Wagner, and **Y. Wang**, "A Mixed-Initiative Haptic Teleoperation Strategy for Mobile Robotic Systems Based on Bidirectional Computational Trust Analysis", *IEEE Transaction on Robotics (T-RO)*, July 2017.

Y. Wang, "Regret-Based Automated Decision-Making Aids for Domain Search Tasks using Human-Agent Collaborative Teams", *IEEE Transactions on Control Systems Technology*, vol. 24, no. 5, pp. 1680 -1695, September 2016.

K. Dey, L. Yan, X. Wang, **Y. Wang**, H. Shen, M. Chowdhury, L. Yu, C. Qiu, V. Soundararaj, "A Review of Communication, Driver Characteristics and Controls Aspects of Cooperative Adaptive Cruise Control (CACC)", *IEEE Transactions on Intelligent Transportation Systems*, vol. 17, no. 2, pp. 491-509, November 2015.

X. Wang, Z. Shi, F. Zhang, and **Y. Wang**, "Dynamic Real-Time Scheduling for Human-Agent Collaboration Systems Based on Mutual Trust", *Cyber-Physical Systems (CPS)*, Taylor & Francis, 2015.

Y. Wang, M. Xia, V. Gupta, and P. J. Antsaklis, "On Feedback Passivity of Discrete-Time Nonlinear Networked Control Systems with Packet Drops", *IEEE Transactions on Automatic Control (TAC)*, vol. 60, no. 9, pp. 2434-2439, December 2014.

Y. Wang, V. Gupta, and P. J. Antsaklis, "On Passivity of a Class of Discrete-Time Switched Nonlinear Systems", *IEEE Transactions on Automatic Control (TAC)*, vol. 59, no. 3, pp. 692-702, March 2014.

P. J. Antsaklis, B. Goodwine, V. Gupta, M. J. McCourt, **Y. Wang**, P. Wu, M. Xia, H. Yu, and F. Zhu, "Control of Cyberphysical Systems using Passivity and Dissipativity Based Methods", *European Journal of Control*, vol. 19, no. 5, pp.379-388, September 2013, (Invited survey article).

Y. Wang and I. I. Hussein. "Multiple Vehicle Bayesian-Based Domain Search with Intermittent Information Sharing", *Asian Journal of Control*, vol. 4, no. 15, pp. 1-10, July 2013 (Invited paper).

Y. Wang, I. I. Hussein, D. R. Brown III, and R. S. Erwin, "Cost-Aware Sequential Bayesian Decision-Making for Search and Classification", *IEEE Transactions on Aerospace and Electronic Systems (TAES)*, vol. 48, no 3, pp. 2566-2581, July 2012.

Y. Wang, I. I. Hussein, and R. S. Erwin, "Risk-based Sensor Management for Integrated Detection and Estimation", *AIAA Journal of Guidance, Control, and Dynamics (JGCD)*, vol. 34, no. 6, November/December 2011.

Y. Wang and I. I. Hussein. "Bayesian-Based Decision-Making for Object Search and Classification", *IEEE Transactions on Control Systems Technology (TCST)*, vol. 19, no. 6, pp. 1639-1647, November 2011.

Y. Wang and I. I. Hussein. "Awareness Coverage Control over Large-Scale Domains with Intermittent Communications", *IEEE Transactions on Automatic Control (TAC)*, vol. 55, no. 8, pp.1850-1859, August 2010.