

August 2021

Event

Rock River Valley Section

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Sense

The Institute of Electrical and Electronic Engineers, Inc.

IEEE RRV Section, CCS Chapter Meeting, Women in Engineering (WIE)  
SERVING IEEE MEMBERS OF NORTH CENTRAL ILLINOIS AND SOUTH CENTRAL WISCONSIN

**WHEN** Thursday, September 09, 2021

**WHERE: WEBEX (See page 2)**

**AGENDA**

7:00 PM Dial in/Networking  
7:15 PM Presentation



**PREDICTION, ESTIMATION, AND CONTROL OF CONNECTED AND AUTONOMOUS VEHICLES**

**Dr. Jing Sun**

Connected and Automated Vehicles (CAV) have been heralded as a transformative technology, leading to the new era of transportation with unprecedented safety and mobility benefits. They also push the energy efficiency of the transportation systems at both the macro (traffic flow) and micro (vehicle) levels to the next height with abundant new opportunities for communication and optimization. We will discuss some fundamental technical challenges for prediction, estimation, and control at the core of the CAV technology in this talk. Using the integrated power and thermal management for CAV as an example, we will show how model-based design, complemented by data-driven approaches, can lead to control and optimization solutions with a significant impact on energy efficiency and operational reliability, in addition to safety and accessibility. Several unique problem characteristics, such as multi-timescale, the highly interactive nature of subsystems involved, and the dynamic and uncertain environment that CAVs are operating within will be illuminated, and open challenges will be highlighted.

Biography on next page.  
Webex information on next page.

Please register online at  
<https://events.vtools.ieee.org/m/281232>

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## **Biography:**

**Jing Sun** received her Ph. D degree from the University of Southern California in 1989 and her master's and bachelor degrees from the University of Science and Technology of China in 1984 and 1982. From 1989-1993, she was an assistant professor in the Electrical and Computer Engineering Department at Wayne State University. She joined Ford Research Laboratory in 1993, where she worked on advanced powertrain system controls. After spending almost ten years in the industry, she came back to academia in 2003 and joined the University of Michigan, where she is the Michael G. Parsons Collegiate Professor and the chair in the Naval Architecture and Marine Engineering Department. She holds joint appointments in the Electrical Engineering and Computer Science Department and Mechanical Engineering Department at the same university. She holds 41 US patents and has published over 250 archived journal and conference papers. She is a Fellow of NAI (the National Academy of Inventors), IEEE, IFAC, and SNAME (the Society of Naval Architecture and Marine Engineering). She is one of the three recipients of the 2003 IEEE Control System Technology Award.

## **Webex Information:**

Link: <https://ieeemeetings.webex.com/ieeemeetings/j.php?MTID=m270ce77613b0b603ee1f6a07f8b0394b>

Meeting number: 2539 260 0345

Meeting password: 0909ccs

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