

IEEE IV 2020 Workshop @ Zoom, Oct. 30th

# Internet of Things in Intelligent Transportation Systems: Opportunities and Challenges



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# Internet of Things in Intelligent Transportation Systems: Opportunities and Challenges

Topics: IoT, Digital Twin, Internet of Vehicles, and more

## Organizations:

- **Academia:** Harvard, Vanderbilt, U-Washington, UC-Riverside, U-Iowa, UT-Dallas
- **Industry:** Toyota
- **National Lab:** Oak Ridge

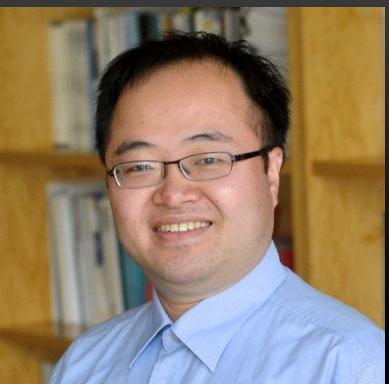
# Goal of this Workshop

**Identify opportunities and challenges of the  
development of IoT in intelligent vehicle/transportation systems**

# Welcome from Workshop Organizers



**Ziran Wang, Ph.D.**  
Research Scientist  
Toyota InfoTech Labs



**Guoyuan Wu, Ph.D.**  
Research Engineer  
UC Riverside



**Lingxi Li, Ph.D.**  
Associate Professor  
Indiana University-Purdue  
University Indianapolis



**Dongpu Cao, Ph.D.**  
Associate Professor  
University of Waterloo



**Li Li, Ph.D.**  
Associate Professor  
Tsinghua University

# Workshop Speakers



**Kanok Boriboonsomsin, Ph.D.**  
Research Engineer  
University of California, Riverside



**Ruimin Ke**  
Ph.D. Candidate  
University of Washington



**Yongkang Liu**  
Ph.D. Candidate  
University of Texas, Dallas



**Jibonananda Sanyal, Ph.D.**  
Group Leader  
Oak Ridge National Lab



**Chris Schwarz, Ph.D.**  
Director, NADS  
University of Iowa



**Prashant Tiwari, Ph.D., MBA**  
Director  
Toyota InfoTech Labs



**Daniel Work, Ph.D.**  
Associate Professor  
Vanderbilt University



**Yang Zheng, Ph.D.**  
Postdoctoral Researcher  
Harvard University

# Workshop Schedule

- 8:00-9:00 am PDT

**Yongkang Liu: Sensor Fusion of Camera and Cloud Digital Twin Information for Intelligent Vehicles**

**Chris Schwarz: Digital Twins: From Macro to Micro**

- 9:00-10:00 am PDT

**Ruimin Ke: Design and Field Implementation of IoT Systems with Real-Time Traffic Video Analytics**

**Yang Zheng: Integrating Autonomy into Traffic Systems: Scalable Control and Optimization**

- 10:00-11:00 am PDT

**Prashant Tiwari: IoT and Smart Connected Vehicles Enabling MaaS Opportunities**

**Daniel Work: Traffic Flow Smoothing at Scale**

- 11:00-noon PDT

**Kanok Boriboonsomsin: Field Implementation of IoV Application for Improving Energy Efficiency of Heavy-Duty Vehicles**

**Jibonananda Sanyal: CTwin-The Chattanooga Mobility Digital Twin: Heralding the Next Generation in Observability & Control**

# Workshop Instructions

- **Mute yourself if you are not presenting**
- **Encourage to ask any questions to a specific speaker or in general**
- **Ask questions in the chat box with the format “(To xx) xxxx”, for example:**
  - *(To Ziran) What is the definition of Digital Twin in your research?*
  - *(To All) What is your vision for the impact of IoT on future vehicles?*
- **Encourage real-time discussion among attendees as well**
- **Follow the websites for future updates (e.g., recordings, slides, CFP, etc.)**
  - <https://iot-in-its.github.io/iv2020>
  - <https://ziranw.github.io/>