

**IEEE ITSC 2020 Workshop @ Zoom, Sep. 20th**

# **Testing and Evaluating Connected and Automated Vehicles Using Emerging Simulation Tools and Technologies**

**Rhodes, Greece**





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# **Testing and Evaluating Connected and Automated Vehicles Using Emerging Simulation Tools and Technologies**

**Topics: SUMO, Vissim, Aimsun, Unity/LGSVL, CARLA,  
human-in-the-loop, hardware-in-the-loop, and more**

## **Organizations:**

- **Industry: Toyota, LG**
- **Academia: UMTRI, TTI, Berkeley, UCR, McMaster**
- **National Labs: Argonne, Oak Ridge**

## **Schedule**

**8-9 am PDT:**  
Shuo, Seyhan, Mingyuan

**9-10 am PDT:**  
David, Guodong, Break

**10-11 am PDT:**  
Dean, Xuanpeng, Pin

**11-noon PDT:**  
Joshua, Hao

# Goal of this Workshop

**Identify emerging simulation tools and technologies that are used to test and evaluate connected and/or automated vehicle technology**

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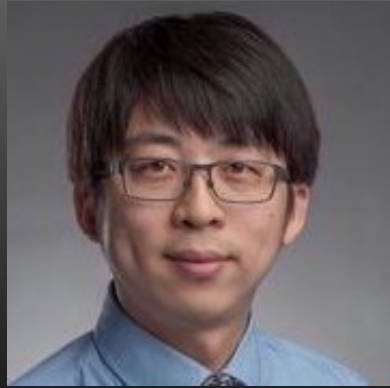
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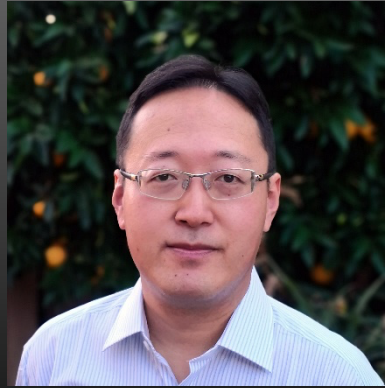
# Welcome from Workshop Organizers



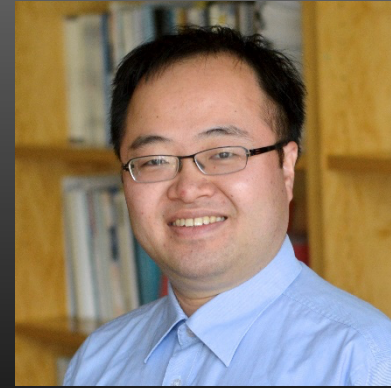
**Ziran Wang, Ph.D.**  
Research Scientist  
Toyota InfoTech Labs



**Jiaqi Ma, Ph.D.**  
Associate Professor  
UCLA



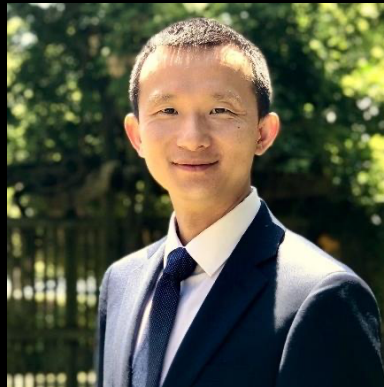
**Guodong Rong, Ph.D.**  
Principal Engineer  
LG Silicon Valley Lab



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



**Yiheng Feng, Ph.D.**  
Assistant Professor  
Purdue University



**Hao Liu, Ph.D.**  
Research Engineer  
UC Berkeley



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

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# Workshop Speakers



**Shuo Feng, Ph.D.**  
Research Fellow  
University of Michigan



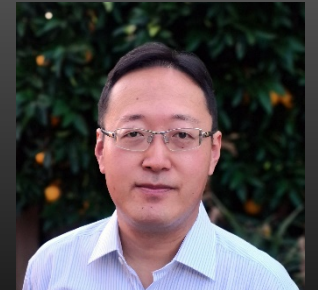
**Seyhan Uçar, Ph.D.**  
Principal Researcher  
Toyota InfoTech Labs



**Mingyuan Yang**  
Ph.D. Student  
UC Berkeley



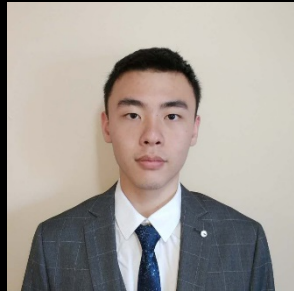
**David Florence**  
Research Engineer  
TTI



**Guodong Rong, Ph.D.**  
Principal Engineer  
LG Silicon Valley Lab



**Dean Deter**  
Principal Engineer  
Oak Ridge National Lab



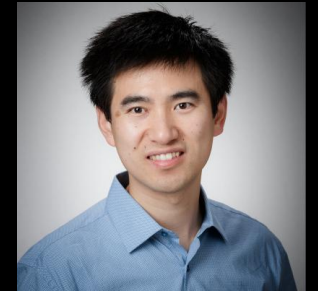
**Xuanpeng Zhao**  
Ph.D. Student  
UC Riverside



**Pin Wang, Ph.D.**  
Researcher  
UC Berkeley



**Joshua Auld, Ph.D.**  
Technical Manager  
Argonne National Lab



**Hao Yang, Ph.D.**  
Assistant Professor  
McMaster University

# Workshop Schedule

- **8:00-9:00 am PDT**

**Shuo Feng: Autonomous Vehicles Safety Assessment Simulation (ASAS) Platform Based on SUMO and CARLA**

**Seyhan Uçar: Cooperative Anomalous Driving Behavior Detection and Management**

**Mingyuan Yang: Quantifying the Environmental Benefits of Capacity Enhancing Traffic Management using Aimsun**

- **9:00-10:00 am PDT**

**David Florence: Traffic Optimization for Signalized Corridors (TOSCo) Development and Evaluation with Vissim**

**Guodong Rong: LGSVL Simulator: A High Fidelity Simulator for Autonomous Driving**

- **10:00-11:00 am PDT**

**Dean Deter: Connected and Automated Vehicles: Major Shifts in Vehicle R&D Methods**

**Xuanpeng Zhao: Modeling and Evaluation of Autonomous Vehicles in Mixed Traffic using an Integrated SUMO-Unity Platform**

**Pin Wang: Learning Adaptable Policy via Meta-Adversarial Inverse Reinforcement Learning for Decision-making Tasks**

- **11:00-noon PDT**

**Joshua Auld: Modeling the Impacts of Future Mobility Technologies with POLARIS SMART Mobility Workflow**

**Hao Yang: Anomaly Behavior Management: Reducing the Impact of anomalous Drivers with Connected Vehicles**



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**Break Session**

**Next talk (Deter) will start at 10:10 am PDT**

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