

IEEE ITSC 2020 Workshop @ Zoom, Sep. 20th

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



Rhodes, Greece

ITSC 2020 Workshop @ Zoom, Sep. 20th

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

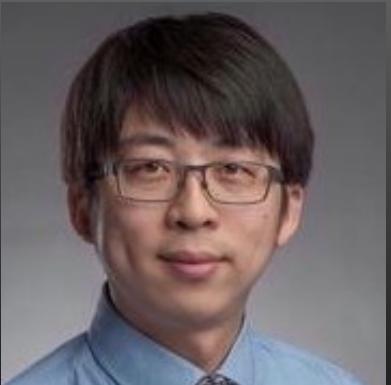
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Welcome from Workshop Organizers



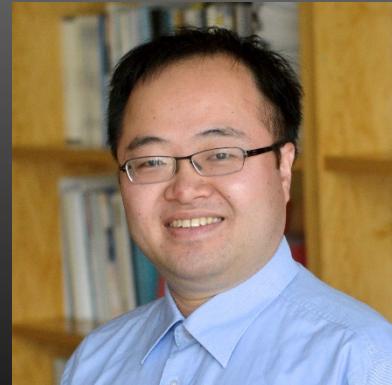
Ziran Wang, Ph.D.
Research Scientist
Toyota InfoTech Labs



Jiaqi Ma, Ph.D.
Associate Professor
UCLA



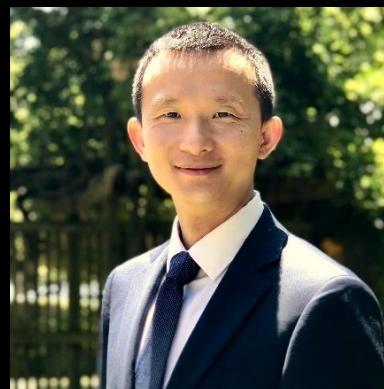
Guodong Rong, Ph.D.
Principal Engineer
LG Silicon Valley Lab



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



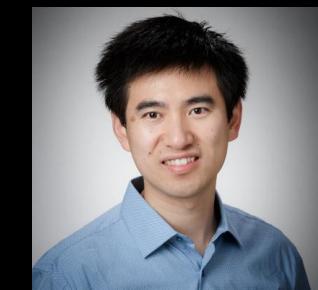
Xuanpeng Zhao
Ph.D. Student
UC Riverside



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

Break Session

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