Ziran Wang

Ph.D. in Mechanical Engineering
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EDUCATION

Ph.D. in Mechanical Engineering Sep. 2015 - Jun. 2019

University of California, Riverside (UCR)

Advisor: Dr. Matthew J. Barth, Professor, Electrical and Computer Engineering

Dissertation: Developing Agent-Based Distributed Cooperative Vehicle-Infrastructure Systems in the Connected and Automated Vehicle Environment

B.E. in Mechanical Engineering and Automation Sep. 2011 - Jun. 2015

Beijing University of Posts and Telecommunications (BUPT)

RESEARCH EXPERIENCE

Research Scientist Jul. 2019 - Present

Toyota Motor North America (TMNA), InfoTech Labs, Mountain View, CA (Supervisor: Dr. Prashant Tiwari)

- Co-lead the "Digital Twin" project, building an AI-based vehicle-to-cloud platform for intelligent vehicles using AWS
- Conduct advanced research with proof-of-concepts, publications, and patents as outcomes
- Collaborate with other TMNA departments, external universities, and third-party companies to develop algorithms and conduct field implementations regarding cooperative/automated driving and driver behavior modeling
- Mentor interns/co-ops in the team by providing research guidance

Graduate Student Researcher Jun. 2016 - Jun. 2019

Transportation Systems Research Lab, Center for Environmental Research and Technology, UCR (Advisor: Dr. Matthew Barth)

- Developed multiple cooperative automated driving systems in vehicle-to-everything (V2X) environment, including vehicle platooning, cooperative adaptive cruise control (CACC), cooperative eco-approach and departure at signalized intersections, cooperative on-ramp merging, and cooperative lane change
- Proposed distributed consensus-based and optimal control-based motion control algorithms for connected and automated vehicles, addressing issues of safety, mobility, and eco-friendly
- Implemented proposed systems in MATLAB/Simulink, PTV VISSIM (microscopic traffic simulator) driver model API (C++-based), SUMO (microscopic traffic simulator) TraCI API (Python-based), Unity (game engine) scripting API (C#-based), Volvo Truck's on-board .NET framework (C#-based), and Autonomie (vehicle system simulator)

Research Intern Jun. 2018 - Sep. 2018

Toyota InfoTechnology Center, Mountain View, CA (Supervisor: Dr. BaekGyu Kim)

- Prototyped cooperative automated driving algorithms using game engine Unity with C# scripting API, allowing them to track trajectory with controlled speed, sense neighboring vehicles and obstacles by on-board sensors, and communicate with each other and infrastructures with V2X communications
- Conducted agent-based modeling and simulation of the proposed cooperative on-ramp merging system, and compared the proposed autonomous system with human-in-the-loop simulations
- Submitted two conference papers and four U.S. patent applications during the 3-month internship

Graduate Student Researcher Nov. 2015 - Jun. 2016

Cooperative Vehicle Networks Lab, Department of Electrical and Computer Engineering, UCR (Advisor: Dr. Wei Ren)

- Implemented distributed consensus algorithm on different information flow topologies by using MATLAB/Simulink
- Researched platoon-based vehicular systems and proposed to apply flocking algorithm to intelligent transportation systems

FUNDED PROJECTS

Evaluating Connected Vehicle Applications in a Mixed Traffic Environment using a "Digital Twin" Approach

Sponsor: Toyota Motor North America, InfoTech Labs

- Proposed a feedforward/feedback motion controller for autonomous vehicles to cooperate at on-ramp merging
- Developed an augmented reality (AR) based head-up display (HUD) for the driver on intelligent vehicles in Unity
- Built neural network to model human factor based on historical driver data
- Developed a Unity/Arduino-car integrated system to realize the Digital Twin concept

Traffic Optimization for Signalized Corridors (TOSCo) Small Scale Test & Evaluation Project

Sponsor: Federal Highway Administration (FHWA), United States Department of Transportation

Partners: Crash Avoidance Metrics Partners (CAMP) LLC Vehicle to Infrastructure Consortium (Ford, General Motors, Hyundai-Kia, Honda, Mazda, Nissan, Subaru, Volvo Truck, and VW/Audi), IAV GmbH, Texas A&M Transportation Institute (TTI), and The University of Michigan Transportation Institute (UMTRI)

- Proposed advanced TOSCo algorithms based on eco-approach and departure and CACC applications
- Compiled C++ code for external driver model API of PTV VISSIM to realize the proposed framework and algorithms

An Innovative Vehicle-Powertrain Eco-Operation System for Efficient Plug-In Hybrid Electric Buses

Sponsor: Advanced Research Projects Agency-Energy (ARPA-E), United States Department of Energy

Partners: Oak Ridge National Laboratory, US Hybrid

- Filtered collected bus data by geofencing methodology using MATLAB and Excel
- Built a hardware-in-the-loop test environment by linking traffic simulation outputs with chassis dyno facility

Connected Eco-Driving for Heavy-Duty Conventional and Plug-In Hybrid Electric Trucks

Sponsor: Volvo Group North America

- Integrated components in the system architecture including map matching, sensor fusion, speed planning and GUI
- Developed an eco-driving motion control algorithm and implement it on Volvo Truck's .NET framework
- Conducted a real-world demonstration of the system on a Volvo truck using cellular-based V2X communication

Development of Eco-Friendly Ramp Control based on Connected and Automated Vehicle Technology

Sponsor: National Center for Sustainable Transportation (NCST), United States Department of Transportation

- Developed a hierarchical ramp merging control strategy to reduce overall freeway congestion
- Proposed an optimal control algorithm to control the movement of connected and automated vehicles
- Evaluated the mobility and environmental impacts of the proposed strategy by PTV VISSIM

PUBLICATIONS

Under Review

[C19]Moving Horizon Estimation of Connected Vehicle Motion under Communication Delay and Packet Loss

- Ziran Wang, Kyungtae Han, and Prashant Tiwari
- *SAE World Congress Experience 2021,* Under Review

[J9]Vision-Cloud Data Fusion for ADAS: A Lane Change Prediction Case Study

- Yongkang Liu, Ziran Wang, Kyungtae Han, Zhenyu Shou, Prashant Tiwari, and John H. L. Hansen
- *IEEE Transactions on Intelligent Vehicles*, Under Review

[J8]Game Theory-Based Ramp Merging for Mixed Traffic with Game-Traffic Integrated Simulation

- Xishun Liao, Xuanpeng Zhao, Ziran Wang, Kyungtae Han, Prashant Tiwari, Matthew J. Barth, and Guoyuan Wu
- *IEEE Transactions on Cybernetics*, Under Review

[J7]Eco-Approach and Departure along Signalized Corridors

- Guoyuan Wu, Peng Hao, Ziran Wang, Yu Jiang, Kanok Boriboonsomsin, Matthew J. Barth, Michael McConnell, Shuwei Qiang, and John Stark
- *SAE International Journal of Sustainable Transportation, Energy, Environment, & Policy*, Under Review

Published Book Chapters

[B1]New Simulation Tools for Training and Testing Automated Vehicles

- Jiaqi Ma, Chris Schwarz, Ziran Wang, Maria Elli, German Ros, and Yiheng Feng
- *Road Vehicles Automation,* vol. 7, pp. 111 – 119, Springer

Published Journal Papers

[J6]Driver Behavior Modeling using Game Engine: A Learning-Based Approach

- Ziran Wang, Xishun Liao, Chao Wang, David Oswald, Guoyuan Wu, Kanok Boriboonsomsin, Matthew J. Barth, Kyungtae Han, BaekGyu Kim, and Prashant Tiwari
- *IEEE Transactions on Intelligent Vehicles*, DOI: 10.1109/TIV.2020.2991948

[J5]Cooperative Eco-Driving along Multiple Signalized Intersections in a Partially Connected and Automated Vehicle Environment

- Ziran Wang, Guoyuan Wu, and Matthew J. Barth
- *IEEE Transactions on Intelligent Transportation Systems*, vol.21, no.5, May 2020, pp. 2029–2038

[J4]A Survey on Cooperative Longitudinal Motion Control of Multiple Connected Automated Vehicles

- Ziran Wang, Yougang Bian, Steven E. Shladover, Guoyuan Wu, Shengbo E. Li, and Matthew J. Barth
- *IEEE Intelligent Transportation Systems Magazine*, vol. 12, no. 1, Spring 2020, pp. 4–25

[J3]Cooperative Ramp Merging System: Agent-Based Modeling and Simulation Using Game Engine (**Best Paper Award**)

- Ziran Wang, Guoyuan Wu, Kanok Boriboonsomsin, Matthew J. Barth, Kyungtae Han, BaekGyu Kim, and Prashant Tiwari
- *SAE International Journal of Connected and Automated Vehicles*, vol.2, no.2, May 2019, pp. 115–128

[J2]Cluster-Wise Cooperative Eco-Approach and Departure Application for Connected and Automated Vehicles along Signalized Arterials

- Ziran Wang, Guoyuan Wu, and Matthew J. Barth
- *IEEE Transactions on Intelligent Vehicles*, vol. 3, no. 4, Dec. 2018, pp. 404–413

[J1]Developing a Distributed Consensus-Based Cooperative Adaptive Cruise Control (CACC) System for Heterogeneous Vehicles with Predecessor Following Topology

- Ziran Wang, Guoyuan Wu, and Matthew J. Barth
- *Journal of Advanced Transportation*, vol. 2017, Article ID 1023654, Aug. 2017

Published Conference Papers

[C18]Augmented Reality-Based Advanced Driver-Assistance System for Connected Vehicles

- Ziran Wang, Kyungtae Han, and Prashant Tiwari
- *2020 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2020)*, Virtual Conference, Oct. 2020

[C17]Long-Term Prediction of Lane Change Maneuver through a Multilayer Perceptron

- Zhenyu Shou, Ziran Wang, Kyungtae Han, Yongkang Liu, Prashant Tiwari, and Xuan Di
- *2020 IEEE Intelligent Vehicles Symposium*, Virtual Conference, Oct. 2020

[C16]Sensor Fusion of Camera and Cloud Digital Twin Information for Intelligent Vehicles

- Yongkang Liu, Ziran Wang, Kyungtae Han, Zhenyu Shou, Prashant Tiwari, and John H. L. Hansen
- *2020 IEEE Intelligent Vehicles Symposium*, Virtual Conference, Oct. 2020

[C15]Optimal Control-Based Eco-Ramp Merging System

- Zhouqiao Zhao, Guoyuan Wu, Ziran Wang, and Matthew J. Barth
- *2020 IEEE Intelligent Vehicles Symposium*, Virtual Conference, Oct. 2020

[C14]A Digital Twin Paradigm: Vehicle-to-Cloud Based Advanced Driver Assistance Systems

- Ziran Wang, Xishun Liao, Xuanpeng Zhao, Kyungtae Han, Prashant Tiwari, Matthew J. Barth, and Guoyuan Wu
- *IEEE 91st Vehicular Technology Conference (VTC2020-Spring)*, Virtual Conference, May 2020

[C13]Cooperative Ramp Merging with Vehicle-to-Cloud Communications: A Field Experiment

- Xishun Liao, David Oswald, Ziran Wang, Guoyuan Wu, Kanok Boriboonsomsin, Matthew J. Barth, Kyungtae Han, BaekGyu Kim, and Prashant Tiwari
- *Transportation Research Board 99th Annual Meeting*, Washington D.C., Jan. 2020

[C12]End-to-End Vision-Based Adaptive Cruise Control (ACC) Using Deep Reinforcement Learning

- Zhensong Wei, Yu Jiang, Xishun Liao, Xuewei Qi, Ziran Wang, Guoyuan Wu, Peng Hao, and Matthew J. Barth,
- *Transportation Research Board 99th Annual Meeting*, Washington D.C., Jan. 2020

[C11]Early Findings from Field Trials of Heavy-Duty Truck Connected Eco-Driving System

- Ziran Wang, Yuan-Pu Hsu, Alexander Vu, Francisco Caballero, Peng Hao, Guoyuan Wu, Kanok Boriboonsomsin, Matthew J. Barth, Aravind Kailas, Pascal Amar, Eddie Garmon, and Sandeep Tanugula
- *IEEE 22nd International Conference on Intelligent Transportation Systems*, Auckland, New Zealand, Oct. 2019

[C10]The State-of-the-Art of Coordinated Ramp Control with Mixed Traffic Conditions

- Zhouqiao Zhao, Ziran Wang, Guoyuan Wu, and Matthew J. Barth
- *IEEE 22nd International Conference on Intelligent Transportation Systems*, Auckland, New Zealand, Oct. 2019

[C9]Lookup Table-Based Consensus Algorithm for Real-Time Longitudinal Motion Control of Connected and Automated Vehicles

- Ziran Wang, Kyungtae Han, BaekGyu Kim, Guoyuan Wu, and Matthew J. Barth
- *2019 American Control Conference,* Philadelphia, PA, Jul. 2019

[C8]Agent-Based Modeling and Simulation of Connected and Automated Vehicles Using Game Engine: A Cooperative On-Ramp Merging Study

- Ziran Wang, BaekGyu Kim, Hiromitsu Kobayashi, Guoyuan Wu, and Matthew J. Barth
- *Transportation Research Board 98th Annual Meeting*, Washington D.C., Jan. 2019

[C7]Eco-Approach and Departure along Signalized Corridors

- Guoyuan Wu, Peng Hao, Ziran Wang, Kanok Boriboonsomsin, and Matthew J. Barth
- *Transportation Research Board 98th Annual Meeting*, Washington D.C., Jan. 2019

[C6]A Review on Cooperative Adaptive Cruise Control (CACC) Systems: Architectures, Controls, and Applications

- Ziran Wang, Guoyuan Wu, and Matthew J. Barth
- *IEEE 21st International Conference on Intelligent Transportation Systems*, Maui, Hawaii, Nov. 2018

[C5]Distributed Consensus-Based Cooperative Highway On-Ramp Merging Using V2X Communications

- Ziran Wang, Guoyuan Wu, and Matthew J. Barth
- *SAE Technical Paper,* 2018-01-1177, Apr. 2018

[C4]Cluster-Wise Cooperative Eco-Approach and Departure Application along Signalized Arterials

- Ziran Wang, Guoyuan Wu, Peng Hao, and Matthew J. Barth
- *IEEE 20th International Conference on Intelligent Transportation Systems*, Yokohama, Japan, Oct. 2017

[C3]Intra-Platoon Vehicle Sequence Optimization for Eco-Cooperative Adaptive Cruise Control

- Peng Hao, Ziran Wang, Guoyuan Wu, Kanok Boriboonsomsin, and Matthew J. Barth
- *IEEE 20th International Conference on Intelligent Transportation Systems*, Yokohama, Japan, Oct. 2017

[C2]Developing a Platoon-Wide Eco-Cooperative Adaptive Cruise Control (CACC) System

- Ziran Wang, Guoyuan Wu, Peng Hao, Kanok Boriboonsomsin, and Matthew J. Barth
- *2017 IEEE Intelligent Vehicles Symposium*, Redondo Beach, CA, Jun. 2017

[C1]Developing a Distributed Consensus-Based Cooperative Adaptive Cruise Control (CACC) System

- Ziran Wang, Guoyuan Wu, and Matthew J. Barth
- *Transportation Research Board 96th Annual Meeting*, Washington D.C., Jan. 2017

Published Technical Reports

[R1]Development of Eco-Friendly Ramp Control for Connected and Automated Electric Vehicles

- Guoyuan Wu, Zhouqiao Zhao, Ziran Wang, and Matthew J. Barth
- *National Center for Sustainable Transportation, U.S. Department of Transportation,* NCST-UCR-RR-20-04, Jan. 2020

PATENTS

[P11]System and Method for Connected Vehicle Lane Merge

- Ziran Wang, Kyungtae Han, and Prashant Tiwari
- U.S. patent application, Filed Sep. 2020

[P10]System and Methods for Providing Guidance to Vehicle Drivers Regarding Predicted Lane-Change Behavior of Vehicle Drivers

- Zhenyu Shou, Kyungtae Han, Ziran Wang, Yongkang Liu, and Prashant Tiwari
- U.S. patent application, Filed Aug. 2020

[P9]Rest Stop Recommendation System

- Zhenyu Shou, Ziran Wang, Kyungtae Han, Yongkang Liu, and Prashant Tiwari
- U.S. patent application, Filed Aug. 2020

[P8]Identifying a Specific Object in a Two-Dimensional Image of Objects

- Yongkang Liu, Ziran Wang, Kyungtae Han, Zhenyu Shou, and Prashant Tiwari
- U.S. patent application, Filed Jul. 2020

[P7]Systems and Methods for Long-Term Prediction of Lane Change Maneuver

- Zhenyu Shou, Ziran Wang, Kyungtae Han, Yongkang Liu, and Prashant Tiwari
- U.S. patent application, Filed Jun. 2020

[P6]Ramp Merging Assistance

- Ziran Wang, Kyungtae Han, and Prashant Tiwari
- U.S. patent application, Filed Feb. 2020

[P6]Systems and Methods for Compensating for Driver Speed-Tracking Error

- Ziran Wang, Kyungtae Han, and Prashant Tiwari
- U.S. patent application, Filed Jan. 2020

[P5]Longitudinal Motion Control of Connected and Automated Vehicles

- Ziran Wang, Hiromitsu Kobayashi, Kyungtae Han, and BaekGyu Kim
- U.S. patent application 16/364851, Filed May 2019

[P4]Adjustable Blind Spot Monitor

- Ziran Wang, Kyungtae Han, and BaekGyu Kim
- U.S. patent application 16/364851, Filed Mar. 2019

[P3]Vehicle-to-Everything Communication-Based Lane Change Collision Avoidance Warning

- Ziran Wang, Kyungtae Han, and BaekGyu Kim
- U.S. patent application 16/295700, Filed Mar. 2019, Published Sep. 2020

[P2]Virtualized Driver Assistance

- Ziran Wang, BaekGyu Kim, and Hiromitsu Kobayashi
- U.S. patent application 16/268729, Filed Feb. 2019, Published Aug. 2020

[P1]XR-based Slot Reservation System For Connected Vehicles Traveling Through Intersections

- Ziran Wang, Kyungtae Han, and BaekGyu Kim
- U.S. patent application 16/264475, Filed Jan. 2019, Published Aug. 2020

PROFESSIONAL ACTIVITIES

As an Editor

Associate editor of *SAE International Journal of Connected and Automated Vehicles* Jun. 2020 - Present

Associate editor of *IEEE International Conference on Intelligent Transportation Systems (ITSC)* Feb. 2020 - Present

As a Member

Member of Technical Committee on Industrial CPS, IEEE Industrial Electronics Society Jul. 2020 - Present

Member of Technical Committee on Smart Cities, IEEE Control Systems Society Jun. 2020 - Present

Member of Society of Automotive Engineers (SAE) Jan. 2018 - Present

Member of Southern California Chinese-American Environmental Protection Association (SCCAEPA) Feb. 2017 - Present

Member of International Chinese Transportation Professionals Association (ICTPA) Feb. 2017 - Present

Member of Chinese Overseas Transportation Association (COTA) Jan. 2017 - Present

Friend of Transportation Research Board (TRB) Standing Committee: Vehicle-Highway Automation Jan. 2017 - Present

Member of Institute of Electrical and Electronics Engineers (IEEE) Sep. 2016 - Present

As an Organizer

Chair of 2020 *IEEE Intelligent Vehicles Symposium* (IV), Internet of Things in Intelligent Transportation Systems: Opportunities and Challenges Workshop, Virtual Oct. 2020

Chair of 23rd IEEE International Conference on Intelligent Transportation Systems (ITSC), Testing and Evaluation Connected and Automated Vehicles Using Emerging Simulation Technologies Workshop, Virtual Sep. 2020

Co-Chair of 4th IEEE Conference on Control Technology and Applications (CCTA), Automotive Control Invited Sessions, Virtual Aug. 2020

As a Reviewer

Reviewer of *Serbian Journal of Electrical Engineering* Aug 2020 - Present

Reviewer of *MDPI Multimodal Technologies and Interaction* May 2020 - Present

Reviewer of *MDPI Applied Science* May 2020 - Present

Reviewer of *IEEE Forum on Integrated and Sustainable Transportation Systems* Mar. 2020 - Present

Reviewer of *International Journal of Automotive Technology* Feb. 2020 - Present

Reviewer of *International Journal of Automotive Technology* Feb. 2020 - Present

Reviewer of *MDPI Sensors* Feb. 2020 - Present

Reviewer of *Journal of Intelligent Transportation Systems* Jan. 2020 - Present

Reviewer of *International Journal of Transportation Science and Technology* Jan. 2020 - Present

Reviewer of *MDPI Information* Jan. 2020 - Present

Reviewer of *IEEE Open Journal of Intelligent Transportation Systems* Dec. 2019 - Present

Reviewer of *IEEE Vehicular Technology Conference* Nov. 2019 - Present

Reviewer of *MDPI Vehicles* Nov. 2019 - Present

Reviewer of *IEEE Transactions on Intelligent Vehicles* Oct. 2019 - Present

Reviewer of *IEEE Access* Aug. 2019 - Present

Reviewer of *Journal of Control, Automation and Electric Systems* Apr. 2019 - Present

Reviewer of *IEEE Conference on Control Technology and Applications* Mar. 2019 - Present

Reviewer of *SAE International Journal of Connected and Automated Vehicles* Oct. 2018 - Present

Reviewer of *American Control Conference (ACC)* Oct. 2018 – Present

Reviewer of *Transportation Research Record (TRR)* Aug. 2018 - Present

Reviewer of *International Conference on Computer Science and Application Engineering (CSAE)* Aug. 2018 - Present

Reviewer of *Journal of Advanced Transportation* Jul. 2018 - Present

Reviewer of *IEEE International Conference on Intelligent Transportation Systems (ITSC)* May 2018 - Present

Reviewer of *Case Studies on Transport Policies (CSTP)* May 2018 - Present

Reviewer of *IEEE Intelligent Vehicles Symposium* Mar. 2018 - Present

Reviewer of *IET Intelligent Transport Systems* Jan. 2018 - Present

Reviewer of *ASCE International Conference on Transportation & Development (ICTD)* Dec. 2017 - Present
Reviewer of *SAE Technical Papers* Oct. 2017 - Present
Reviewer of *TRB Annual Meeting* Sep. 2017 - Present
Reviewer of *IEEE Transactions on Intelligent Transportation Systems* Jun. 2017 - Present
Reviewer of *COTA International Conference of Transportation Professionals (CICTP)* Feb. 2017 - Present

As a Volunteer

Organizer of *2018 IEEE 21st ITSC*, Maui, HI Nov. 2018
Onsite support of Humanplus Intelligent Robotics Technology Co., Ltd. on CES 2018, Las Vegas, NV Jan. 2018
Organizer of Chinese Institute of Engineers (CIE) So-Cal Chapter Annual Convention, Rowland Heights, CA Sep. 2017
Organizer of *2017 IEEE IV Symposium*, Redondo Beach, CA Jun. 2017

ACADEMIC HONORS

Vincent Bendix Automotive Electronics Engineering Award (i.e., best paper in 2019), SAE International Feb. 2020
U.S. Department of Transportation National Center for Sustainable Transportation (NCST) Dissertation Award Jun. 2018
Best Student Research Paper Award, Los Angeles Environmental Forum Aug. 2017
UCR Dean's Distinguished Fellowship Award Fall 2015 - Spring 2017
BUPT Scholarship Award Jun. 2014 & Jun. 2013
The Honorable Mention, The Mathematical Contest in Modeling (MCM) Feb. 2014

TEACHING EXPERIENCE

Intelligent Transportation Systems (UCR EE 246) Oct. 2018
- Conducted 2 hours of lecture independently as a rotating lecturer of the course
- Introduced car-following models, cooperative adaptive cruise control, and simulation tools

Feedback Control (UCR ME 121) Mar. 2017 - Jun. 2017
- Conducted 20 hours of discussion sessions independently as a teaching assistant of the course
- Introduced the analysis and design of feedback control systems using classical control methods, including block diagrams, closed-loop stability, root locus, Bode plots, and etc.

Mechanical Engineering Modeling and Analysis (UCR ME 118) Jan. 2017 - Mar. 2017
- Conducted 20 hours of discussion sessions independently as a teaching assistant of the course
- Introduced data analysis and modeling used in engineering through MATLAB, including descriptive and inferential statistics, fitting linear and nonlinear models to observed data, numerical differentiation and integration, etc.

Introduction to Engineering Computation (UCR ME 018) Sep. 2016 - Dec. 2016
- Conducted 60 hours of lab sessions independently as a teaching assistant of the course
- Introduced the use of MATLAB in engineering computation, including scripts and functions, programming, input/output, two and three-dimensional graphics, elementary numerical analysis, etc.

ADVISED STUDENTS

Advised at Toyota

- Zhenyu Shou, *then*: 2020 winter co-op @Toyota, *now*: Ph.D. student in Civil Engineering @Columbia
- Yongkang Liu, *then:* 2020 winter co-op @Toyota, *now:* Ph.D. student in EE @UT Dallas
- Xianguo Liu, *then:* 2019 summer co-op @Toyota, *now*: Ph.D. student in ECE @Northwestern

Advised at UCR

- Xishun Liao, *then*: M.S. student in ME @Maryland & summer research intern @UCR, *now*: Ph.D. student in ECE @UCR
- Yuan-Pu Hsu, *then:* M.S. student in ECE @UCR, *now:* Software Engineer @Microsoft
- Xuanpeng Zhao, *then:* B.S. & M.S. student in ECE @UCR, *now:* Ph.D. student in ECE @UCR
- Yu Jiang, *then:* B.S. & M.S. student in ECE @UCR, *now:* M.S. student in ECE @UCR

- Pingbo Ruan, *then:* B.S. & M.S. student in ECE @UCR, *now:* M.S. student in ECE @UCR
- Shangrui Liu, *then:* B.S. & M.S. student in ECE @UCR, *now:* M.S. student in ECE @UCR
- Hangquan Zhao, *then:* B.S. student in ECE @UCR, *now:* M.S. student in ECE @UCSD
- Yue You, *then:* B.S. student in ECE @UCR, *now:* M.S. student in ECE @UCR
- Yu Wang, *then:* M.S. student in ME @UCR

TALKS

A Digital Twin Paradigm: Vehicle-to-Cloud Based Advanced Driver Assistance Systems

- 23rd COTA Annual Winter Symposium, Washington D.C., Jan. 2020

Unity3D-Based AV Simulation with V2X Communication and Human-in-the-Loop Integration

- Automated Vehicles Symposium, Orlando, FL, Jul. 2019

Agent-Based Modeling and Simulation of Connected and Automated Vehicles Using Game Engine

- Transportation Research Board (TRB) 98th Annual Meeting, Washington, D.C., Jan. 2019

Eco-Friendly Applications in Connected and Automated Vehicle Technology

- University of California, Riverside CE-CERT Open House, Riverside, CA, Oct. 2018

Connected Eco-Bus: An Innovative Vehicle Powertrain Eco-Operation System for Efficient Plug-In Hybrid Electric Buses

- ARPA-E NEXTCAR 2018 Annual Meeting, Southfield, MI, Apr. 2018

Distributed Consensus-Based Cooperative Highway On-Ramp Merging Using V2X Communications

- WCX: SAE World Congress Experience, Detroit, MI, Apr. 2018

Connected and Automated Vehicle Research at UCR

- University of California, Riverside Extension, Riverside, CA, Jan. 2018

Developing a Platoon-Wide Eco-Cooperative Adaptive Cruise Control (CACC) System

- Los Angeles Environmental Forum, San Gabriel, CA, Aug. 2017

Distributed Consensus-Based Cooperative Adaptive Cruise Control (CACC) Systems

- TuSimple Technology Co., Ltd., San Diego, CA, Jul. 2017

MEDIA EXPOSURES

NCST Partner CE-CERT Takes Eco-Driving Simulator to CES, National Center for Sustainable Transportation, Jan. 2020

Testing a Connected Eco-Driving System in Field Trials with Heavy-Duty Trucks, Featured News, Tech Xplore, Aug. 2019

Steering into the Future of Connected and Automated Vehicles, UCR News, Jul. 2019

CE-CERT Researchers Open 2019 with a Successful TRB Conference Showing, UCR CE-CERT News, Feb. 2019

TSR Group has a Strong Showing at the 2018 IEEE ITSC Conference, UCR CE-CERT News, Dec. 2018

CE-CERT and Bourns Host 2018 STEP Conference, UCR CE-CERT News, Oct. 2018