

YAO MA

Phone: (806) 834-8113
Yao.Ma@ttu.edu

Texas Tech University, Box 41021
Lubbock, Texas, 79409

EDUCATION

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|--------------|---|------|
| Ph.D. | The University of Texas at Austin, Mechanical Engineering
<i>Advisor: Prof. Junmin Wang</i>
<i>Thesis: Synergistic and Intelligent Control of Vehicle Powertrain-Aftertreatment Systems</i> | 2019 |
| M.S. | North Carolina State University, Electrical Engineering | 2013 |
| B.S. | Harbin Institute of Technology, Control Science and Engineering | 2012 |

EXPERIENCE

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|---|-----------------|
| Texas Tech University, Lubbock
Assistant Professor , Department of Mechanical Engineering <ul style="list-style-type: none">Instructor, undergraduate and graduate courses on control and dynamicsDirector, Mobility Automation Lab | 2019 to Present |
| The University of Texas at Austin, Austin
Graduate Research Assistant , Mobility System Lab <ul style="list-style-type: none">Evaluation and control design of Connected Autonomous Vehicle for energy efficiency and mobility improvement of the transportation systemOptimization of vehicle energy and emission performance with autonomy, connectivity and driver characteristics | 2018 to 2019 |
| The Ohio State University, Columbus
Graduate Research Associate , Vehicle System and Control Lab <ul style="list-style-type: none">Modeling, control, and estimation of automotive engine, powertrain, and aftertreatment systemOptimization and control of hybrid vehicle power management systems | 2014 to 2018 |
| Mohu Consumer Electronics, Raleigh
Electrical Engineer , Product Development <ul style="list-style-type: none">Board-Level analog circuit design, prototype, and manufacture | 2013 to 2014 |

SELECTED PROJECTS

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| Texas Tech University, Mobility Automation <ul style="list-style-type: none">Connected and Autonomous Vehicle in Mixed TrafficDriver Behavior Monitoring, Characterization, and AnalysisPredictive Propulsion and Energy Systems Control for Connected Vehicles | 2019 to Present |
| National Science Foundation, Cyber-Physical System: Synergy <ul style="list-style-type: none">Next-generation, personalized, active vehicle safety control systems design with vehicle connectivity technologiesInteractive driving simulation platform design and implementation with virtual reality and autonomous steering wheel controlSoftware user interface and environment design | 2016 to 2018 |

Tenneco, Inc., Advanced Diesel Engine Aftertreatment System	2014 to 2015
<ul style="list-style-type: none"> • Setup Engine test cell with the corresponding data acquisition system • Establish CAN bus-based communication with fast prototype Engine ECU • Perform experiment calibration of Diesel after treatment system including SCR, DOC, DPF • Design and implement control algorithms for emission control purpose 	

PUBLICATIONS

Full list at:
<https://www.ma-yao.com/publication/>

PRESENTATIONS AND INVITED TALKS

- [T7] Driving the Future: Self-Driving Cars and Applications, Invited Talk at Texas Tech University IEEE Student Branch, Lubbock, TX, March 2020
- [T6] A Predictive Control Method for Automotive Selective Catalytic Reduction Systems, Oral Presentation at American Control Conference, Philadelphia, PA, July 2019.
- [T5] Synergistic and Intelligent Control of Vehicle Powertrain-Aftertreatment Systems, Invited Talk at Tennessee Technological University, Cookeville, TN, February 2019
- [T4] Synergistic and Intelligent Control of Vehicle Powertrain-Aftertreatment Systems, Invited Talk at Texas Tech University, Lubbock, TX, February 2019
- [T3] Model Based Control of Automotive Selective Catalytic Reduction Systems with Road Grade Preview, Oral Presentation at American Control Conference, Milwaukee, WI, July 2018.
- [T2] Sliding-mode Control of Ammonia Coverage Ratio for Automotive Selective Catalytic Reduction Systems, Oral Presentation at American Control Conference, Milwaukee, WI, July 2018.
- [T1] A Control Method for Consistent Performance of Automotive Selective Catalytic Reduction Systems under Variant Aging Conditions, Oral Presentation at American Control Conference, Boston, MA, July 2016.

TEACHING & MENTORING

Texas Tech University, Lubbock	2019 to Present
Instructor, Department of Mechanical Engineering	
<ul style="list-style-type: none"> • ME 4334 Control of Dynamic Systems • ME 5312 Control Theory I • ME 4331 Individual Study in Mechanical Engineering • ME 5120 Graduate Seminar 	
Thesis Advisor, Department of Mechanical Engineering	
<ul style="list-style-type: none"> • One Ph.D. Student, Aug 2023 (Expected) • One M.S. Student, May 2021 	
The University of Texas at Austin, Austin	2019
Teaching Assistant, Walker Department of Mechanical Engineering	
<ul style="list-style-type: none"> • Course ME 340 Mechatronics 	
The Ohio State University, Columbus	2017
Guest Lecturer, Department of Mechanical and Aerospace Engineering	
<ul style="list-style-type: none"> • Course ME 3260 System Dynamics and Vibrations 	
North Carolina State University, Raleigh	2013

Teaching Assistant, Department of Electrical Engineering

- Course Robotics featuring Scaled Autonomous Vehicle
- Supervise lab experiment

SERVICE

Peer-Reviewed Articles for:

ASME Journal of Dynamic Systems, Measurement and Control
ASME Journal of Engineering for Gas Turbines and Power
ASME Letters in Dynamic Systems and Control
American Control Conference (ACC)
Dynamic Systems and Control Conference (DSCC)
IEEE/ASME Transactions on Mechatronics
IEEE Control Systems Letters
IEEE Conference on Decision and Control (CDC)
IEEE International Conference on Intelligent Transportation Systems (ITSC)
IEEE Transactions on Intelligent Transportation Systems
IEEE Transactions on Transportation Electrification
IEEE Transactions on Vehicular Technology
IEEE Vehicular Technology Magazine
International Journal of Energy Research
Journal of the Franklin Institute
Journal of Vibration and Control
Nonlinear Dynamics
SAE World Congress Experience (WCX™)
Transportation Research Part C: Emerging Technologies

Conferences Organizing:

- Session Chair, 2020 Dynamic Systems and Control Conference (DSCC)
- Session Chair, 2021 Modeling, Estimation, and Control Conference (MECC)
- Invited Session Organizer, 2021, 2022 American Control Conference (ACC)
- Invited Session Organizer, 2021 Modeling, Estimation, and Control Conference (MECC)

Editorship Services:

- Associate Editor, IEEE Transactions on Vehicular Technology
- Associate Editor, 2020 Dynamic Systems and Control Conference (DSCC)
- Associate Editor, 2021, 2022 American Control Conference (ACC)

Grant Review:

- Panelist, 2021 National Science Foundation
- Panelist, 2021 NSF ENG CAREER Workshop

Professional Membership:

- Member, The American Society of Mechanical Engineers (ASME)
 - ASME Dynamic Systems & Control Division
 - Automotive and Transportation System Technical Committee
 - Energy Systems Technical Committee
- Member, Institute of Electrical and Electronics Engineers (IEEE)
 - IEEE Control Systems Society (CSS)
 - IEEE CSS Technical Committee on Intelligent Control (TCIC)
 - IEEE Vehicular Technology Society
 - IEEE Intelligent Transportation Systems Society
- Member, Society of Automobile Engineers (SAE)

University/College/Department Services:

- Organizer, 2020 Mechanical Engineering Graduate Seminars
- Member, 2021 Mechanical Engineering New Faculty Search Committee
- Member, 2021 Mechanical Engineering Ph.D. Qualifying Exam Committee

Synergistic Activities:

- Organizer and Host, ASME Dynamic Systems & Control Division Podcast Series
- Judge, South Plains Regional Science and Engineering Fair (K-12 Students), Texas Tech University
- Instructor, WiE (Women in Engineering) and MEP (Minority Engineering Program) RISEng STAR, College of Engineering, Diversity, Outreach & Inclusion Office, The Ohio State University
- Teaching Assistant, 2013 Engineering Summer Camp (High School Students), North Carolina State University

SELECTED AWARDS

Texas Tech University Fellowship , STEM Teaching, Engagement & Pedagogy (STEP) Program	2021
ASME Automotive and Transportation System Technical Committee Finalist , Best Paper in American Control Conference	2021
Texas Tech University Nominee , 2020 ORAU Ralph E. Powe Junior Faculty Enhancement Awards	2019
The University of Texas at Austin Recipient , Advance Teaching Certificate by Faculty Innovation Center	2018
American Control Conference Committee Recipient , Student Travel Award	2016, 2018
Harbin Institute of Technology Recipient , People's Scholarship	2008-2010

STUDENTS AWARDS

Texas Tech University Mehmet Ozkan , Community of Scholars, Leadership And Mentorship Program	2020
Shailesh Rao , Undergraduate Research Scholars, Honors College	2020
Bibek Dhungana , Outstanding Presenter Award, TTU Undergraduate Research Conference	2021
Ali Ahsan , Program in Inquiry & Investigation (Pi ²) Scholar	2021