Yuxiao Chen

University of Michigan
Department of Mechanical Engineering
G041, Autolab
Ann Arbor, MI 48109
Personal Website: Link

chenyx@umich.com

Phone: +1 (734) 780-1768

Education

University of Michigan
Ph.D. candidate, Mechanical Engineering, since 2013.
Field: Control
Advisors: Huei Peng, Jessy Grizzle

Tsinghua University
B.S., Mechanical Engineering, 2013.

Teaching

Department of Mechanical Engineering, University of Michigan
Instructor, Modeling, Analysis and Control of Dynamic Systems, 2016

Research interests

My research are on the correct-by-construction control synthesis for cyber physical systems with disturbance and uncertainty. Most of my work concentrates on safety critical systems.

Journal Publication

J1 Nilsson, Petter, Omar Hussien, Ayca Balkan, **Yuxiao Chen**, Aaron D. Ames, Jessy W. Grizzle, Necmiye Ozay, Huei Peng, and Paulo Tabuada. "Correct-by-Construction Adaptive Cruise Control: Two Approaches" on IEEE Control Systems Technology, 2016 PDF

J2 **Yuxiao Chen**, Huei Peng, Jessy Grizzle. "Obstacle Avoidance for Low Speed Autonomous Vehicles Using Barrier Function and Avoidable Set Concepts" on IEEE Transaction on Control System Technology, 2017 PDF

J3 **Yuxiao Chen**, Huei Peng and Jessy Grizzle, "Fast Trajectory Planning and Robust Trajectory Tracking for Pedestrian Avoidance" on IEEE Access, 2017 PDF

J4 **Yuxiao Chen**, Huei Peng and Jessy Grizzle, "Validating Non-cooperative Control Designs through a Lyapunov Approach", Accepted by IEEE Control System Technology, 2017

J5 **Yuxiao Chen**, Ayonga Hereid, Huei Peng and Jessy Grizzle, "Synthesis of safe controller via supervised learning for truck lateral control", Submitted to IEEE Control System Technology PDF

Conference Publication

C1 **Yuxiao Chen**, Dezhao Zhang, and Keqiang Li. "Enhanced eco-driving system based on V2X communication" International IEEE Conference on Intelligent Transportation Systems (ITSC), 2012 Link

C2 Nilsson, Petter, Omar Hussien, **Yuxiao Chen**, Ayca Balkan, Matthias Rungger, Aaron Ames, Jessy Grizzle, Necmiye Ozay, Huei Peng, and Paulo Tabuada. "Preliminary results on correctby-construction control software synthesis for adaptive cruise control" In proceedings of Decision and Control(CDC), 2014 Link

C3 **Yuxiao Chen**, Huei Peng, Jessy Grizzle. "Real-time Pedestrian Avoidance Through Fast Path Planning and Robust Trajectory Tracking" In international Symposium on Dynamics of Vehicles on Roads and Tracks (IAVSD), 2015

C4 **Yuxiao Chen**, Huei Peng, Jessy Grizzle. "Decentralized Chassis Control with Guaranteed Performance by Lyapunov approach" In proceedings of American Control Conference, 2017 Link

C5 **Yuxiao Chen**, Huei Peng, Jessy Grizzle. "Correct by Construction Design of Autonomous Vehicles through a Barrier Function Method" In proceedings of American Control Conference, 2017 Link

C6 **Yuxiao Chen** , Necmiye Ozay , Huei Peng and Jessy Grizzle, "Data-driven computation of minimal robust control invariant set", Submitted to Decision and Control(CDC), 2018

C7 **Yuxiao Chen** , Nauman Sohani , Huei Peng, "Modelling of uncertain reactive human driving behavior: a classification approach" Submitted to Decision and Control(CDC), 2018