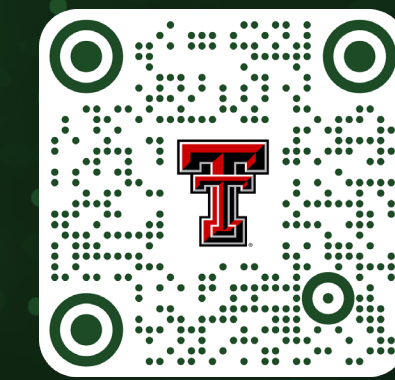


2022 Cyber-Physical Systems Principal Investigators' Meeting, November 8-9, 2022

CRII: CPS: Human-Centric Connected and Automated Vehicles for Sustainable Mobility

Yao Ma, Texas Tech University
<https://www.ma-yao.com/publication/>



The project aims to:

1. develop new modeling, control, and optimization for Connected and Automated Vehicles in human-dominated traffic for **efficiency and sustainability** enhancement,
2. while respecting unique **personal driving behaviors and social norms** accordingly

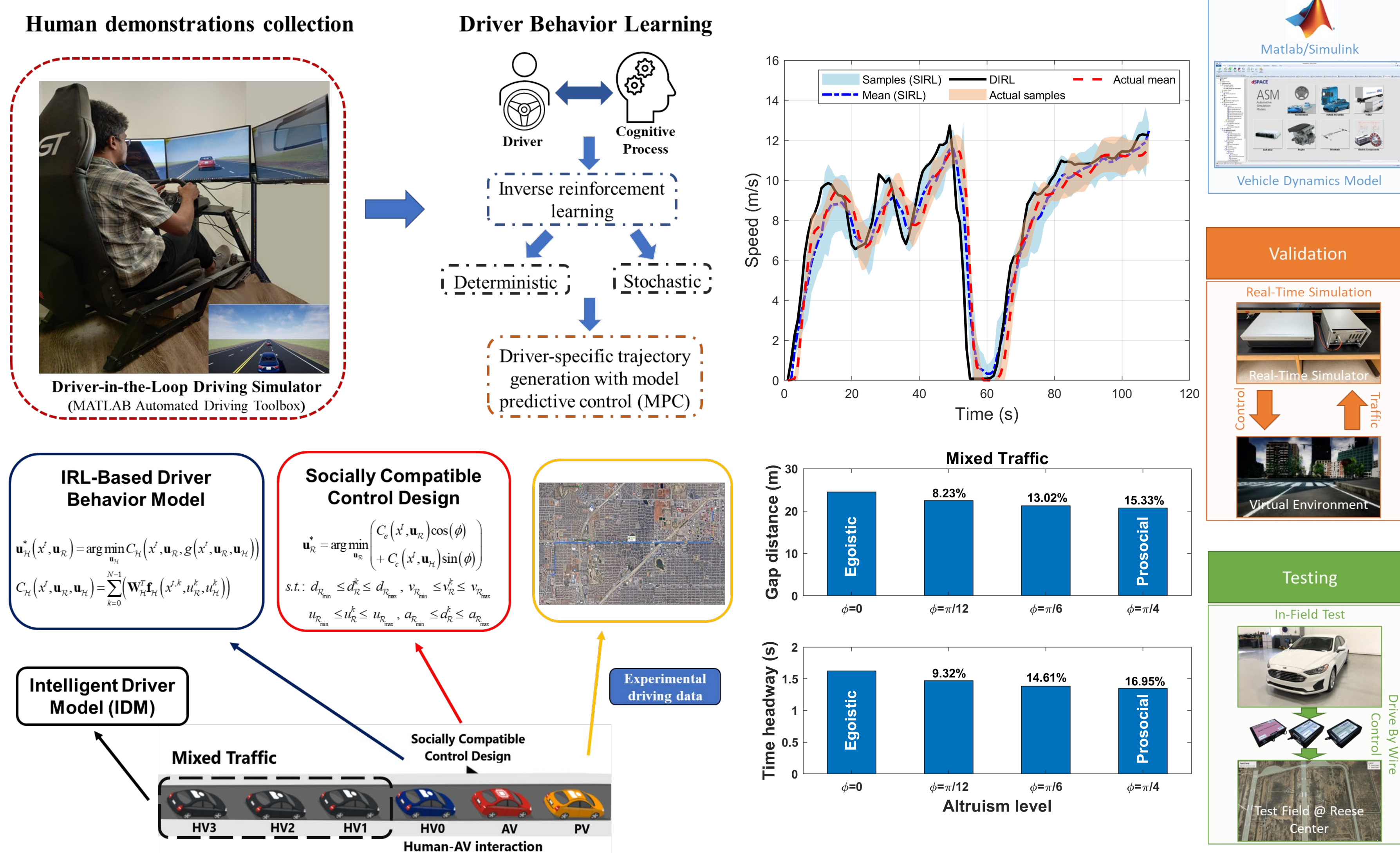
Challenge Personalization

- Characterizing personalized driving behaviors with **heterogeneity and stochasticity**

Challenge Interaction

- Predicting **human-autonomy interactions** in mixed traffic

Solution



Scientific Impact Theory

- Unified framework for data-enriched modeling, control, and optimization of **human-centric cyber-physical systems**

Scientific Impact Application

- **Human-autonomy interactions** in convergent domains: cognition, machine learning, robotics, etc.

Socioeconomic

- Efficient, safe, and sustainable mobility solutions for ground transportation

Broader Impact

Education

- Education-Research Multidisciplinary Integration
- K12 Outreach

Broader Impact

DEI

- STEM Education at Minority Serving Institution (MSI)

Broader Impact



Student won Best Paper Award at 2022 American Control Conference

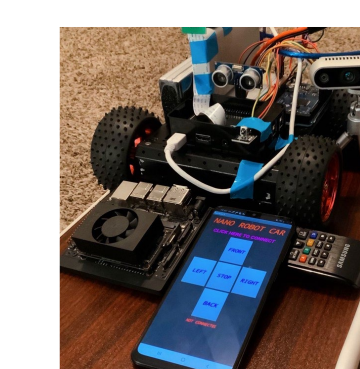


Texas Tech University 2022 Explore Engineering Summer Camp

Texas Tech University 2022 Undergraduate Research Conference (URC)



Student won Rising Star Award at 2022 Modeling, Estimation, and Control Conference



Southwest Node of the NSF Innovation Corps (I-Corps)



South Plains Regional Science and Engineering Fair