PURDUE UNIVERSITY | College of Engineering

Research Opportunity on Automated Vehicle | Purdue Digital Twin Lab

[Description] Purdue Digital Twin Lab in the College of Engineering is looking for highly motivated students to conduct research on developing automated vehicle technologies from summer 2023 onwards. The expected research projects will focus on one or a combination of the following topics:

- [**Automated Driving Algorithm**] Develop algorithms for object detection and tracking, sensor fusion, behavior prediction, decision making, motion planning, and/or motion control.
- [**Automated Driving System**] Integrate the full-stack automated driving system (perception, planning, control) on the lab's automated vehicle to test proposed algorithms.
- [**Digital Twin Simulation**] Construct interactive simulations for automated driving on the lab's automated vehicle (with augmented reality) or driving simulator (with game engines).
- [**Cloud/Edge Computing**] Build an end-to-end data pipeline in the vehicle-edge-cloud framework to provide cloud-based services in real time.

[Requirements] Desirable candidates should be currently pursuing a MS/BS degree in an engineering discipline, such as Mechanical Engineering, Electrical and Computer Engineering, and Computer Science. Priority will be given to candidates with research experience in robotics/automation/AR, or development experience in ROS/Autoware/C++/python. Interested candidates are encouraged to send resumes to ziran@purdue.edu with the email title "Research Application-#*Full Name*".

[Background] Dr. Ziran Wang is a Tenure-Track Assistant Professor at the Purdue University College of Engineering, where he directs the Purdue Digital Twin Lab to build digital replicas of real-world entities based on AI, big data, cloud/edge computing, and mixed reality. Prior to joining Purdue, Dr. Wang worked for Toyota R&D in Silicon Valley as a Principal Researcher, leading a research team to build digital twins for Toyota and Lexus vehicles. He serves as Founding Chair of IEEE Technical Committee on Internet of Things in Intelligent Transportation Systems, and Associate Editor of four academic journals. The automated vehicle technologies developed in the Digital Twin Lab have high visibility to automotive companies through project collaborations, which will introduce employment opportunities in industry. More information can be found on websites: http://ziranw.github.io, https://purduedigitaltwin.github.io/.