UTC Project Information	
Project Title	3D structural information sensing system (3D-SISS) based on Road-side Unit (RSU)
University	University of Washington
Principal Investigator	Yinhai Wang
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans $40,000 University of Washington $40,000
Total Project Cost	$80,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	Jan 1, 2022- June 30, 2023
Brief Description of Research Project	The project is to develop a monocular surveillance camera based 3D structural information sensing system (3D-SISS) for full-automatic traffic scene monitoring and analysis. Based on the system, traffic managers can collect all demanded traffic data in the scene including vehicle classification, vehicle localization, vehicle counting, speed measurement, congestion detection, and collision detection without any manual operations. 3D-SISS can help all transportation participants in the view including drivers, pedestrians and cyclists understand the surrounding objects and prevent the potential dangers to increase travel safety. 3D sensing technology plays more and more important roles in many applications like connected and autonomous vehicles (CAV), Mobile Mapping Systems (MMS), Advanced Driving Assistance Systems (ADAS), and Augmented Reality (AR). Comparing with traditional 2D traffic sensing technologies, 3D sensing methods can use the depth information to estimate more details about the surrounding environment like objects dimension and location. The projection from 2D to 3D real world enables computers to perceive environments like human eyes, which can provide more comprehensive, detailed, and accurate information about all the target objects in the scene.

Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	
Impacts/Benefits of Implementation (actual, or anticipated)	
Web Links • Reports • Project Website	