

Project Information Form

Project Title:	Improving Transportation Information Resilience: Error Estimation for Networked Sensor Data
University:	University of California, Davis
Principal Investigator:	Yueyue Fan
PI Contact Information:	Email: yyfan@ucdavis.edu
Funding Source(s) and Amounts Provided (by each agency or organization):	California Department of Transportation (Caltrans) - \$87,721.00
Total Project Cost:	\$87,721.00
Agency ID or Contract Number:	Caltrans 65A0686 Task Order 003 UCD-CT-FAST-003
Start and End Dates:	December 1, 2018 – November 30, 2019
Brief Description of Project:	<p>Reliable and resilient data serves as a critical foundation for almost all new mobility technologies in a modern transportation system, thus plays a significant role in improving the efficiency, safety, and ultimately sustainability of a transportation system. Despite the importance of sensor data performance evaluation, research effort devoted to this subject is rather small compared to studies that directly take sensor data as input. Most sensor health monitoring studies focused on identifying 'bad' sensors whose data should be discarded. The problem of estimating and correcting the systematic bias of sensor data has not been addressed, especially in the context of large-scale networked data pieces from heterogeneous sources. The researcher aims to fill this critical gap by combining data science and network modeling techniques to provide greater modeling flexibility. The incorporation of spatial correlation of networked data leads to better estimation quality. Knowledge transfer from academia to practice will be strengthened through an open-source tool for sensor performance evaluation and visualization to be shared with transportation agencies. This research will improve fundamental knowledge on transportation data analytics as well as the effective management of data and information infrastructure in transportation practice.</p>
Describe Implementation of Research Outcomes (or why not implemented): Place any photos here	



National Center for Sustainable Transportation

Impacts/Benefits of Implementation (actual, not anticipated):	
Web Links <ul style="list-style-type: none">• Reports• Project website	https://ncst.ucdavis.edu/project/improving-transportation-information-resilience-error-estimation-for-networked-sensor-data/