

Project Information Form

Project Title:	Deep Learning based Ecodriving system for Battery Electric Vehicles
University:	University of California, Riverside
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PI Contact Information:	gywu@cert.ucr.edu
Funding Source(s) and Amounts Provided (by each agency or organization):	US DOT - \$70,000
Total Project Cost:	\$70,000
Agency ID or Contract Number:	DOT 69A3551747114 UCR-DOT-407
Start and End Dates:	July 1, 2017 – June 30, 2018
Brief Description of Research Project:	<p>Reducing transportation-related energy consumption and greenhouse gas (GHG) emissions have been a common goal of many public agencies and research institutes for years. It is widely accepted that stop-and-go traffic accounts for a significant amount of energy/fuel consumption and greenhouse gas (GHG) emissions for urban driving. Therefore, various ecodriving technologies have been developed for conventional engine vehicles to promote the ecodriving behaviors so that fuel consumption can be minimized. In recent years, deployment of electric vehicles (EVs) is being regarded as one of the promising way to reduce the transpiration related fossil fuel consumption and GHG emissions. But considering its unique characteristics (e.g., regenerative braking), ecodriving technologies for EVs are not well developed.</p> <p>This research targets at designing a smart ecodriving system for EVs by taking advantage of recent development in vehicle automation, vehicle connectivity and machine learning, to reduce energy consumption. This designed system is based on deep learning strategy that enables the vehicle's ability to learn the optimal vehicle dynamics (e.g., velocity and acceleration) control in different real-time traffic conditions. The ecodriving system is designed to assist the energy efficient driving for EVs when crossing a signalized intersection and when approaching a stop sign or queue end. The designed ecodriving system will significantly improve the energy efficiency of EVs and help promote the use of EVs, therefore mitigating the environmental impact of transportation activities.</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/deep-learning-based-ecodriving-system-for-battery-electric-vehicles/