

UTC Project Information	
Project Title	Green Navigation: A Big Data Approach Towards Sustainable Transportation
University Partner	University at Buffalo
Principal Investigator	Prof. Lu Su, Prof. Chunming Qiao
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Funding Source(s) and Amounts Provided (by each agency or organization)	
Total Project Cost	\$74638
Agency ID or Contract Number	
Start and End Dates	Sept 2017 – Aug 2018
Brief Description of Research Project	<p>This project addresses the need for big data solutions that reduce the carbon emissions and energy footprint of the transportation sector by providing computational tools for informing driver decisions. These cyber-tools take physical models of vehicles, roads and traffic into account to produce advice that enhances transportation sustainability, and thus will have significant contributions to cyber-physical transportation systems. According to the US Energy Information Administration, the transportation sector currently accounts for one of the largest shares of energy consumption in the nation, among all sectors. A research investment is needed to offer computationally-enabled solutions for drivers to reduce their energy cost, emissions, delay, and carbon footprint. Towards this end, this proposal develops a system that gives individualized navigation advice to drivers. Currently, vehicular traffic is managed largely in bulk. Traffic lights, route advisories, and other traffic regulators operate in the spirit of broadcast, offering the same feedback to all. In contrast, with increasing proliferation of computational devices and GPS navigation systems in vehicles with their own networking, storage, and processing capabilities, it becomes possible to customize real-time information that flows back to drivers, thereby allowing individuals to make more informed energy-saving and cost-saving decisions. Such individualization will result in significant total energy and emissions savings.</p>
Describe Implementation of Research Outcomes (or why not implemented)	

<p>Place Any Photos Here</p>	
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none">• Reports• Project website	