Traffic Incident Management Enabled by Large-data Innovations

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Iowa State is partnering with the Iowa Department of Transportation (DOT) to use emerging data analytics techniques to reduce the number of road incidents through proactive traffic control and to minimize the impact of individual incidents that do occur through early detection, response, and traffic management and control. This NSF-funded 3-year project will develop TIMELI, an advanced software system that will 1) integrate multiple software tools and data feeds such as road-based radar sensors, live video, Waze data, and weather sensors to better predict traffic incidents, and 2) create a better software system for Traffic Incident Managers (TIMs) to manage incidents. When a truck turns over on the road, the TIM is the person who coordinates with the police, firefighters, ambulances, and highway helpers to get people to safety and traffic re-routed.

This summer, REU interns will help with goal #2: evaluate a prototype software system that allows TIMs to work more efficiently. Interns will have the opportunity to assist with data collection and analyses. They will study how a prototype influences the TIM’s work. This data analyses will seek to answer questions similar to the following:

- Does the prototype improve the overall performance of TIMs?
- Does the prototype reduce the steps and time normally needed to complete frequent tasks?
- Does the prototype usability satisfy the minimal requirements for TIMs?