



## TIMELI

### Traffic Incident Management Enabled by Large-data Innovations

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**Interns:** Katherine Atwell, Christopher Kawell, and Celia Loya

**Team Meeting Location:** TBD

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: design and evaluate a prototype software system that makes TIMs' work more efficient. Interns will study how TIMs located at the Iowa DOT Command Center currently do their jobs, using three desktop monitors, a wall of live video, 14 different software applications, and 6 forms of communication. Research challenges include:

- Prototype a new interface for TIMs to make them efficient and save more lives
- When presenting AI predictions to TIMs, which may not be 100% accurate, how do we present them so that TIMs understand them and trust them appropriately?
- How can the system design embody the wisdom of experienced TIMs so that novice TIMs learn the job more quickly?

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