Explanations and Expectations: Trust Building in Autonomous Vehicles

Autonomous vehicles have the potential to help provide our society with safer and more efficient driving. Despite this there are serious concerns about whether drivers will ever choose to fully rely on autonomous vehicles. The most central of these concerns involves trust. Trust is driven by expectations. Expectations in autonomous vehicles can be defined as the belief that the autonomous vehicle will behave in a specific manner.

Expectations have been recognized as an important element in trust building in autonomous vehicles, understanding how to deal with their violations has not. Yet, dealing with violations of expectations are at the core of trust building in dynamic environments. In failing to address violations of expectations, the current literature on trust in autonomous vehicles has failed to fully grapple with one of its core issues.

The goal of this study is to promote trust in autonomous vehicles by exploring the role of explanations on driver expectations of their autonomous vehicle. We plan to conduct a user study in a controlled experimental environment. This will include examining the content, timing and delivery of explanations.