Driver preferences for usage of driving automation in various road scenarios

Problem description

Despite technological advancements in driving automation, the decision to continue using driving automation or disengage often lies with the driver, who must assess the road conditions and feel confident in the system's abilities. Previous studies have highlighted that drivers tend to trust or distrust automation depending on specific road environments and situational factors. For instance, drivers may prefer to use automated systems in relatively predictable environments, such as highways, but might choose to disengage automation in complex or unfamiliar driving scenarios like urban traffic, construction zones, or bad weather conditions. However, the factors influencing these decisions are not fully understood. Therefore, it is crucial to investigate which road situations and conditions prompt drivers to either continue relying on driving automation or manually take over control of the vehicle.

Objectives

The study aims to explore drivers' preferences regarding the continued use or disengagement of driving automation in various road scenarios. The study identifies preferred driving scenarios for driving automation use, assesses factors influencing automation disengagement, and provides design recommendations for a user-centered driving automation system strategy that aligns with driver preferences in varying road situations.

Assignment

- Review of the driver behaviour, road scenarios, and driving automation usage.
- Set research questions
- Design a study (e.g., simulator experiment, online study) to collect data to solve the research questions
- Investigates drivers' behaviour in different road scenarios during automated driving.
- Write a thesis report (and potentially a scientific paper)

Research Group

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Information

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* We are looking for a student who can start between October 2024 - February 2025