Beyond Perception: Behavioural Trust Indicators for Safer Lane Detection

Short description of the project/thesis:

Modern lane detection can already estimate how well it sees the road, but safe automated driving also depends on knowing when the overall system can actually be trusted. You will work on behavioural trust indicators such as driver readiness and monitoring availability and bring this idea from concept to implementation. The goal is to build and evaluate a prototype that extends an existing multi-assistant lane detection framework and supports smarter warnings and runtime safety decisions.

Thesis Type:

- Master Thesis/Project

Goals and Tasks:

- Dive into how trust and runtime monitoring work in intelligent driving systems!
- Implement useful existent set of behavioural trust indicators for a real lane detection framework
- Connect your indicators to the safety logic and perception indicators and try them out in realistic test scenarios
- See how your work can improve warnings, fallback behaviour, and the overall reliability of the system

Recommended Prior Knowledge

- Curiosity, imagination and creativity!
- Python, machine learning and computer vision basics
- Experience with robotics, embedded AI, or autonomous systems is a plus

Starting date
a.s.a.p.

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