

Using Virtual Reality to explore the link between Driving Behaviour, Satisfaction, and Attitudes



Problem description

In contemporary society, the relationship between individuals and their vehicles extends beyond mere transportation, encompassing a complex interplay of psychological, behavioural, and environmental factors. Virtual Reality (VR) can accurately measure physiological and behavioural data, enabling the generation of diverse traffic scenarios. It offers the possibility to understand the impact of nuanced factors on driving satisfaction. These questions gain additional relevance when considering the detrimental effects of car dependency on the environment.

Assignment

Master thesis projects will analyse relations between car-related attitudes (e.g. car-dependence level, public transport usage frequency), driving behavior and related sense of satisfaction. Specific aspects may include for example (i) the effect of various environments (countryside, cities, traffic jams) on driving behaviour and/or driving satisfaction, or (ii) the effect of the vehicle design and aesthetics aspects of vehicle design on driving behavior and driving satisfaction (e.g. does driving a certain kind of vehicle makes you drive more aggressively?).

The tools available at the MXR Lab are a driving simulator, virtual reality (VR) headsets, and physiological sensors (heart rate, eye tracking), among others.

Candidate

- Knowledge and interest in transportation behaviour
- Successfully completed the eXtended Reality for Civil Engineering course (CIEM6304) or have experience in VR
- Some experience in Python or R programming
- Willingness to further develop data analysis and modelling skills

Research group

Mobility in eXtended Reality (MXR) Lab and the Smart Public Transport Lab,
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