



## AI rather than human monitoring of automated vehicles

### Problem description

Automated vehicles (AV) are increasingly becoming common on roads with further development of higher levels of AVs being close to implementation. At present and in the near future, many of these vehicles will be lower-level AVs that will require a driver to either co-control the vehicle or monitor the vehicle's actions. It has long been known that if a human is given a mundane task without sufficient stimulus that distraction will quickly occur leading to an increased inability to appropriately take control over an automated system. This poses significant challenges for the safety or actual critical control of such systems. Meanwhile, Artificial Intelligence (AI), and specifically Machine Learning (ML) approaches, have become much more advanced and capable of performing mundane tasks to a high level of accuracy. AI doesn't become distracted and can pose a promising option for monitoring a system, avoiding some of the most critical AV situations.

### Objectives & Assignment

An approach that uses AI to monitor another autonomous system is an innovative one that addresses a major issue in automated driving. At present, it isn't clear if an autonomous system is capable of supervising another autonomous system. This makes this research topic an exciting, but also challenging one at the heart of science and practice. The project would require the construction of a conceptual framework of how an autonomous monitoring system could supervise an AV. The construction and implementation of a simple proof of concept AI-model should be performed to investigate if such an approach could be a promising research direction. Finally, further benefits and challenges should be investigated that such a system might encounter.

This Master thesis can also include an internship at a relevant external organisation

### Research group

DiTTlab, Transport & Planning Department  
In cooperation with the Traffic Safety Lab, Delft.

### External support

TBC

### Information

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