

# Human-machine communication interfaces for automated vehicles

(graduation project at Nissan Japan)



## Motivation

Intentions of automated vehicles (AVs) need to be well-understood by drivers of conventional vehicles. One of the key approaches to communicating such intentions is through human-machine interfaces (HMI). While there is much research on HMI displaying the intentions of AVs to pedestrians, there is little understanding on how AVs can efficiently communicate their intentions to human drivers of surrounding vehicles. Furthermore, it remains unclear how HMI can harness the capabilities of vehicle-to-vehicle communication.

## Graduation assignment

**Design a concept of a communication interface** (visual or auditory, internal or external HMI) to help human drivers on the road understand the behavior of AVs, possibly including reasons behind AVs' intentions.

## Project setup

The project will be based in Delft but will include a 2 to 3 months period at **Nissan Research Centre** in Atsugi (Japan). Nissan will provide you with monthly allowance and subsidized accommodation during your stay in Japan and will compensate your airfare (to and from Japan).

This assignment is a cooperation between the faculties of the Faculty of IDE (intended chair Elmer van Grondelle) and the Faculty of ME (Intended mentors: Olger Siebinga, Arkady Zgonnikov).

Intended starting date of the project is no later than **October 1, 2024**.

## Applicants

You are

- A brilliant IDE master student with some experience and a vast interest in HMI design.
- Affinity with (auto)mobility e.g., minor Future Mobility Design or Strategic Automotive elective, is not a must but appreciated.
- You have basic research skills and are eager to expand on those.

## Contact

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