Validation of AI:
A step towards Automotive AI management System

Problem description

One of the major drawbacks of AI is the black box nature of it. This is more significant in the automotive industry where the OEMs can not or would not share their AI models or systems with the type approval authorities. This is backed by the rationale that since it is a piece of software and is developed across many suppliers it is near to impossible to assess or audit the model or the system. The main objective of this assignment is to propose a framework which can be used to validate an AI system keeping in mind the black box nature of the AI. There are many existing frameworks which validate AI keeping the black box nature in mind, but they are not robust enough to validate an complex and multi-modal system like an autonomous vehicle. Additionally there are no existing framework which are suited for automotive industry.

Objectives & Assignment

The main research tasks are as follows:

- Identify the integral components that needs to be audited for a successful assessment of AI in an autonomous vehicle.
- Develop/Propose an Artificial Intelligence Management System(AIMS) which can be applicable to level 3 and beyond systems.
- Propose an integration of AIMS with the Safety Management System found in R157 by UNECE or NATM audit guidelines proposed by VMAD SG3.

Who do you work with?

This project will also help RDW prepare for the upcoming regulations and policies around automated vehicles by accruing knowledge about auditing AI systems.

As an intern, you work for the Vehicle Regulation & Licensing (VRT) division of RDW. You are part of the Applied Innovation team that focuses on knowledge and product development for the development of new legislation, new licensing frameworks and working methods for vehicle innovation. We take a learning-by-doing approach, developing new products and knowledge and then validating them by also applying them, including by conducting practical trials on public roads. Various benefits are available including an internship allowance of €450,- per month.

More information

Do you want to know more about this assignment? Please contact Espedito Rusciano (senior advisor): ERusciano@rdw.nl or 06-25764089. Or at TU Delft: s.c.calvert@tudelft.nl
To apply, please send your application, including motivation and CV to Patty Alleman-Pronk, PPronk@rdw.nl.

Open to students from various different related Masters, such as:

Systems & Control (3Me), Transport & Planning (CEG), Robotics (3Me), Computer science (EEMCS), Transport Infrastructure & Logistics (TIL), Engineering Policy & Analysis (TPM), etc.