

Machine Learning Models for Online Prediction of Fuel Quality in Road Vehicles

Potential supervisors

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Research groups/keywords

Artificial Intelligence

Machine Learning

Deep Learning

Fuel Quality Prediction

Description

Renewable fuels are becoming more and more used in the transport sector. At the same time the requirements for fuel consumption and near-zero emissions are getting more stringent. As the variability in the fuel is important, the current diesel standard (EN590) allows for a large variation and the engine control can be further optimized if the information of the exact fuel property is available. By using on-line data (available in the ECU, Engine Control Unit) and advanced Machine Learning methods, this project aims at developing such on-line predictors. By a unique combination of design of experiments, technical understanding of the combustion process, data analytics and advanced machine learning methods, there is a potential for improved efficiency and low emissions. The project builds upon ongoing research at Chalmers and could also (in a later stage) be integrated in the research at Chalmers. This project will be a collaboration between CSE and M2 departments at Chalmers.

Requirements

- Studies computer Science/engineering, physics or mathematics
- Courses in machine learning and/or AI
- Good programming skills (preferable in Python)
- Being motivated, creative, focused and has problem-solving skills

Date range

September 2021 to October 2024

Number of students

1-2 (preferably two)