Virtual sensor based on data in Powertrain Control Units

Background:
A modern truck consists of multiple control units (ECUs) and electrical devices such as Sensors and Actuators. Each second, thousands of signals are sampled to control the trucks different systems which creates a lot of information that opens opportunities for data analytics.
Hardware has the tendency to break, and repairs can often lead to unwanted stops and costs for the costumer. With all this collected data, Volvo is looking into if it is possible to replace some of the hardware, preferably sensors, with software built on machine learning.

Challenge:
- Research and compare different methods to predict sensor values from available data in the ECU, such as other sensors and signals from other ecus in the truck.
- The algorithm needs to be accurate enough to replace a hardware sensor while efficient enough to be run on a microcontroller with limited resources.
- Identify which sensor is most feasible to replace with a learned algorithm from a data perspective, i.e., which sensor is easiest to replace according to the data available.

Profile:
- General knowledge of machine learning.
- Knowledge of embedded systems.
- Programming experience, preferable in Python.
- Self-driven with good communication skills.

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