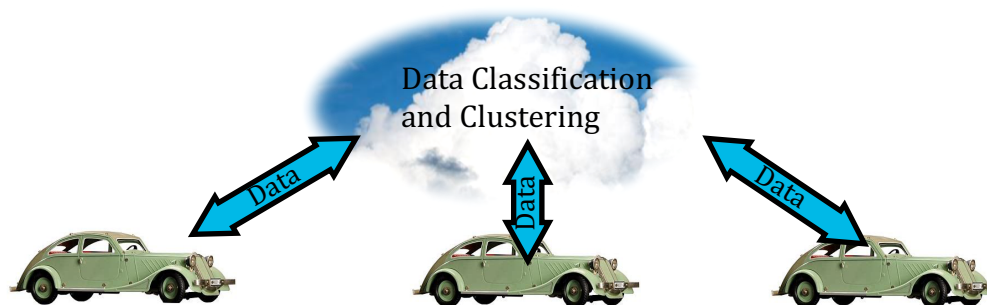


# Master Thesis Proposal

## Data Compression Techniques for Remote Fault Diagnosis in Automotive Systems

System monitoring is important in autonomous systems to fulfill functional safety and assure reliability with respect to system faults. More advanced algorithms, for example, Machine Learning classifiers and Vehicle Fleet data analysis methods, require significant computational power that is not available on-line in the vehicle. New communication capabilities, for example 4G and 5G, allows for transmitting more data from the vehicle to be analyzed remotely. However, it is still necessary to reduce the amount of transmitted data by using different compression techniques. For example, in fault diagnosis applications it is important that relevant information for detecting faults and identifying the faulty component are not lost during data compression.



This thesis work is conducted in collaboration with Volvo Cars and the objective is to investigate suitable techniques for compressing diagnosis data streams. Compression aspects could include methods for identifying data sequences to transmit or compressing the actual signal to reduce the amount of data. Real-time computation aspects of the proposed algorithm should be investigated. As a case study, real data from an engine and different fault scenarios will be used for the analysis.

If you are interested or have questions, please feel free to mail me:

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or come by my office in the vehicular systems corridor (B-building behind Café Java).