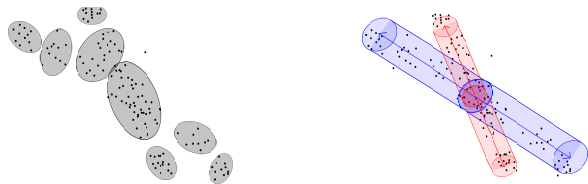# Master Thesis Proposal

Data-driven Clustering for Fault Diagnosis with Unknown Number of Fault Classes

Data-driven fault diagnosis of technical systems is complicated by that faults are rare events. This means that collecting representative data from different faults is a difficult task. One solution is to monitor systems on-line and identify data sequences when the system deviates from its nominal behavior. However, this means that there are datasets where the true scenario is unknown. Data clustering can be used to find patterns in data where the true fault class is unknown.

In this master thesis project, the objective is to implement and evaluate a data-driven fault clustering method when the number of fault classes is unknown. The goal is to identify datasets that are likely to belong to the same fault class and to improve the models over time as new data become available. In this project, data from an engine test bench will be used for experiments.

We are looking for students with skills in data analysis, signal processing, programming, and are interested in machine learning.

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).