

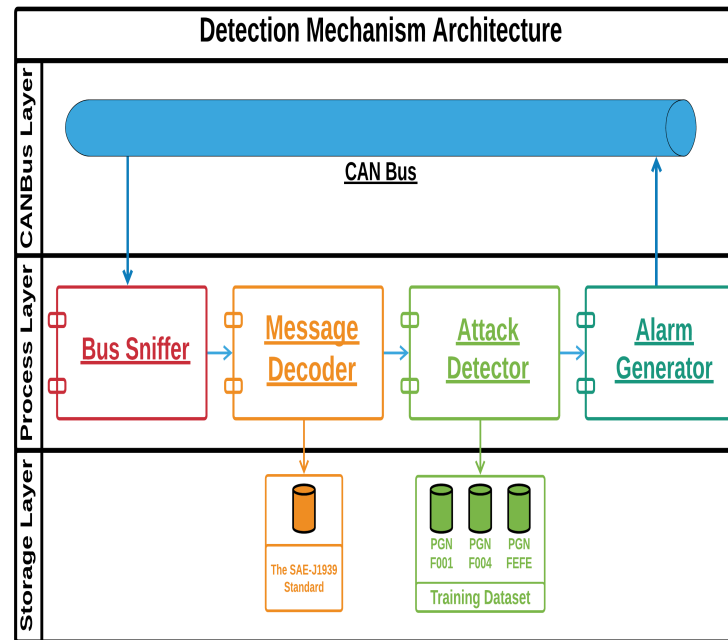
# Detecting and Reconstructing Network Anomalies and Intrusions in Heavy Vehicles

## Challenge:

- High-dimensional nature of data, and its complex relationship with operational state of vehicle
- Anomaly detection in real-time in resource-constrained environments

## Solution:

- Develop behavioral profiles by using ML on high-dimensional data generated by ECUs
- Detect valid, but out of sequence, messages generated by ECUs using ML
- High accuracy, low false positive rate achieved



## Scientific Impact:

- Intrusion detection for message injection in embedded networks
- Formalizing and understanding the relationships of high-dimensional data

## Broader Impact:

- Heavy Vehicles form part of critical infrastructure
- Injecting messages have disastrous consequences
- Interdisciplinary ed. - ML, Network, Mech Eng
- Interaction with NMFTA and industry