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vSentry™ AI

Deploying Cybersecurity in current and future vehicles
Return Of Experience session

vSentry™ Product Portfolio

vSentry™ Core

Cybersecurity software suite for connected ECUs

Deterministic and Behavioral protection for Network, Software and Data

vSentry™ AI

Behavioral profiling and anomaly detection software using Machine Learning & Deep Learning technology

Vehicle-level protection against unknown vulnerabilities

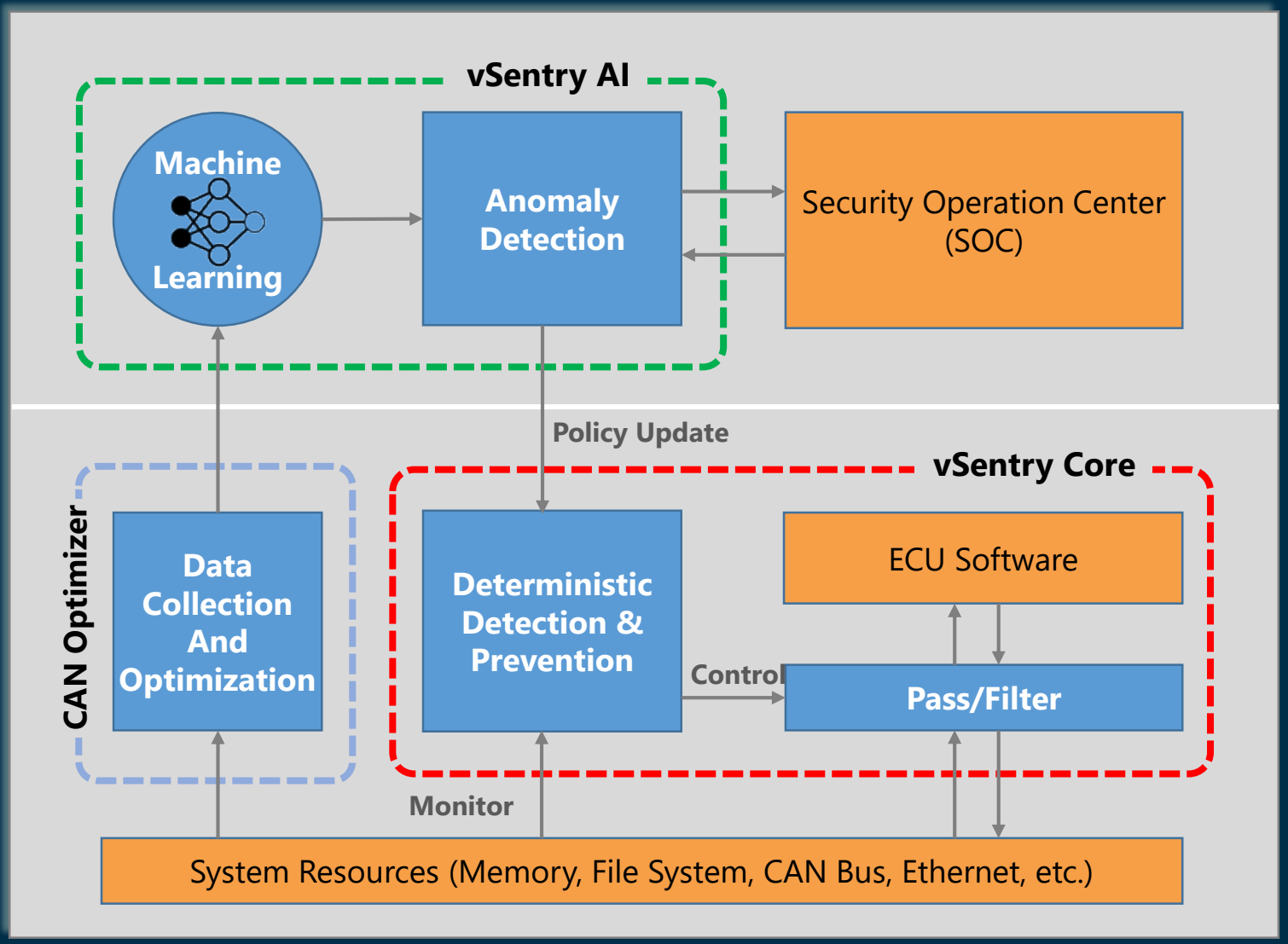
CAN Optimizer

Efficient delivery of in-vehicle data to the cloud

Machine Learning based 1:50 lossless compression of raw CAN data

The three products can work together or separately

vSentry Positive Security Architecture



Positive Security

- Establish normal baseline behavior
- Monitor mass vehicle data
- Detect unknown vulnerabilities using Machine Learning & Deep Learning
- Update deterministic rules to mitigate new vulnerabilities

Future proof protection from unknown threats

vSentry AI

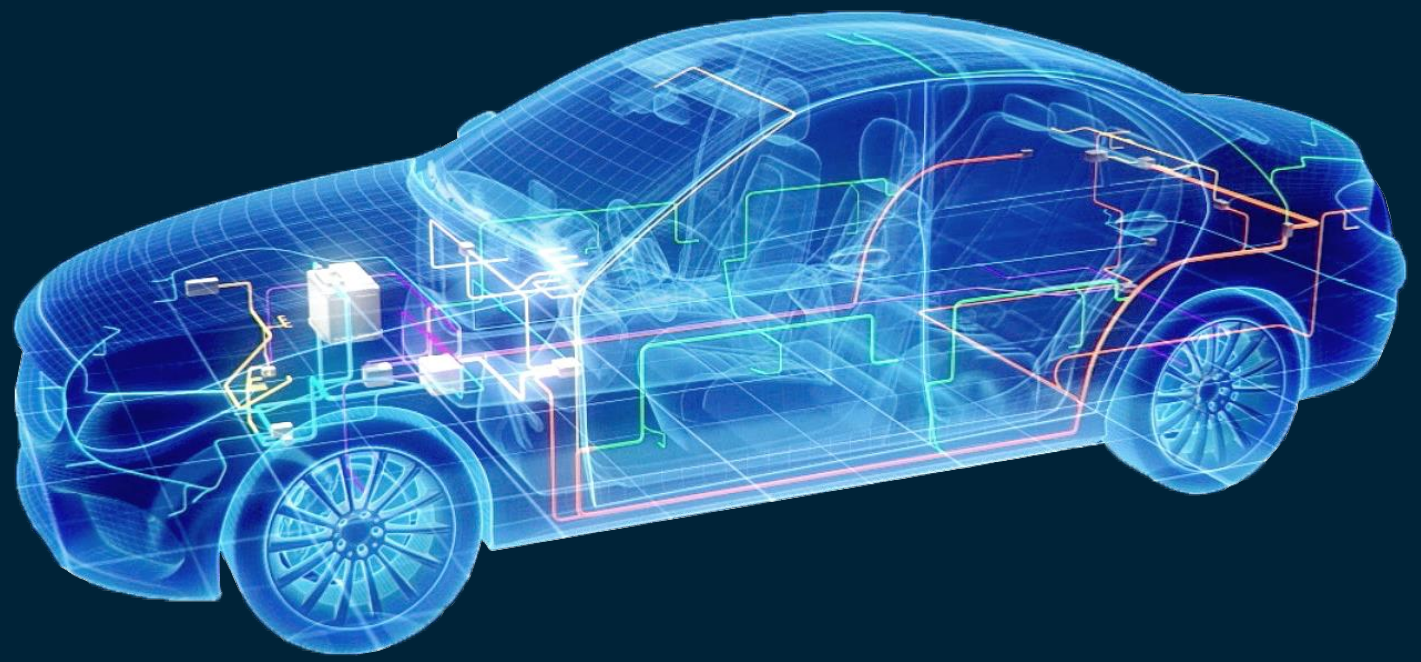
AI based profiling of vehicle operation enabling anomaly detection of malicious activities and operational deficiencies

In-Vehicle Network Carries Valuable Information

Modern vehicles have tens of micro-computers connected over an in-vehicle network.

The network runs 15,000 messages every second.

Vehicle networks carry valuable information about all vehicle component.



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vSentry AI Overview

vSentry AI is a behavioral profiling and anomaly detection solution based on Machine Learning & Deep Learning

Zero-Day Vulnerabilities

Uncover security vulnerabilities before the attack starts

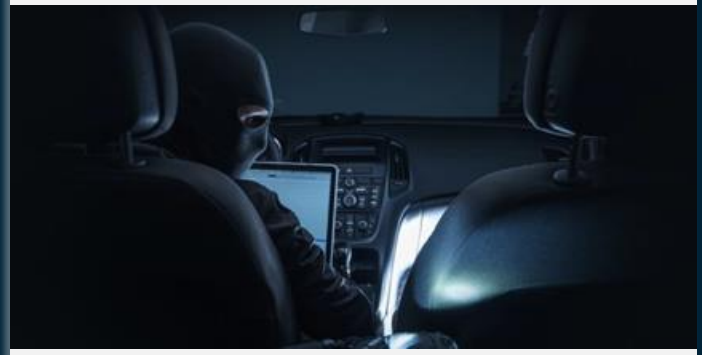
Avoid reputation loss and improve safety

Malfunction

Identify vehicle malfunctions before they happen

Avoid recalls and improve operational efficiency

Misuse and Abuse



Detect operation outside of the planned or allowed range

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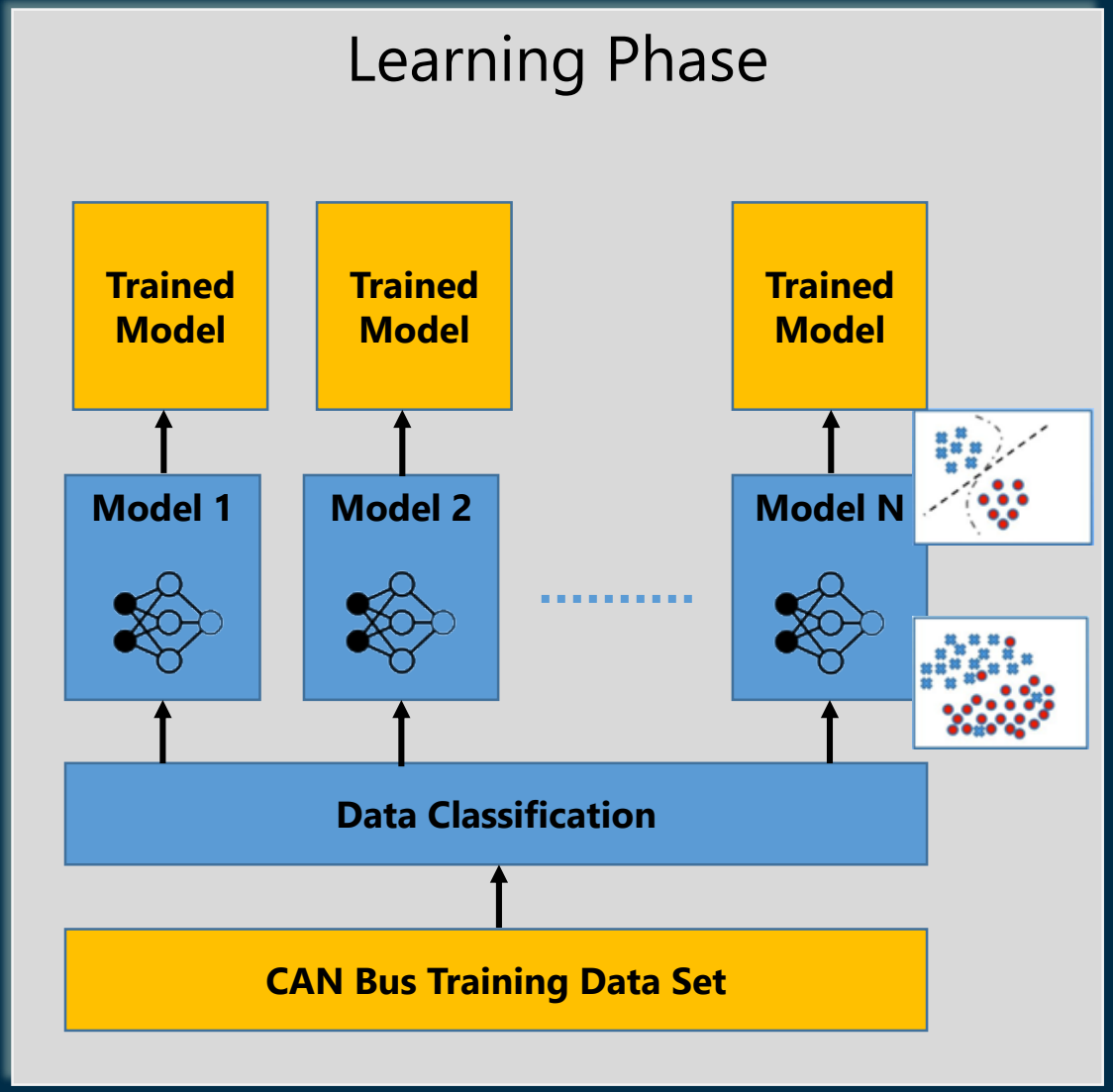
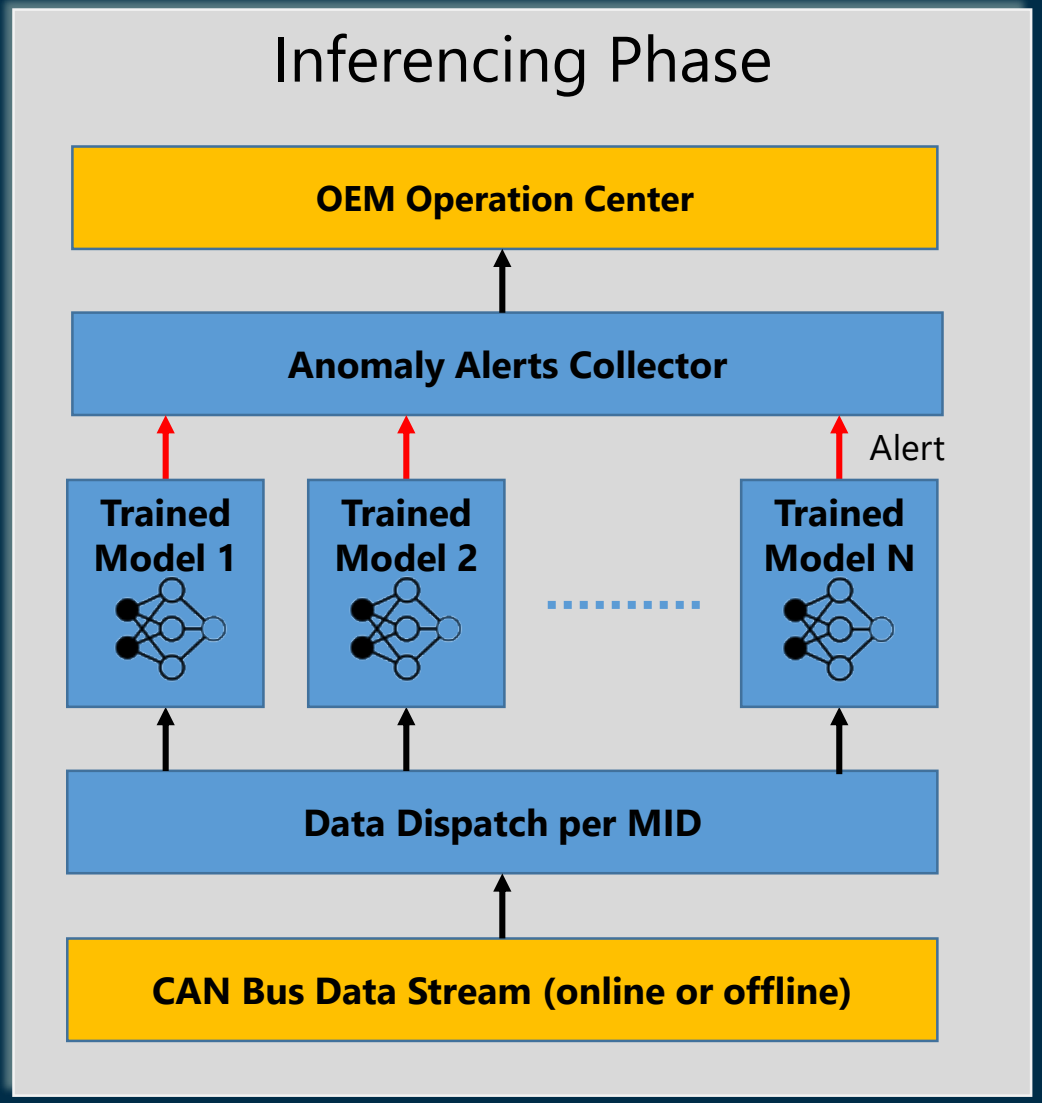
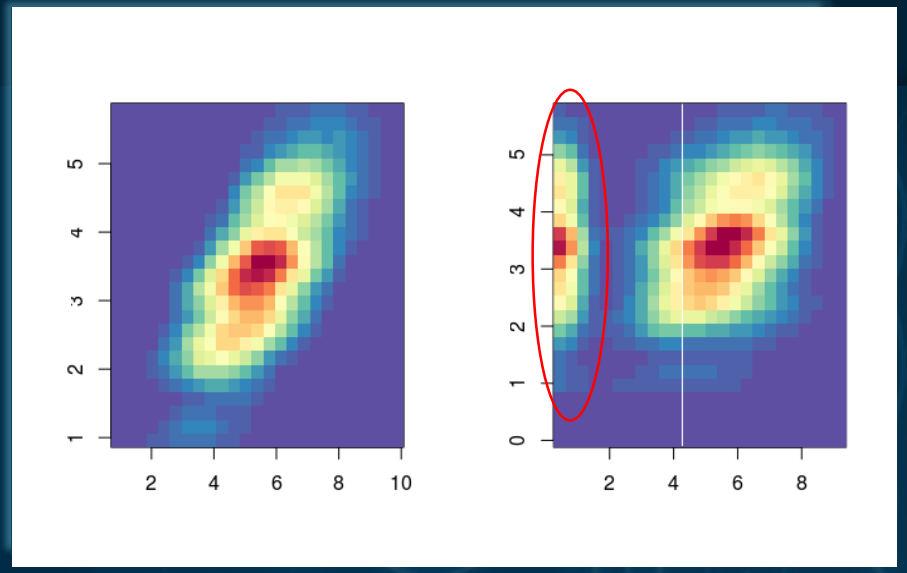
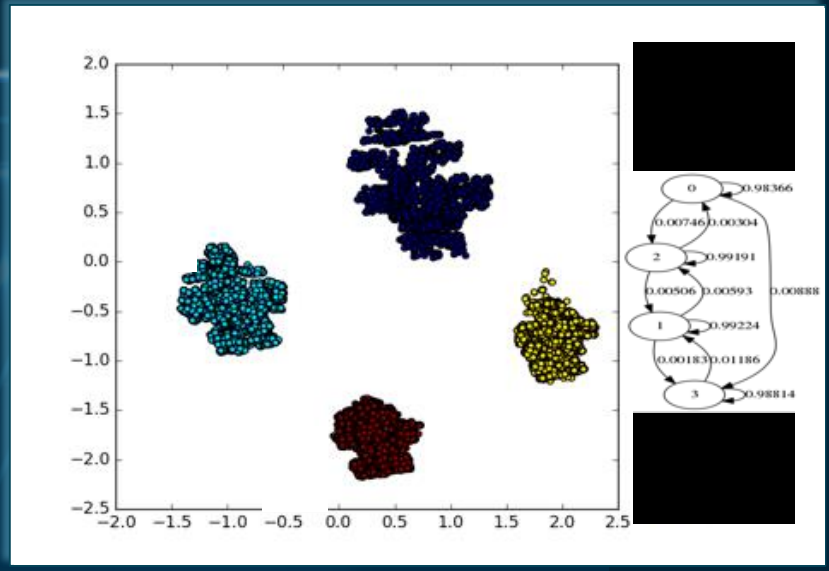
vSentry AI Architecture

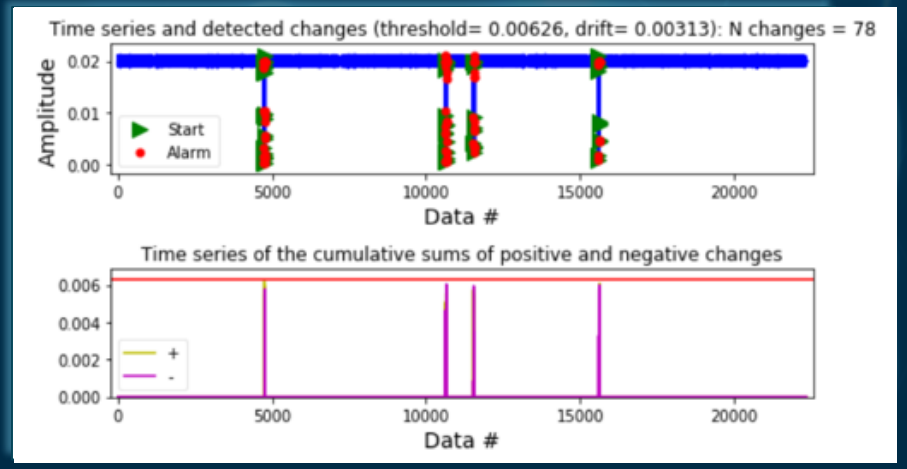


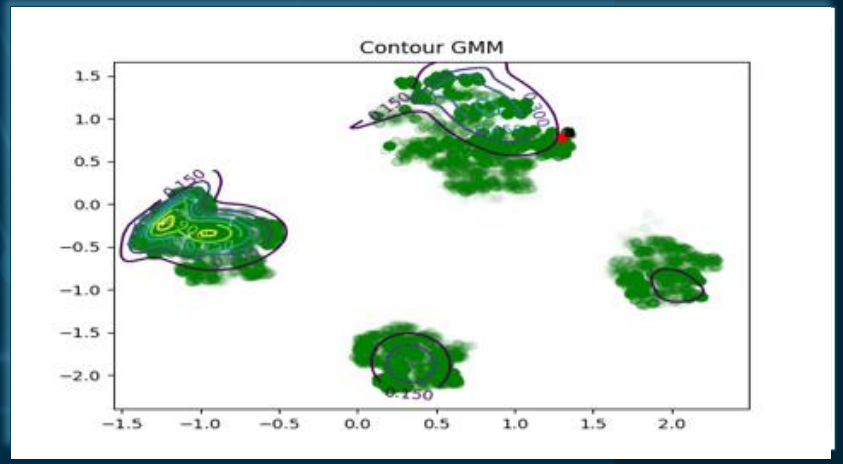


Machine Learning Algorithms Examples

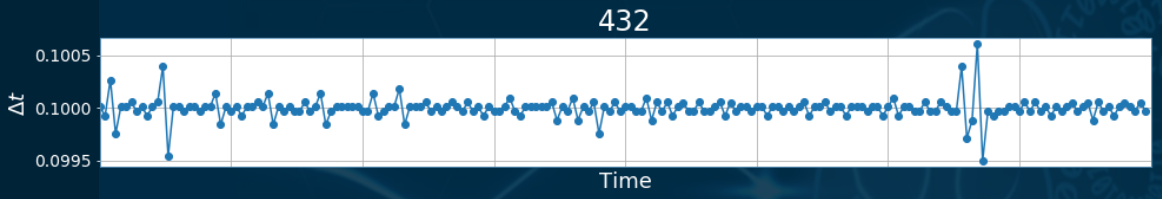


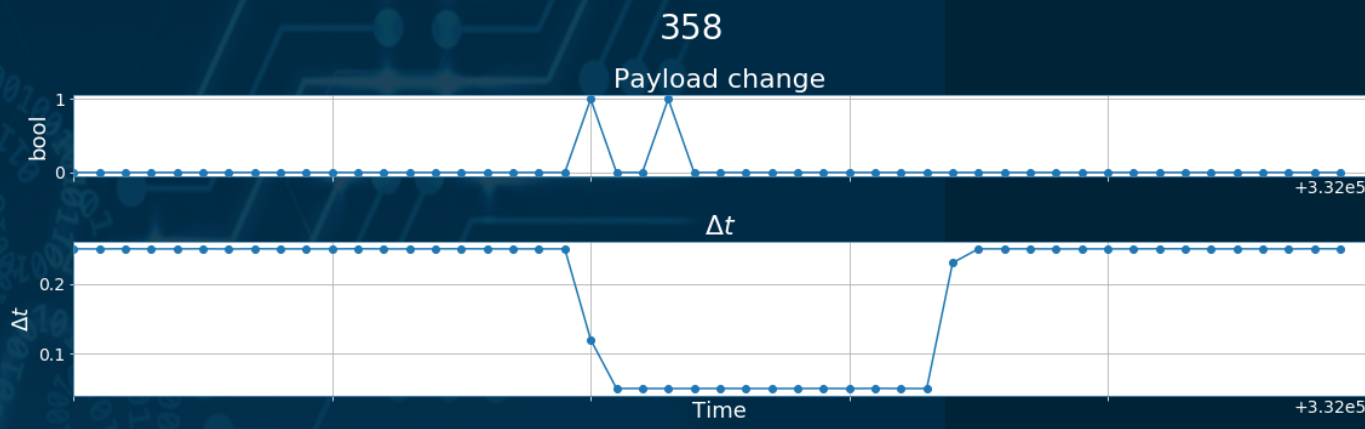


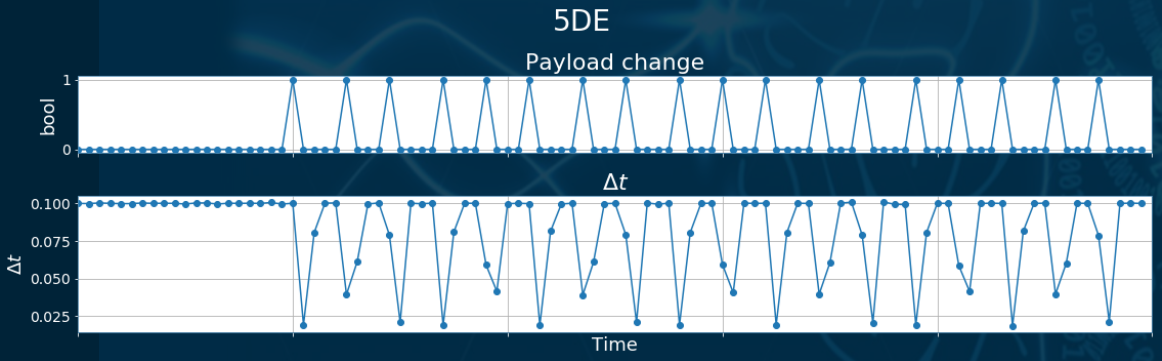


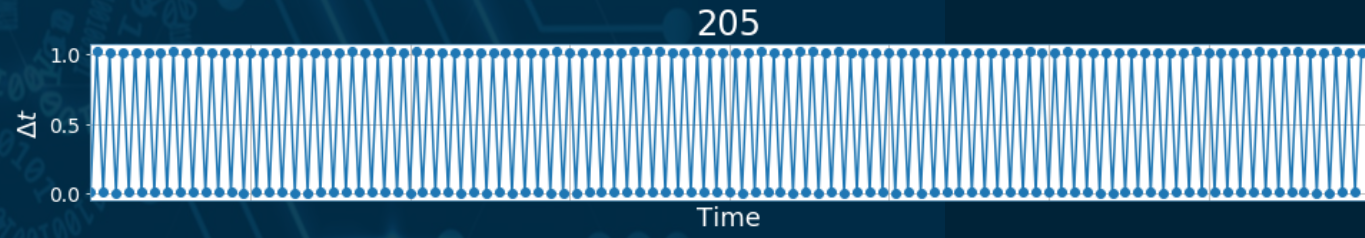


Temporal classification

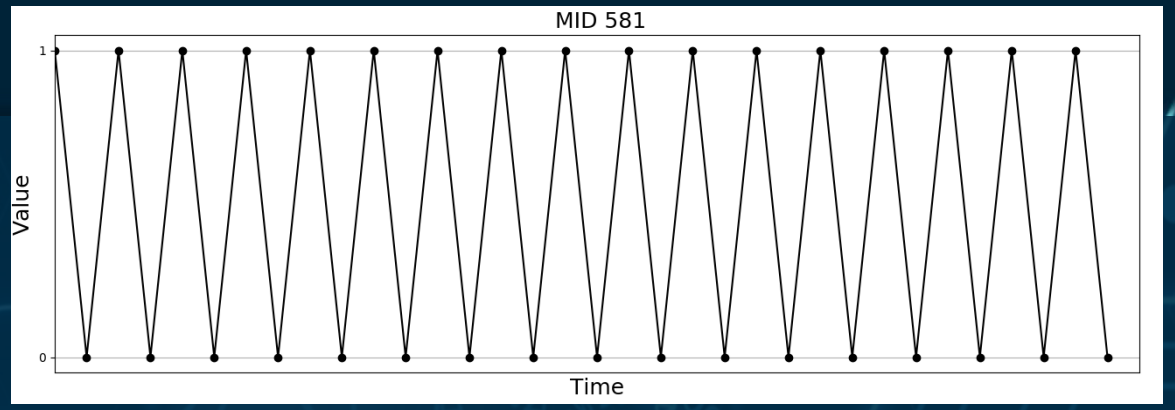


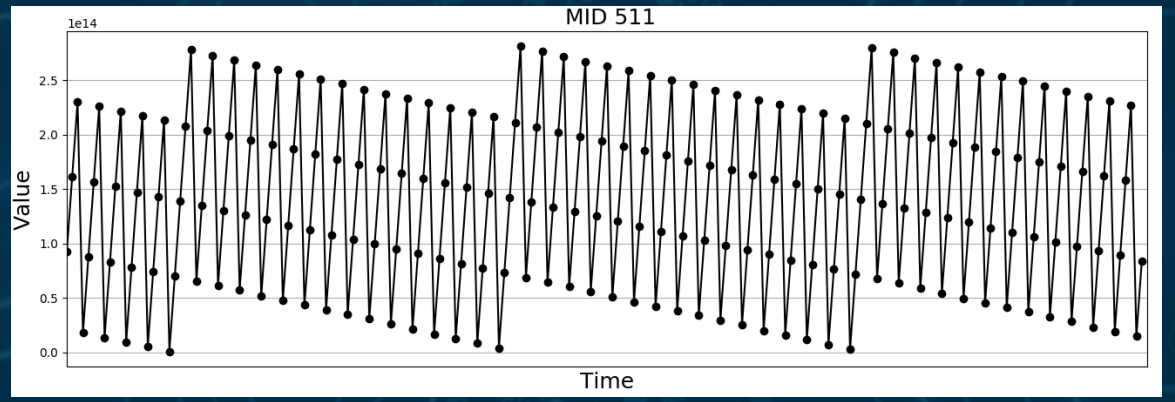


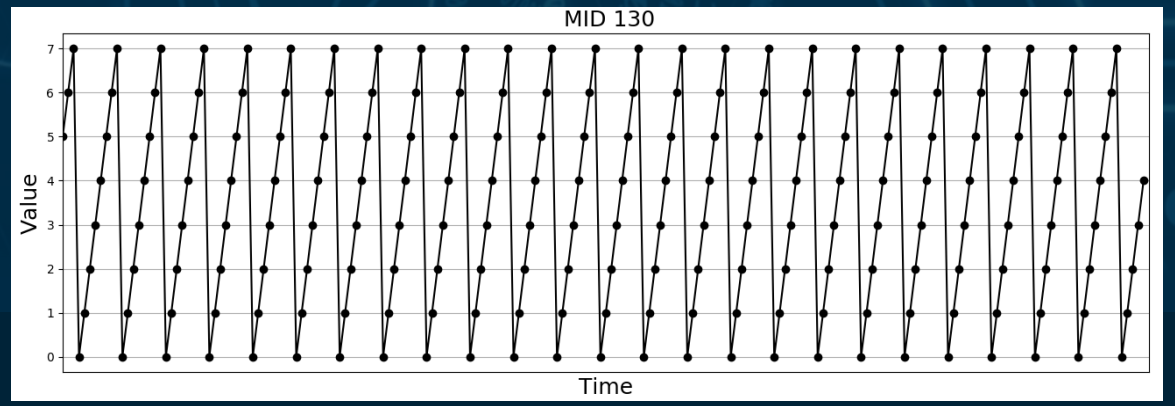




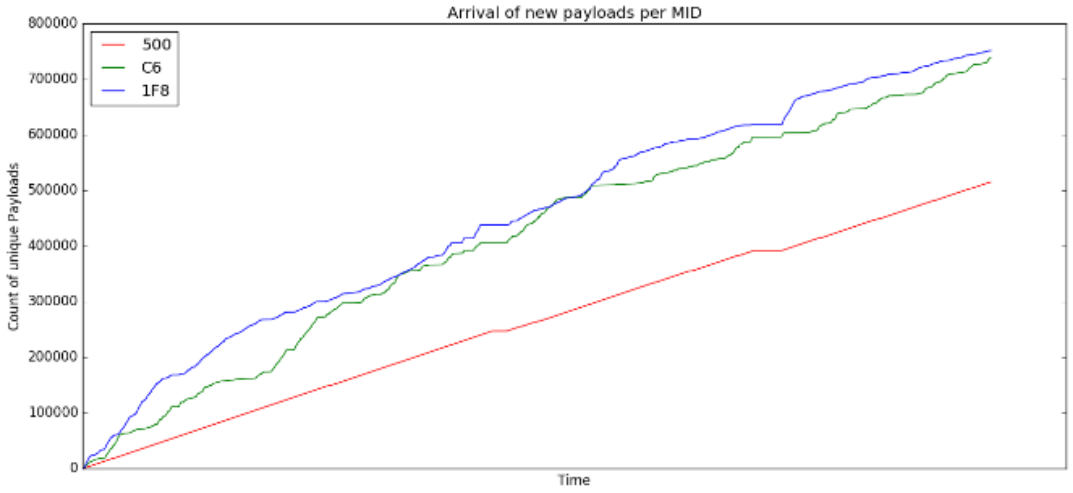
Periodic values

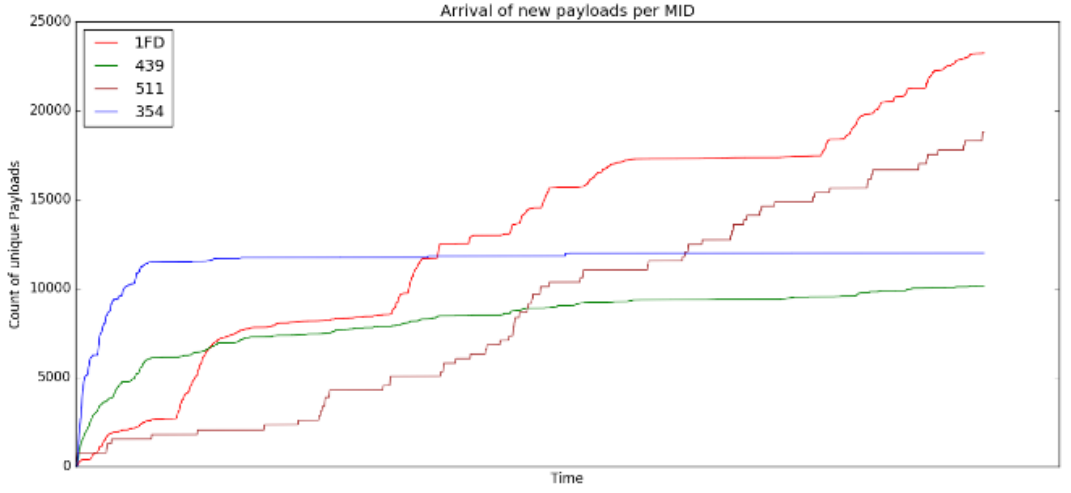


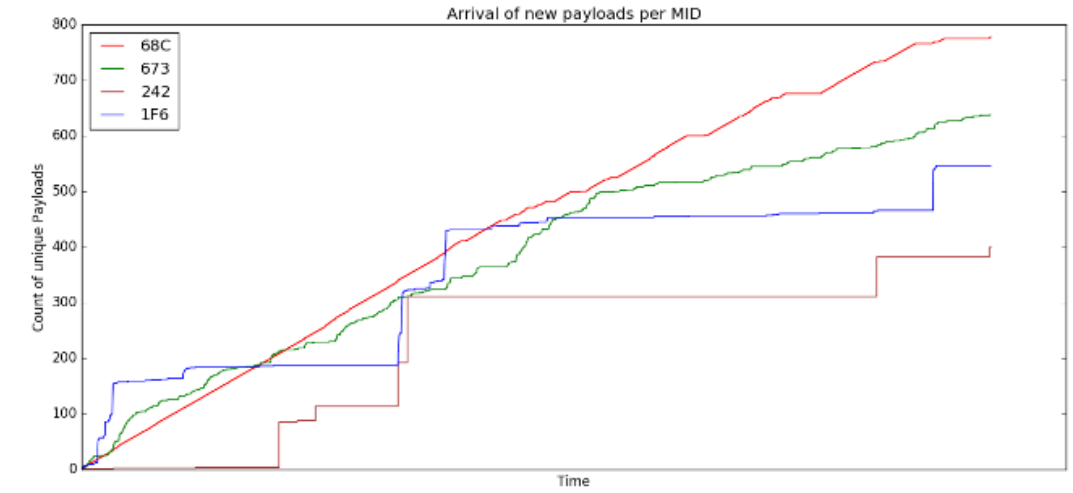


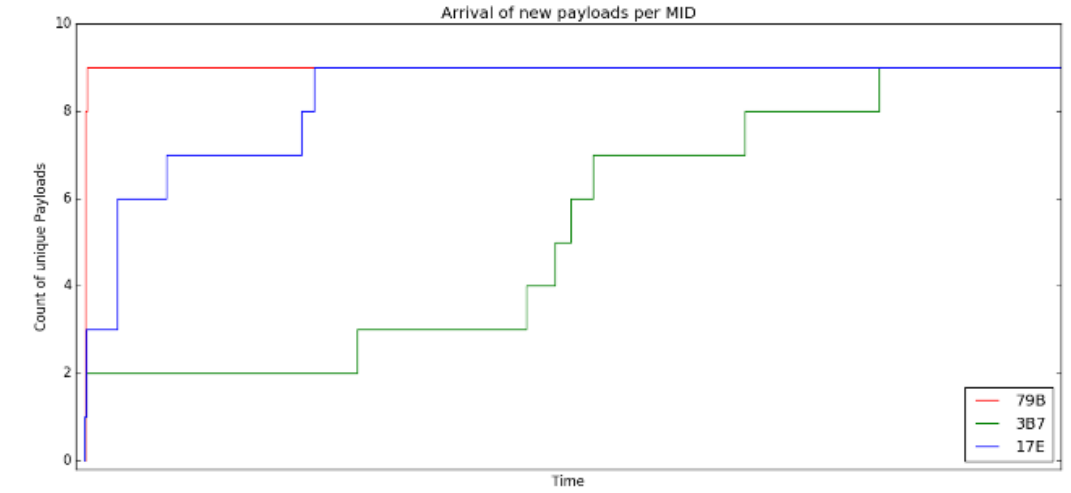


Discrete values

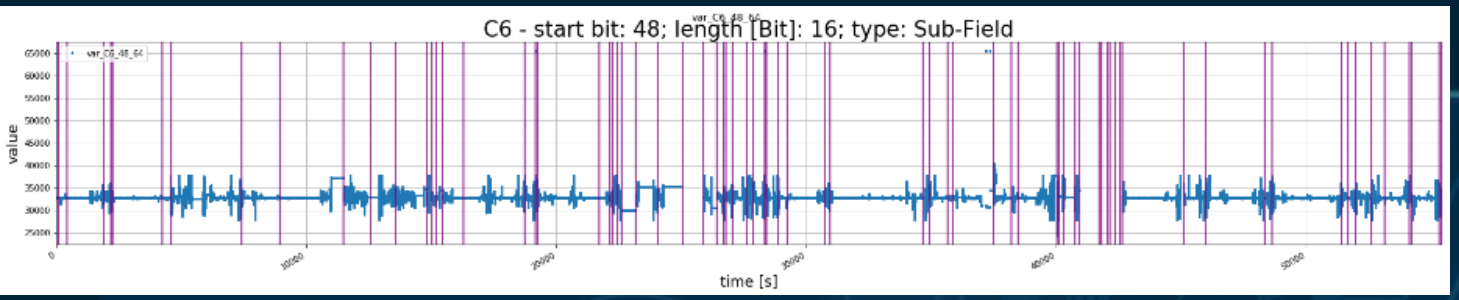


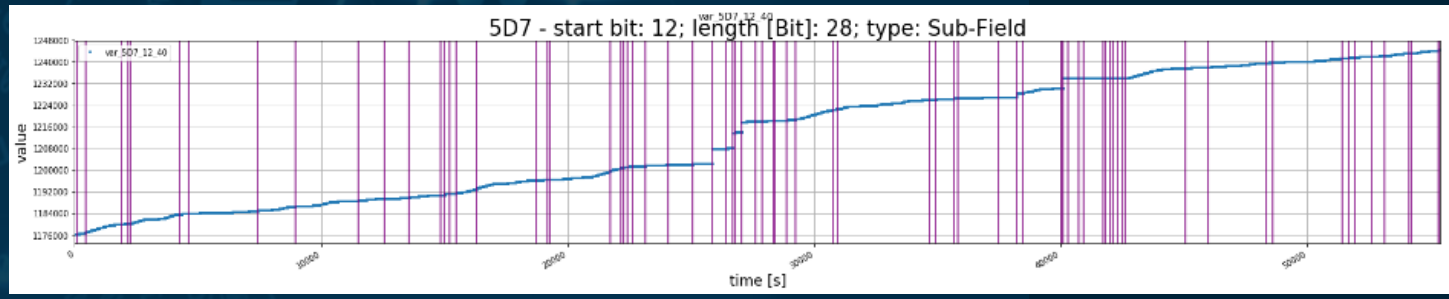


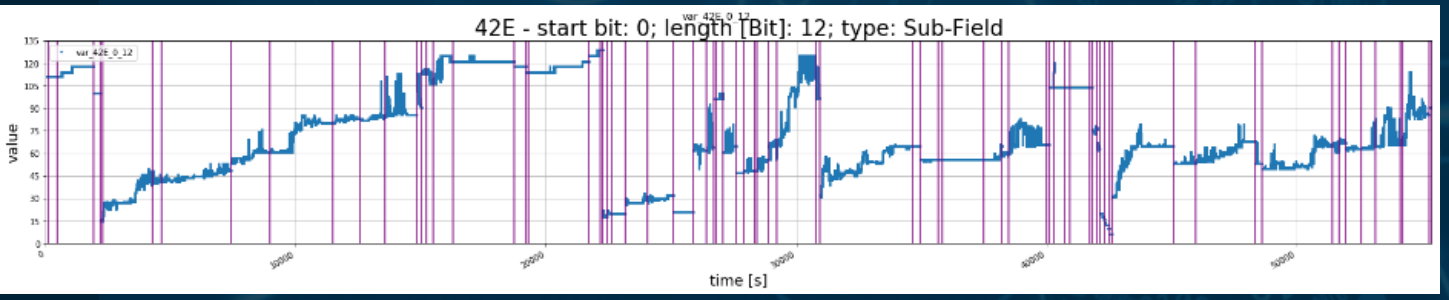


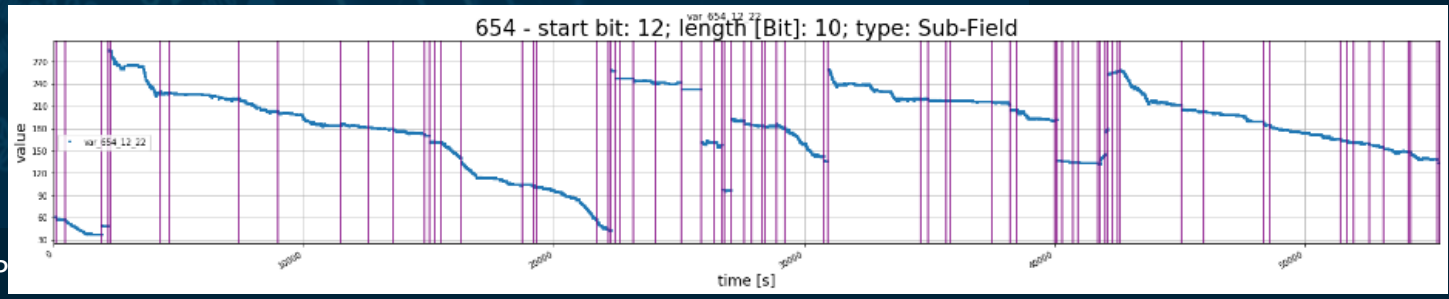


Variables analysis

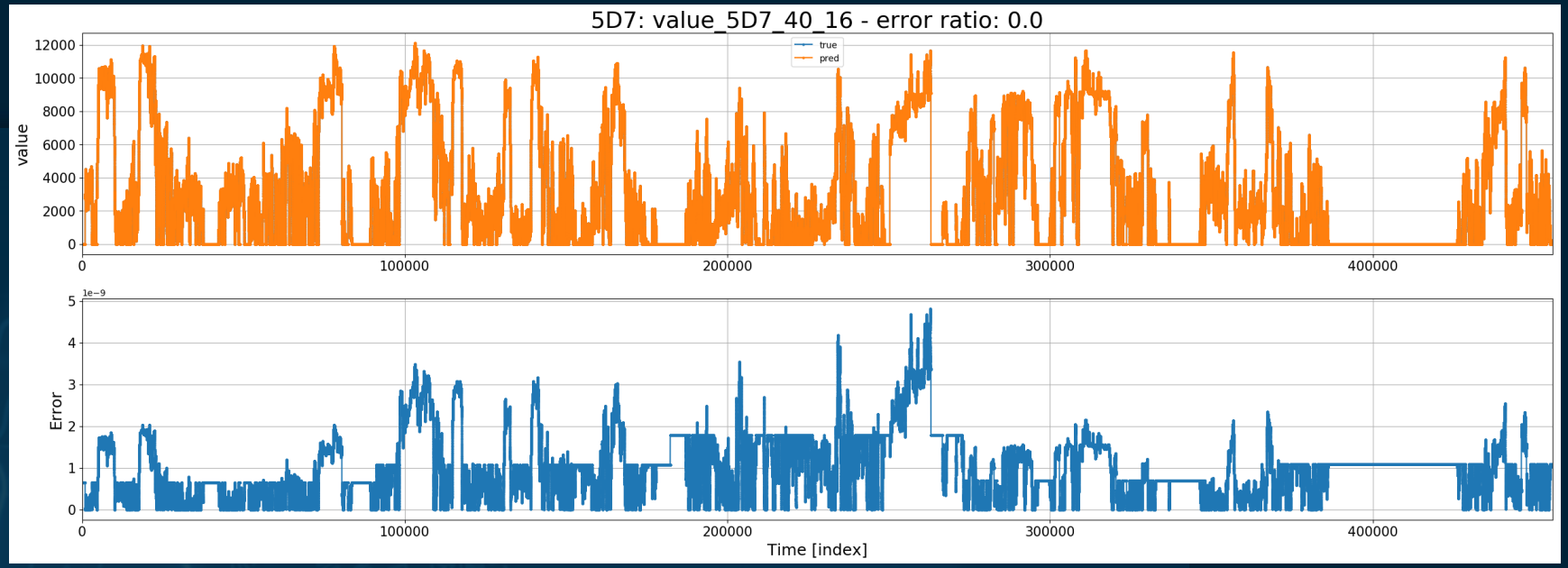


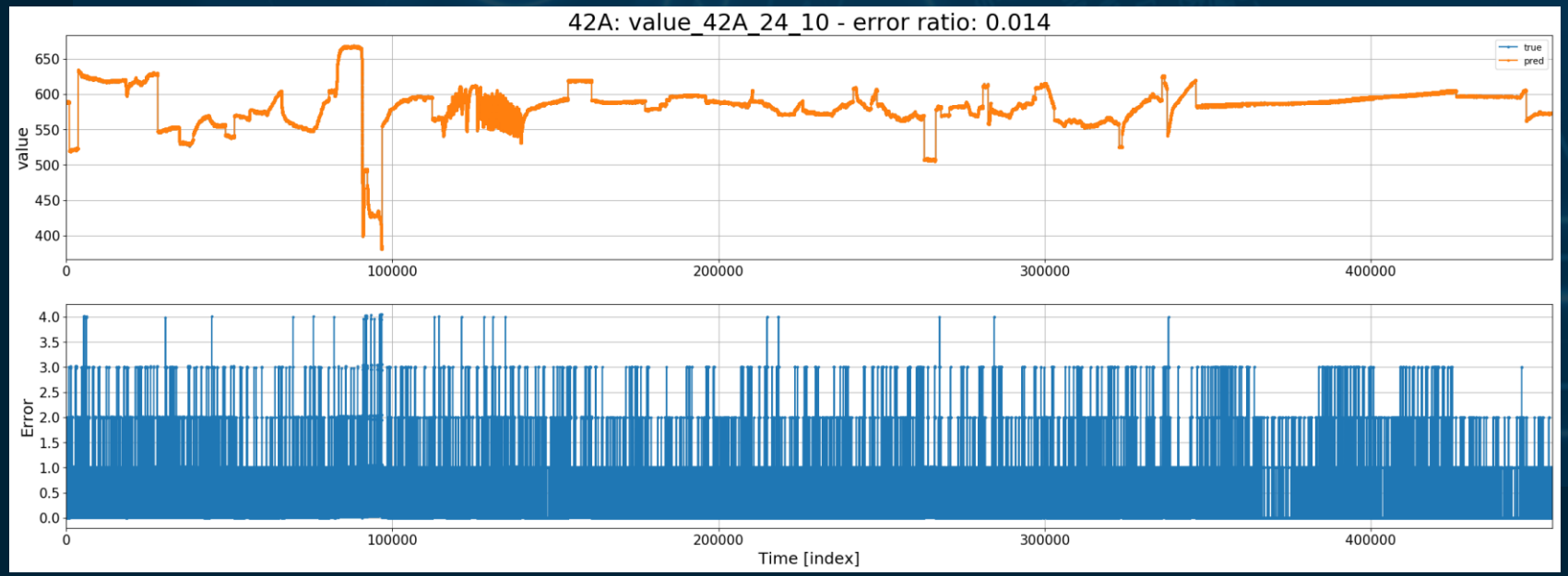




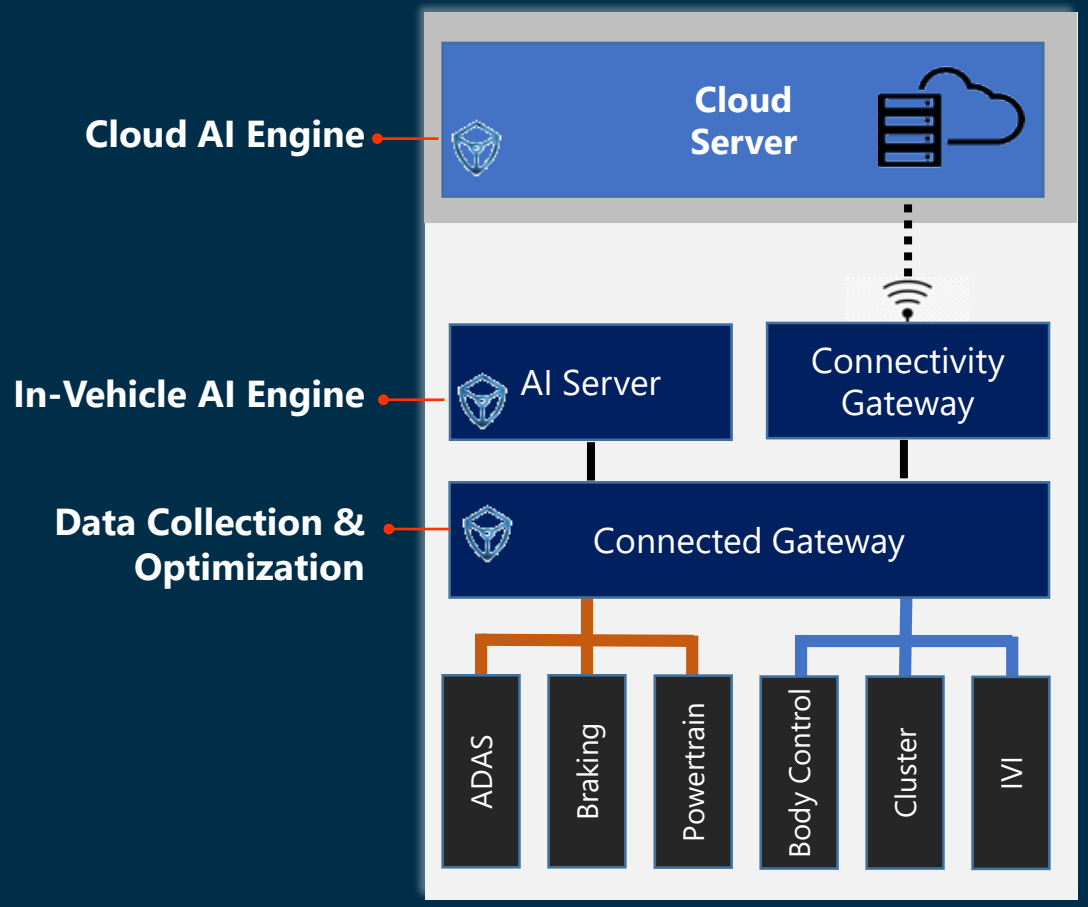


Variables prediction





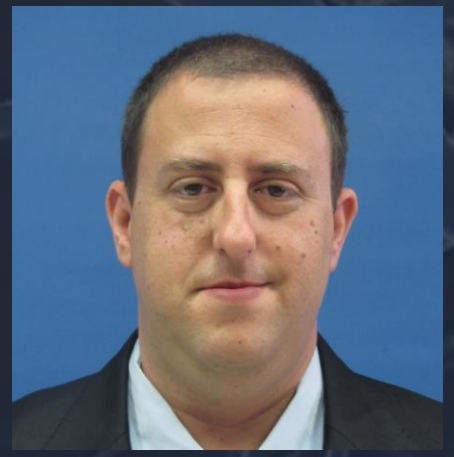
AI Algorithms Deployment Options



vSentry AI algorithms can run in-vehicle on an AI Server (e.g. NVIDIA Drive) or on the cloud, or in a hybrid model

Data collection is done on a central gateway.

Data can be distributed to a local AI server and a cloud server



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Drive your business safely

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BACKUP