Sprint 2 review

OBD II Data collection

Data collection performed using the app

Data transmitted and collected over Wi-Fi

Acquired sufficient data to begin analysis

Collecting classified data

DRIVING STYLES (AGGRESSIVE, MILD, PASSIVE)

ROAD TYPE (FREEWAY, MAIN, LOCAL)

Automating data collection

Raspberry Pi used for data collection

Raspberry Pi uploads the CSV file to FastAPI server (Huggingface).

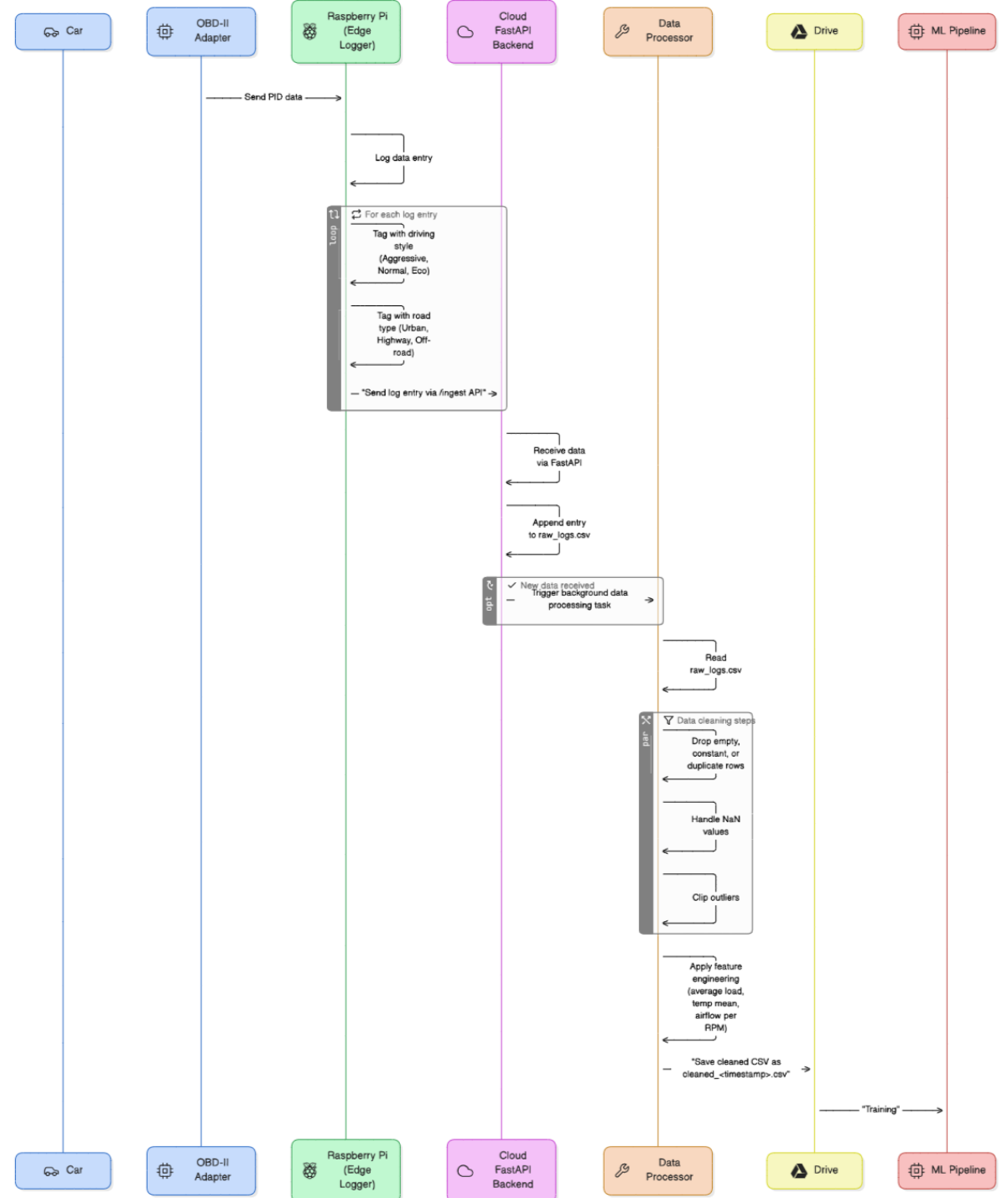Cloud server process and store data in Google Drive automatically.

Automated Data Logging

- Raspberry Pi 3B+ with battery pack (battery life under evaluation)

- Might switch to a lower power consuming Zero W if necessary

- Using the Python-OBD library to save CSVs

- Bash script to poll SSIDs and automatically switch WiFi networks

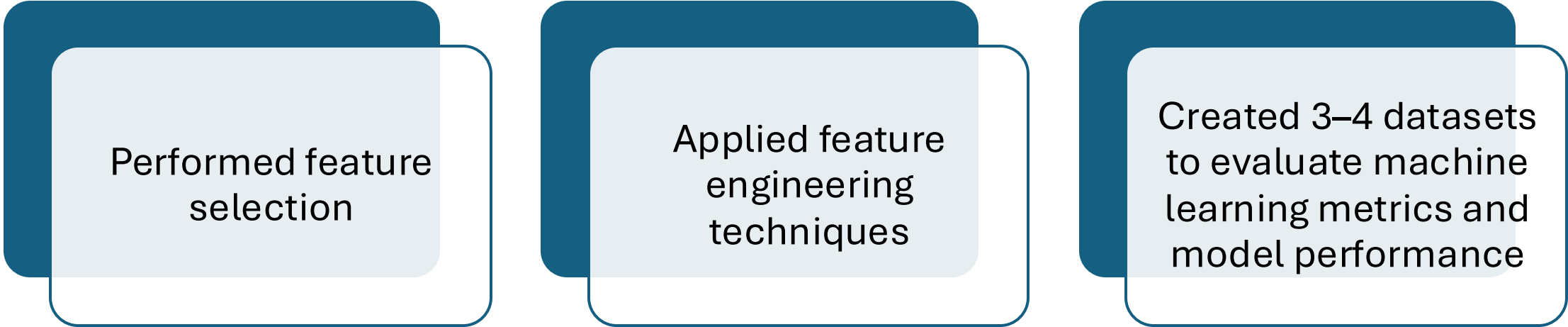- Dump CSVs to backend once connected to the internet

FastAPI Server Architecture

Hosted/Accessible from:
https://huggingface.co/spaces/BinKhoaLe1812/OBD_Logger/tree/main

Analyze the data

Performed feature selection

Applied feature engineering techniques

Created 3–4 datasets to evaluate machine learning metrics and model performance

Simple classification model

1 Predict driving style

2 Predict vehicle state

3 Predict both together