

Data Collection and Preprocessing Phase

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| Date | 6 July 2024 |
| Team ID | 740064 |
| Project Title | Trip-Based Modelling of Fuel Consumption in Modern Fleet Vehicles Using Machine Learning |
| Maximum Marks | 2 Marks |

Data Collection Plan & Raw Data Sources Identification Template

Elevate your data strategy with the Data Collection plan and the Raw Data Sources report, ensuring meticulous data curation and integrity for informed decision-making in every analysis and decision-making endeavor.

Data Collection Plan Template

| Section | Description |
|------------------|--|
| Project Overview | <p>Using machine learning and advanced data analytics, the Trip-Based Modelling of Fuel Consumption in Modern Fleet Vehicles project seeks to increase fleet management fuel efficiency. By analyzing historical trip data which includes factors like traffic conditions, topography, vehicle load, and driver behavior the research develops predictive models that accurately predict fuel use for future travels. By using these models, fleet managers may optimize routes, change their driving patterns, and make well-informed decisions that result in significant fuel and operating expenditure savings.</p> <p>The project makes a substantial contribution to modern fleet management by guaranteeing smooth deployment and thorough reporting through integration with current fleet management systems.</p> |

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| Data Collection Plan | The data collection plan calls for obtaining information on vehicle specifications, trip characteristics, and driver behavior in addition to telemetry data (GPS, distance, speed, fuel usage) from onboard devices and external data (traffic, weather, and route kinds) via APIs. A centralized database will house all of the data that is continuously gathered and kept for use in real-time analysis and model training. Data relevance and accuracy will be ensured by routine validations and updates. |
| Raw Data Sources Identified | Raw data sources typically identified for predicting the fuel consumption for a trip include collecting vehicle telematics data (GPS coordinates, speed, acceleration, fuel consumption rates), and trip specifics (start/end times, distances, routes). Additionally, external data such as traffic conditions, weather reports, and road types will be gathered to enhance model accuracy with machine learning models for accurate fuel predictions |

Raw Data Sources Template

| Source Name | Description | Location/URL | Format | Size | Access Permissions |
|-------------|-------------|--------------|--------|------|--------------------|
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| Drive Dataset | Raw data sources typically identified for predicting the fuel consumption for a trip include | https://drive.google.com/file/d/1TEeljX_56Qk0Cz_43O3eA0oTHNzl8jih/view?usp=sharing | measurements.xls | (124.93 kB) GB | Public |
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