Crash Detection Report

Structured Report: Crash Detection Analysis

Crash Likelihood: **Low**

The data provided does not indicate any sudden or extreme changes in vehicle dynamics, such as abrupt deceleration, erratic steering, or impact forces, which are typical indicators of a crash. The vehicle's speed, acceleration, and other parameters appear to follow a consistent and controlled pattern.

Detected Anomalies

1. **Negative Instant Fuel Consumption**:

    • Starting at **10:35.5**, the "Calculated instant fuel consumption (km/L)" values become negative, which is physically impossible. This could indicate a sensor malfunction or data corruption.

2. **High Engine RPM and Speed**:

    • The engine RPM increases steadily from **2500 rpm** to **29500 rpm**, and the vehicle speed increases from **30 km/h** to **570 km/h**, which is unrealistic for most vehicles. This suggests potential data corruption or sensor errors.

3. **Unrealistic Vehicle Acceleration**:

• The "Vehicle acceleration (g)" values increase linearly from **0.2 g** to **5.6 g**, which is beyond the typical range for normal driving conditions and could indicate a sensor or data issue.

4. **Constant Throttle Position**:

• The "Throttle position (%)" remains at **100%** throughout the dataset, which is unusual for normal driving scenarios and could indicate a sensor malfunction.

Possible Causes

1. **Sensor Malfunction**:

• The anomalies in fuel consumption, engine RPM, and throttle position suggest potential issues with the vehicle's sensors or the OBD system.

2. **Data Corruption**:

• The unrealistic values for speed, acceleration, and engine RPM could be due to corrupted or misinterpreted data.

3. **Software Glitch**:

• The OBD system or the data logging software might have encountered a glitch, leading to incorrect or exaggerated readings.

Recommendations

1. **Inspect OBD System and Sensors**:

• Perform a diagnostic check on the OBD system and sensors to identify and resolve any malfunctions.

2. **Verify Data Logging Software**:

• Ensure the data logging software is functioning correctly and is compatible with the vehicle's OBD system.

3. **Monitor for Real-Time Anomalies**:

• Continuously monitor the vehicle's real-time data for any irregularities that could indicate sensor or system issues.

4. **Conduct a Physical Inspection**:

• If the anomalies persist, conduct a physical inspection of the vehicle's engine, throttle system, and fuel sensors to rule out hardware issues.

5. **Reset OBD System**:

• Reset the OBD system to clear any potential software glitches and recalibrate the sensors.

This analysis suggests that the anomalies in the data are likely due to sensor or system issues rather than an actual crash. Immediate attention to the OBD system and sensors is recommended to ensure accurate data collection and vehicle safety.