Abstract

IoT Cloud based Optimization of Vehicle Using Monitoring Systems
20 February 2020 (IEEE)
https://ieeexplore.ieee.org/document/9002241

This paper proposes advancements to vehicle monitoring systems using data gathered from onboard sensors and modules. The proposed system consists of a processing unit, sensors unit, storage unit, and communication unit with components like weight sensors, GPS, speed measurement, and real-time clock. Data is stored locally and in the cloud. An Ishikawa diagram analysis identified root causes of rider problems. Based on this, solutions are proposed including current fuel price display, audio communication of custom details, fingerprint unlocking, mileage indication, automatic maintenance updates, and an economic travel assistant. A related survey is also described. The advancements aim to optimize vehicles and improve the rider experience using real-time monitoring data.

A Real Time Implementation of an IOT based Vehicle Health Monitoring System

September 2021 (IJRTE**)**

https://www.ijrte.org/wp-content/uploads/papers/v10i3/C63380910321.pdf

This paper proposes an IoT-based embedded system to monitor vehicle health in real-time by detecting internal parameters like heating rate, engine oil level, and carbon monoxide levels. The system automatically identifies actuator and sensor faults to ensure timely vehicle maintenance. By evaluating key parameters, it examines the current vehicle condition and provides reliable information with minimal detection latency, even amid disturbances. The primary objective is to develop a rapid fault detection system to improve vehicle safety and prevent issues arising from lack of maintenance. The IoT-based approach enables real-time monitoring of vehicle health through an embedded platform.

VEHICLE HEALTH MONITORING SYSTEM WITH IOT APPLICATIONS

9 September 2022 (www.ijcrt.org)

https://ijcrt.org/papers/IJCRT2209116.pdf

This paper develops an automotive embedded system that acts as a communication network between various vehicle subsystems. It gathers real-time sensor and actuation data from monitored subsystems during operation. This data is analyzed by software algorithms to monitor vehicle health parameters, provide predictions, insights and critical recommendations. The system doubles as a data acquisition model that can integrate machine learning and cloud computing techniques for monitoring material aging, subsystem lifecycles, fleet management,

and performance degradation. It offers a local display for the driver and an IoT platform for data storage and visualization. The embedded system enables comprehensive vehicle monitoring and maintenance through centralized data collection and analysis from disparate subsystems.

IoT based Vehicle Monitoring System using Bluetooth Technology

3, March 2017 (www.ijirset.com)

https://www.ijirset.com/upload/2017/march/269_IoT.pdf

This paper proposes an IoT-based vehicle monitoring system that leverages wireless sensor networks and traffic light infrastructure in urban areas. The system addresses the issue of excessive vehicle emissions due to improper maintenance by facilitating daily engine health monitoring. When vehicles stop at red lights, an onboard unit wirelessly transmits real-time engine data via low-energy Bluetooth to the traffic light infrastructure. This IoT system collects and analyzes the data from vehicles at traffic signals, enabling monitoring of emissions and engine parameters. The proposed approach takes advantage of existing urban infrastructure and wireless communication to implement a simple yet effective vehicle monitoring solution without requiring dedicated sensors or networks. The system aims to promote proper maintenance and reduce emissions through continuous automated monitoring.

IOT BASED VEHICLE MONITORING SYSTEM

05, May 2017 (www.ijates.com)

http://www.ijates.com/images/short_pdf/1494827776_ijates128.pdf

This paper proposes a vehicle monitoring system that tracks critical parameters like tire pressure, engine temperature, fuel leaks, and fuel levels in real-time. The system aims to reduce accidents, improve fuel efficiency, braking performance, tire inflation, vehicle handling, and maintenance. It monitors issues such as unexpected tire failures, excessive fuel consumption, sudden fuel drops, and engine degradation. Controlled by a microcontroller with an embedded program, the system displays the parameters on an LCD screen for the driver and also sends alerts remotely via the Internet of Things (IoT). By continuously monitoring and reporting vital vehicle metrics both locally and remotely, the system enables proactive maintenance and enhances overall vehicle safety and efficiency.