

Custom Process for IoT-based Cable-stayed Remote Monitoring



Overview

This study focuses on the development and validation of an integrated framework combining Finite Element Modeling (FEM) with Internet of Things (IoT)-enabled Structural Health Monitoring (SHM) for cable-stayed bridges. A high-fidelity finite element model was created to simulate the dynamic and. ure. Thus, efficient and accurate monitoring of cable conditions is crucial. This paper presents a novel bridge cable condition monitoring system utilizing an integrated multi- ensor mobile robotic platform, modified by the DJI Robomaste EP (DJI 2022). Monitoring the structural health of cable-stayed bridges. In order to fulfill these purpose simultaneously, this study presents an autonomous cable monitoring system based on domain-knowledge using IoT for continuous cable monitoring systems of cable-stayed bridges.

Article Content

IoT-based remote patient monitoring systems

IoT-based remote patient monitoring systems help unlock superior patient outcomes & optimize operations. Know about its benefits, features, costs

Structural Health Monitoring of Cable Stayed Bridge

Conclusion Wireless structural health monitoring of a cable-stayed bridge requires the use of sensor modules to monitor the health of the bridge. These devices record the current conditions of

Remote Monitoring Using IoT for Real-Time Insights

IoT-based remote monitoring is the process of using internet-connected devices to collect data from a remote location for analysis.

Cable tension monitoring through feature-based video image processing ...

As a key indicator of the structural performance of cable-stayed bridges, tensile forces in stay cables are required to be controlled for maintaining the structural integrity of bridges. In this

Design and development of an IoT enabled platform for remote monitoring ...

This paper presents the design and development of a framework for the remote monitoring of RCSS based on the implementation of a Wireless Sensor Network (WSN) for data acquisition, and

RFID and CCTV-Based Material Delivery Monitoring for Cable-Stayed ...

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Autonomous Multi Sensor Robotic System for Bridge Cable Condition ...

This paper aims to provide reliable technical support for intelligent and efficient condition monitoring of bridge cables, promote the further development of structural health monitoring of bridge engineering,

What Is IoT Remote Monitoring? How Does It Work?

This guide explains what IoT remote data monitoring is, how it works, and why it's becoming increasingly popular in various industries.

Structural health monitoring methods of cables in cable-stayed bridge ...

Cables as the crucial components, its inspection is the key problem to ensure the safety of cable-stayed bridge. Study of the monitoring methods of cable tension has practical meaning to

Research on Cable Force Monitoring of Large-Span Cable-Stayed

This paper analyses the hierarchical structure and key technologies of the Internet of Things, studies the sensors for cable force collection, and proposes the scheme and engineering key

Finite element modeling and structural health monitoring of cable ...

A high-fidelity finite element model was created to simulate the dynamic and static behavior of a 500 m cable-stayed bridge, while an IoT-based sensor network comprising accelerometers, strain gauges,

Design and Realization of Intelligent Monitoring and Protection System ...

In order to improve the operational safety of cables in complex environments, this study designs a cable condition monitoring system based on Internet of Things

Structural Health Monitoring Methods of Cables in Cable-stayed

Study of the monitoring methods of cable tension has practical meaning to bridge stability. Firstly, this paper summarized static and dynamic theory of cables.

A novel wireless IoT sensing system for cable force identification and ...

By collecting and analyzing the acceleration signals of the bridge cable, the health status of the cable can be continuously monitored and evaluated. This paper provides a detailed description

The state of the art in structural health monitoring of cable-stayed ...

The applications of structural health monitoring technology for cable-stayed bridges are summarized. The design code for structural health monitoring systems is described for large highway

Vision-based identification of cable tensions and finite ...

The utilization of cables as primary load-bearing elements in structures is increasing due to advancements in material properties, analysis techniques, and construction processes. The

IoT Remote Monitoring and Management: Use Cases

Learn how IoT remote monitoring and management can streamline your deployment and provide actionable insights via a digital platform.

A non-contact vision-based system for multipoint

This study proposes a low-cost and non-contact vision-based system for multipoint displacement measurement based on a consumer-grade camera for

Research on Stay Cable Tension Estimation Based on

This study presents the development of a non-contact, vision-based monitoring system utilizing computer vision technology for monitoring cable

Streaming-based mechanical digital twin for lifecycle health monitoring ...

ABSTRACT: Traditional IoT-based health monitoring systems for cable-stayed bridges can integrate multisource sensor data but often lack direct interaction with finite element (FE)

A novel wireless IoT sensing system for cable force identification and ...

This study proposes a novel IoT device for cable force monitoring and identification that incorporates 4 G and edge computing technologies. The IoT device is developed and designed

IoT remote monitoring: benefits, use cases & how to scale

Explore how IoT remote monitoring works, where it's delivering value across sectors, and what enterprises need to consider before scaling deployments.

Remote IoT Monitoring System

What is IoT remote monitoring? The Internet of Things (IoT) remote monitoring technology uses internet-connected sensors and devices to enable remote management and

Review of Monitoring and Control Systems Based on

The article presents an overview of monitoring and control systems based on the Internet of Things. The authors discuss various aspects of these

Stay cable tension estimation using a vision-based

Addressing the challenges faced by existing vision monitoring technologies in complex environments, such as limited camera resolution, low

Vision-based monitoring system for evaluating cable

Therefore, in this study, a vision-based monitoring system that utilizes an image processing technique was developed to estimate the tensile force of

IoT Remote Monitoring Explained: Benefits you can't ignore

IoT-enabled remote monitoring systems offer live alerts and threshold-based warnings, so teams can take quick action, when needed. It also

Development of Autonomous Cable Monitoring System of Bridge

In order to fulfill these purpose simultaneously, this study presents an autonomous cable monitoring system based on domain-knowledge using IoT for continuous cable monitoring systems

Wireless Structural Health Monitoring (SHM) for Cable-Stayed Bridges

To ensure bridge safety, many types of sensors must work together to capture tension in cables, as well as monitor pylons and deck stability. This setup must also recognize any structural changes to

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