

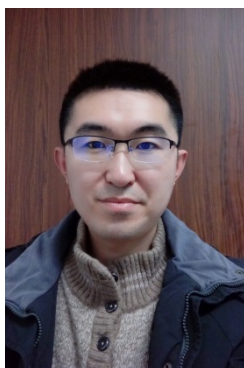


Big Data Based Daily Maintenance and Inspection System of Bridges

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Summary

The inspection systems of routine maintenance of bridges based on big data which are discussed in actually applied in this paper, the typical bridges, such as Aixi Lake Bridge in Nanchang, Hero Bridge and so on are used practically with good effects. The using features and applicability of products are enhanced to further realize achievement transformation. The appearance and the status of bridges are collected and arranged by this system to evaluate working conditions of bridges in future, to point out a possible developing trend, to provide suggestions for bridge maintenance in future, to provide accurate and comprehensive data for the bridge reinforcement and reconstruction.

Keywords: Bridge; Big data; Maintenance; Inspection.

1. Introduction

In the government work report, the subject of “Internet” + “Action plan” was proposed firstly by Premier Li Keqiang at the Third Session of the Twelfth NPC in early 2015. The major projects of high-end equipments, information networks, integrated circuits, new energy, new materials, bio-medicine, aero-engines, gas turbines are implemented, and the emerging industries are cultivated as the leading industries to ensure social safety and further improve the quality of people's lives.

The roads and bridges in China are being gradually turned from the construction phase to operational phase, which focuses on repairing and conserving to ensure the safety of road and bridge structure. Due to the change of service life, traffic volume and class of loading, as well as the influence of natural factors, overloading factors, a large number of bridge structures especially urban roads and bridges have been damaged. Nineties of the last century, especially a large number of urban bridges were built, many of which have appeared in cracking damage and down warping of mid span, then the safe operation of the bridges are threatened by above damages, and the real-time detection and objective evaluation of the conditions of the bridge will be carried out in need. The periodic manual detection and evaluation are mainly dominated in the maintenance management of urban roads at present, the damages are hard to be found timely and maintained effectively and timely due to the lack of specialized equipment and relevant experience[1]. However, the damages will be found timely and maintained effectively and timely by implemented this topic, and the effective monitor and management of the transport network in the whole of urban roads will be implemented too, which has great realistic meaning and brings social and economic benefits[2].

The inspection systems of routine maintenance of bridges are discussed in this paper to provide the appropriate equipment modules and rapid detection method by using modernization of the