IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 5, November 2024

ML Driven Predictive Maintenance and Life Span Detector for Bridges

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Abstract: *The safety and lifespan of bridge infrastructure are plays an important role ensuring public safety, better transportation, reducing incident Managing economic stability. This paper presents software model designed to predict the durability, remaining lifespan and maintenance when needed of bridge by using the advance technologies, including the computer vision techniques, Internet of Thing (IoT) sensors and machine learning algorithm. Our software aims to reduce the number components related of bridge failure by assessment system that utilizes historical records and real-time data.*

By using the computer vision technique and non-destructive testing to find structure problems. Also by using machine learning algorithm based on the environmental condition and daily traffic load on bridge to check the durability of bridge.

The proposed system operates efficiently and it has four phase: user interaction, historical records, and real-time data gathering predictive analysis which generates detail report of bridge condition. By finding bridge condition and durability and effective use of ML algorithms in bridge infrastructure, provide the proactive solution to bridge maintenance challenges

Keywords: Predictive Maintenance, Machine Learning, Computer Vision, Internet of Things (IoT), Non-Destructive Testing, Life Span Assessment, Real-Time Monitoring

DOI: 10.48175/IJARSCT-22416