

Predictive Maintenance for Construction Equipment using Artificial Intelligence and Machine Learning

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Abstract: *Efficient maintenance of construction equipment plays an essential role in ensuring optimal functionality, reducing downtime, and enhancing safety on job sites. Playing Artificial Intelligence (AI) and Machine Learning (ML) techniques in construction equipment maintenance introduces a standard shift in traditional maintenance strategies. This paper explores the application of AI and ML algorithms in predictive maintenance, fault detection, and condition monitoring of heavy machinery used in construction. By harnessing data-driven insights, these technologies enable real-time monitoring of equipment health, facilitating timely identification of potential failures or performance degradation. Furthermore, the integration of AI-driven maintenance systems optimizes equipment utilization, minimizes unplanned downtime, and enhances overall operational efficiency. This research underscores the significance of AI and ML methodologies in developing construction equipment maintenance, paving the way for cost-effective, proactive, and predictive maintenance strategies in the construction industry*

Keywords: Artificial Intelligence, Machine Learning, predictive Maintenance, Construction Equipment, Maintenance Strategies

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