Developing Intelligent Systems for Predictive Maintenance in Industrial Environments

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Abstract. This study explores the development of intelligent systems aimed at optimizing predictive maintenance in industrial settings. By employing machine learning algorithms and real-time data analysis, these systems can predict equipment failures before they occur, thus reducing downtime and maintenance costs. The paper discusses various models and methodologies, providing insights into implementing these technologies for enhanced operational efficiency.

Keywords: predictive, maintenance, industrial, machine, learning

Introduction: Predictive maintenance is an increasingly important aspect of modern industrial management, with intelligent systems playing a crucial role in its evolution. By predicting potential equipment failures before they happen, businesses can significantly reduce maintenance costs and downtime. This paper examines the integration of machine learning algorithms into maintenance processes, focusing on real-time data analysis and system optimization. Various predictive models are evaluated for their effectiveness in industrial applications, offering a roadmap for future developments. The findings demonstrate that intelligent systems greatly enhance predictive capabilities, leading to more efficient and cost-effective maintenance strategies.

References

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