VISVESVARAYA TECHNOLOGICAL UNIVERSITY
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A PROJECT REPORT ON

PREDICTION OF MACHINE FAILURE

Submitted in partial fulfilment for the award of Degree of,

BACHELOR OF ENGINEERING

IN

INFORMATION SCIENCE AND ENGINEERING

By

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CERTIFICATE

This is to certify that the project entitled **"Prediction of machine failure"** has been successfully

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the bonafide students OF DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING, Alva's Institute of Engineering and Technology, Moodbidri affiliated to VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the academic year 2023–24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed in partial fulfillment of awarding Bachelor of Engineering degree.

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ABSTRACT

In the realm of industrial operations, machine failure represents a significant challenge, often leading to costly downtime and maintenance. The advent of data mining techniques offers a promising avenue for predicting machine failures, thereby facilitating proactive maintenance strategies. This study explores the application of data mining methodologies for the prediction of machine failures. By leveraging historical maintenance data, sensor readings, and operational logs, we develop predictive models using algorithms such as decision trees, random forests, and neural networks. Our approach emphasizes the importance of feature selection and data pre-processing in enhancing model accuracy. The results demonstrate that data mining techniques can effectively identify patterns and anomalies indicative of impending machine failures, providing a robust framework for predictive maintenance. This predictive capability not only improves machine reliability and efficiency but also optimizes maintenance schedules, reducing operational costs and minimizing downtime. Future work will focus on integrating real-time data streams and exploring advanced machine learning techniques to further refine prediction accuracy and extend applicability across diverse industrial contexts.