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Predictive Analytics for Maintenance

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Abstract: *We present the development of a machine learning-based predictive maintenance tool tailored to the industrial industry. Predictive maintenance and operational optimization have turned manufacturing into a manufacturing revolution because to machine learning's capacity to learn from data and generate precise predictions. 96% accuracy was attained in the initial training of a K-means clustering model. An algorithm known as Random Forest was used to increase forecast accuracy, and the outcome was a very good 98% accuracy. Thus, it was decided to apply the Random Forest model. With Flask, a predictive maintenance web interface was created, and the learnt model was easily included to provide real-time predictions. Through dramatically lower equipment downtime and improved operational efficiency, this application highlights the value of machine learning in predictive maintenance in industrial settings.*

Keywords: Equipment Downtime, Machine Learning, Operational Optimization, Predictive Maintenance, Random Forest