Predictive Maintenance of Electrical Induction Motors Using Machine Learning

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Abstract : This study proposes an approach for electrical induction motor predictive maintenance utilizing machine learning algorithms. On the basis of a study of temperature data obtained from sensors put on the motor, the goal is to predict motor failures. The proposed models are trained to identify whether a motor is defective or not by utilizing machine learning algorithms like Support Vector Machines (SVM) and K-Nearest Neighbors (KNN). According to a thorough study of the literature, earlier research has used motor current signature analysis (MCSA) and vibration data to forecast motor failures. The temperature signal methodology, which has clear advantages over the conventional MCSA and vibration analysis methods in terms of cost-effectiveness, is the main subject of this research. The acquired results emphasize the applicability and effectiveness of the temperature-based predictive maintenance strategy by demonstrating the successful categorization of defective motors using the suggested machine learning models.