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AI-Assisted Fault Diagnosis in Three-Phase Induction Motors Using Vibration Spectral Analysis

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ABSTRACT

Early detection of bearing and stator winding faults in industrial three-phase induction motors is essential for preventing unplanned downtime. This manuscript presents a Convolutional Neural Network (CNN) model trained on Fast Fourier Transform (FFT) vibration spectrograms.

Keywords: Induction Motor, Fault Diagnosis, Vibration Analysis, Deep Learning, Predictive Maintenance

1. INTRODUCTION

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