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Industrial Motor Fault Detection System using AI

Dr. Kannammal K E[1], Suhetha D[2], Sanjay A K[3], Yaswanth N[4], Varun M[5]
Head of the Department, Department of Computer Science and Engineering[1]
Student, Department of Computer Science and Engineering[2-5]
Sri Shakthi Institute of Engineering and Technology, Coimbatore, Tamil Nadu, India
hodcse@siet.ac.in, sukidharma2506@gmail.com, sanjaycrizz10@gmail.com
yaswanth4903@gmail.com, varunm@gmail.com

Abstract: *This project presents an Induction Motor Fault Detection System using Convolutional Neural Networks (CNN) to improve maintenance in industrial environments. Induction motors are vital for productivity but are susceptible to faults that can cause costly downtime. The proposed system uses audio signals from motors, captured under normal and faulty conditions, and converts them into spectrograms via Short-Time Fourier Transform (STFT). A CNN is trained on these spectrograms to accurately classify fault types. The model can then analyze new audio data in real time, enabling early fault detection. This approach enhances motor reliability, minimizes downtime, and supports predictive maintenance, showcasing the potential of audio-based diagnostics and machine learning in industrial applications.*

Keywords: Fault Detection System

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