

A Literature Review on Predicting and Analyzing of Bearing Faults using Machine Learning Approach

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Abstract: Bearing failure detection/diagnosis is heavily reliant on vibration signal analysis, and bearings frequently operate under rotational speed conditions that change over time. This paper includes a study based on vibration data obtained from bearings in various states of health and operating at different speeds. The bearing's condition ranges from good to bad, with the inside flaw and an exterior flaw. About the dataset's rotational speed operating parameters are accelerating rotational speed, deaccelerating rotational speed, speeding up and then slowing down, and slowing down and speeding up. The information gathered can be used to investigate the frequency response of bearings in various states of health under time-varying speed conditions. Through ML models for fault identification, the data can also be used to assess the effectiveness of any newly developed bearing defect diagnostic or condition monitoring technology in time-varying speed situations.

Keywords: Rolling Element Bearing, Time-varying Rotational speed, Bearing failure detection, Vibration signal analysis, Defect diagnostic.

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