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Building model of processing and identifying engine vibration signal

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he advancement of the sensor technology becoming increasingly cost-effective and the progress in diagnostic and management research, users nowadays not only demand high reliability from their devices but also the ability for their equipment to self-diagnose errors and provide alerts. These devices often incorporate sensor systems capable of generating tens of thousands of data points per minute, that needed a carefully targeted algorithms for extracting features from the data for classification and prediction models. In this paper, we will develop a comprehensive model for identifying vibration signals. We will extract features from the bearing data provided by Case Western Reserve University (CWRU) Bearing Data Center [1], then use a deep-learning based convolutional neural network to learn to be a classification model of the motor states based on the vibration signals. The numerical results show that the method can offer the promising accuracy at 85.8%.

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