عنوان مقاله:

Identification of Size and Location of Bearing Damage via Deep Learning

محل انتشار:

نشریه بین المللی قابلیت اطمینان، ریسک و ایمنی: نظریه و کاربرد, دوره 4, شماره 1 (سال: 1400)

تعداد صفحات اصل مقاله: 6

نویسنده:

Mohammad Ali Farsi - *Aerospace Research Institute*

خلاصه مقاله:

Rotating machine is one of the most important machines used in various sectors. The most important unit is the rotating part and the shaft held by bearings. Most of the maintenance and repair cost of these machines is related to the replacement and service of bearings. Therefore, it is very important to identify the damaged bearings and determine the location of the damage. Different methods have been developed to monitor their condition, including recording and analyzing the vibration signals of bearings. So far, vibration-based methods have often been used to analyze them. Recently, the use of machine learning and deep learning techniques have been considered. Therefore, in this paper, a convolutional neural network is developed that directly receives the raw information recorded by vibration sensors as input and after analysis, a healthy bearing is detected from a defective one, the location and size of the damage are determined. In this research, the data set of Case Western Reserve University is used to validate .the model and the results show that the proposed model has very high accuracy for analysis of samples

کلمات کلیدی:

Rotary Machine, Bearing, fault detection, Reliability, Deep Learning, convolutional neural network