

6. Conclusion

In this paper, a technique for Multiple Fault Detection in a two stroke, Hero Honda Passion four stroke and Maruti Suzuki Alto Automobile Engines using sound signal has been proposed. Fault detection has been carried out only for six different faults. The main advantage of this system is its simplicity, low cost and compactness having a single sensor system. From the meticulous analysis using statistical and ANNs classifier, it is learned that ANN classifiers are more appropriate for fault diagnosis. The comparative analysis of 10 different Artificial Neural Networks depicts that the classification Accuracy of MLP and SVM are found to be greater amongst the group of ANNs used for the analysis. Also, the classification accuracy of two hidden layer-MLP is found to be greater than that of one hidden layer. It is also depicted that the 2HL MLP NN and SVM NN can be used as reasonable classifier for multiple fault detection in a two stroke, four stroke automobile engine and Maruti Alto engine. However, SVM NN classifier is seen to be more appropriate classifier for two stroke, Hero Honda Passion four stroke and Maruti Suzuki Alto Automobile Engines as its classification accuracy is much higher than other classifiers.

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