# *ABSTRACT*

*Intensive research in the field of signal processing has led to the rapid development of communication technologies, including speech recognition. The concept of speech recognition can be applied in various fields to solve various problems, including the speech recognition of motorcycle pistons before service and after service. In this study, there are 2 types of motorcycle piston sounds that can indicate the type of damage. There are still many riders who do not understand the damage to the motorcycle engine. Therefore, this research will be able to detect through the sound of a motorcycle piston. This study uses the Back Propagation Neural Network method for the classification process of piston sound types. The data that will be used is the sound recording of motorcycle pistons. The number of sound recording files used in this study obtained 53 sounds of piston recordings. This study uses order 8, order 10, order 12, order 14, order 16 and target values 1 and 0. From each order, the recorded data is processed using LPC feature extraction to obtain characteristic values from the process of frame blocking, windowing, autocoroleation analysis and LPC analysis. The results obtained are tested by neural network tools to get the classification. The results of the best network classification obtained the mse value of 0.8093 with a target of 1 and the mse value of 0.0049 with a target of 0. The results that are close to the target value are said to be the best results in data testing.*

***Keywords:*** *clasification, backpropagation neural network, frame blocking,windowing,analisis autocorelation, analisis lpc, mse.*