

ABSTRACT

At this time a lot of worries felt by parents, especially those who have toddlers to always be vigilant. Toddler crying is a form of communication that experiences a problem. Cries can be characterized according to their periodic nature, namely the tone of the scream and the change of sound. Crying sound usually has a base frequency (pitch) of 250-600Hz. This is the focus of the writer in analyzing and detecting sounds from toddlers. The study of speech recognition has two main processes, namely extracting the characteristics of the sound obtained and classifying or determining the pattern of the sound. The number of methods available, so the choice of sound analysis method uses the Mel-Frequency Cepstrum Coefficient (MFCC) algorithm to identify and detect the characteristics of toddlers crying. This method is able to work like a human hearing in providing perception of the sound being heard. Then the algorithm is paired with the K-NN and SVM classification methods to compare the accuracy. The classification is able to classify the sound as a cry or not so that it can be applied as a remote child monitoring system solution by parents. By designing a system using Raspberry PI to detect toddlers crying sound using Mel-Frequency Cepstrum Coefficient (MFCC), it will be forwarded by notification notification via telegram to parents who are working or outside the home to find out the notification of a baby crying at home. In this study, the Mel-Frequency Cepstrum Coefficient (MFCC) method is used as feature extraction, the K-Nearest Neighbor (K-NN) method and Support Vector Machine (SVM) as a characteristic classification. The test results show that the MFCC and K-NN have an accuracy of 87.9%, then the test shows that the MFCC and SVM have an accuracy of 86.3%. The results of recording tests have an accuracy of 76.6% of the test results showing that noise affects the accuracy of the system. And the results of notification testing get 80% accuracy.

Keywords : *Raspberry PI, Mel-Frequency Cepstrum Coefficient, Baby Crying, Speech recognition, Notification, Telegram.*