

ABSTRACT

Lung's sound in several cases of lung' sick has special patterns which can be recognized. Because of that lung's sound is used to diagnose lung's sick. The technique which usually used is auscultation, hearing lung's sound using stethoscope. There are several problems with this technique, i.e. low frequency of lung's sound, low amplitude, noise factor, and likeness pattern between one types of lung's sound to the other type. To overcome these problems, it has been developed a method lung's sick detection using phonocardiogram analysis (lung's sound record) based on software.

This project aims to produce a tool to diagnose lung's sound and classify lung's sick type, besides to analyze performance of JST SOM. Generally, the system of lung's sick detection consists of two main parts, i.e. feature extraction using wavelet packet decomposition and feature classification using Self Organization Map (SOM) neural network. Lung's sound spectral signal is divided using wavelet packet decomposition. Thus, Result of decomposition process which several sub-band is calculated the energy to get unique features. These features are recognized used SOM neural network.

From experiment with feature extraction using wavelet filter debauchis 2 and decomposition level 6 is obtained the accuracy of heart's sick detection is 97,14%.

Key words : lung's sick, phonocardiogram, wavelet packet decomposition, SOM neural network.

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