

ABSTRACT

Doctor limitation to analyze a disease or disorder from the patients make them to involving new idea in medical technology. One of these is the way to diagnose lung disease. The method that often used by a doctor to diagnose a lung disease is hearing a lung sound with stethoscope or usually call auscultation technique. Lung sound has more important information to diagnose the disease. A lung sound in several cases showing a certain pattern that can recognize. This pattern is use as a substance to determine diagnose. The problem are lung sound has a low frequency, low amplitude, noise environment, ear's sensitivity and sound pattern that resemble between one lung sound to another.

Doctor's subjectivity in analysis a lung sound with auscultation technique because the factor above can make wrong diagnose of a lung disease. Because of that, in this final project will design the software to recognize a lung sound automatically and hope can increase the accuracy from doctor's analysis. Method that use in this final project are Linear Predictive Coding (LPC) and Hidden Marko Model (HMM). LPC method is use to extract the feature from lung sound until get the cepstral's coefficient. HMM is use to search HMM parameter, so it can use an advance analysis to recognize a lung sound. In this final project, classification of lung sound has accurate level between 87.2% - 95.4%.