

Abstract

Lungs are the most important organs in the respiratory system that serves as a place for changing oxygen and carbon dioxide. However, at present free air contained in the natural starting polluted by vehicle pollution causing various diseases that can attack the lungs which can be a cough, flu, shortness can even cause a person suffering from lung cancer and pulmonary tuberculosis. Some of these diseases can be prevented as early as possible by making consultation, laboratory examination of blood tests as well as with Computerized Radiography (CR).

Computerized Radiography (CR) is a system or process to change the system on a conventional analogue radiography to digital radiography. To facilitate the reading of it would require also a system that is used to process the results of the photo that has been in though by CR. This system will use in collecting the characteristic image processing features in the image and make the process of comparison of data output CR systems with data that has been diagnosed by naked eyes by experts.

Abnormalities in the photo can usually be identified by their shape and texture of the lungs that have the disorder and normal. Thus in the manufacturing system that uses image processing methods can be used to detect texture that existed at the photo such as the method of Gray Level Co-occurrence Matrix (GLCM) and using Radon Transformation to get a form from the photo that is inputted and the form will be compared with the standard normal form from the database.

In addition the system will also be using with Artificial Neural Network (ANN) to perform learning and classification of each of each case that entered into the system.

From the results of tests performed, by combining the GLCM and Radon Transformation, the system performance to identify the image can be improved. This increase can be seen from the increase in accuracy values obtained. The value of accuracy is influenced by several factors, such as the magnitude of angle values for each feature extraction method and the large number of neurons and hidden layer during network training.

Keyword : image processing, feature extraction, GLCM, Radon Transformation, ANN, Computerized Radiography.