

ABSTRACT

Cancer is growth and spread of abnormal cells that have distinct characteristics. Cancer that has spread and can't be controlled again, usually it will cause death. Lung cancer more often causes a man died than the other cancer where that often can be cause of lung cancer is smoking. The methods that used to detect lung cancer is through examination of chest X - Ray results. There are some methods that have been developed for detecting lung cancer. The title of Final Assignment that author adopted is one method which used for detecting lung cancer. This Final Assigment is used to produce an application system that can diagnose lung image and classify lung into the cancer, normal, or effusion type, and also analyzing system performance that used in lung image classification process. Research of this final assignment is also used to compare system performance that used in this final assignment with a system that existed before.

Lung cancer detection process consists of some stages. Detection process is begun with beginning process at lung image, feature extraction process by using *Wavelet Transform*, and classification process by using *Linear Discriminant Analysis (LDA)*. Beginning process is used to waste unimportant information of lung image processing. Feature extraction process is done by reducing lung image dimension that will be input in classification process using LDA.

In this final assignment, the used train images are 60 images, that consists of 20 cancer class, 20 normal class, and 20 effusion class. The used test images are also 60 images, that consists of 20 images for each class. The produced accuration by system in this lung cancer detection process is 100% for train image and 95% for test image.

Key words : *linear discriminant analysis, wavelet transformasi, image processing.*