

ABSTRACT

Scoliosis is a disorder of the spine so that the spine curves to the left or right side. Usually this scoliosis is detected when the patient performs an X-ray examination or other medical device during MCU, an accident occurs, and when the spine feels uncomfortable or different. This Final Project aims to build a system capable of detecting spinal abnormalities in humans, so that the system can automatically sort out scoliosis in Rontgen according to the direction of the spine and doctors only determine the degree. The construction of this system is expected to help the process of sorting data quickly and accurately, thereby reducing the examination time X-ray results.

In this Final Project, has been used Principal Component Analysis (PCA) feature extraction method to get the feature vector from image of health diagnostic tool with .jpg format. Then the results of the vector feature classified with the Support Vector Machine (SVM) so that it produced 3 classifications of normal human backbone, dextroscoliosis and levoscoliosis.

In an effort to achieve the best accuracy, the test variables studied is the variable on preprocessing because the data that being used is the image of X-rays, so the best variable is needed in order to be the maximum input in the next process. The next variable is input of various values of PC in PCA, number of c in the SVM training process and the last one is testing on various amount of testing data and training data. Overall, using the PCA and SVM method in detecting scoliosis bone abnormalities, the highest accuracy was obtained at 91.87%.

Keywords : *Medical Image, Rontgen, Scoliosis, Dextroscoliosis, Levoscoliosis*

Principal Componen Analysis (PCA), Support Vector Machine (SVM).