

ABSTRACT

Detection fractures of the tibia and fibula performed by medical practice based on the results of X-Ray image. Under conditions of tired eyes, some medical practice can not detect tfracture of the tibia and fibula. Thus, the system that can detect fracture automatically researched and developed by various methods. In previous research, designed a system that can detect fracture of the femur with manually set threshold of the scanline algorithm with accuracy 73.33%

At this final project designed the system that can detect fractures on the tibia and fibula in three stages, namely, the image pre-processing, feature extraction using scanline algorithm, and classification using artificial neural networks backpropagation. Total images that used are 70 images, 35 training image and 35 testing images. The results of feature extraction of training images be a feature vector that will be trained by artificial neural networks backpropagation. In testing the testing image, the result of network training images will be used to detect the condition of the tibia and fibula bones. Accuracy is calculated based on the system being tested right image for all images tested.

The accuracy from the system in this final project is 100% for training images, which each class consists of 15 training normal images, 20 training fracture images. The accuracy from the testing images is 91.42% for all images, 100% for 15 normal images and 85% for fracture images, with time computation about 2.33 seconds.

Key words : fracture, digital image processing, scanline, ANN backpropagation.