

## ABSTRACT

*Osteoporosis is a disease characterized by low bone mass typical of which is accompanied by changes in bone micro-architecture of bone tissue and loss of quality which ultimately increases the risk of bone fragility fractures. One method is to use the detection of osteoporosis Singh Index. Singh Index value has multiple levels or grade of 1 to 6 in the detection of osteoporosis seen in the trabecular bone of the femur. Singh Index is osteoporosis detection methods that can only be done by doctors chiropractors and eye acuity greatly affect the results obtained. For that we need a system that is efficient, effective, and accurate in the detection of osteoporosis so there is no mistake in the interpretation of results.*

*In this thesis designed an android-based application to detect osteoporosis, which is named Osteogram. Texture analysis method used is tresholding Otsu method by utilizing the X-Rray image of the bones. Otsu method is a method of calculating the segmentation threshold value automatically based on the input image. The system will process the input image is a grayscale image that results will be compared with the results of detection using the Singh Index.*

*Osteogram application has been able to detect normal and osteoporotic bone in a non-realtime system with an accuracy rate of 77,08 % and the average computation time by an average of 1.89 second.*

**Key words :** *Osteoporosis , Texture Analysis , Tresholding , Otsu method , Android , Singh Index*