

# **Radiogrammetric Measurement Of Third Metacarpal Bone From Hand Radiogram Using Active Contour Model**

**16CS13F  
SEMINAR TOPIC**

## **Abstract**

Osteoporosis disease is caused by reduction in bone mass and strength. The gold standard method for diagnosis of osteoporosis is measurement of bone mineral density (BMD) using Dual X-ray Absorptiometry (DXA). However, DXA is expensive and not widely available in developing countries. Another way which is cost effective is metacarpal radiogrammetry, by which geometric measurements like cortical length, cortical width and thickness etc. of cortical bone of the metacarpal bone are measured.

In this project, I have done segmentation of third metacarpal bone from hand radiograph and radiogrammetric measurements using active contour model (Chan-Vese model). Cortical width and thickness are measured from the endosteal and periosteal edges of the metacarpal bone using which bone indices which help in diagnosis of osteoporosis can be computed.