ABSTRACT:

Problem statement: Currently doctors in orthopedic wards inspect the bone x-ray images according to their experience and knowledge in bone fracture analysis. Manual examination of x-rays has multitude drawbacks. The process is time-consuming and subjective. Approach: Since detection of fractures is an important orthopedics and radiologic problem and therefore a Computer Aided Detection(CAD) system should be developed to improve the scenario. In this study, a fracture detection CAD based on GLCM recognition could improve the current manual inspection of x-ray images system. The GLCM for fracture and non-fracture bone is computed and analysis is made. Features of Homogeneity, contrast, energy, correlation are calculated to classify the fractured bone. Results: 30 images of femur fractures have been tested, the result shows that the CAD system can differentiate the x-ray bone into fractured and nonfractured femur. The accuracy obtained from the system is 86.67. Conclusion: The CAD system is proved to be effective in classifying the digital radiograph of bone fracture. However the accuracy rate is not perfect, the performance of this system can be further improved using multiple features of GLCM and future works can be done on classifying the bone into different degree of fracture specifically.