Breast cancer augmentation using an integrated approach of real time square-roi marker identification and verification techniques

Abstract

The aim of this research is to develop a real-time Square-ROI marker identification and verification techniques by integrating the enhanced contour-corner approach. To enhance the conventional contour and corner approach, we proposed a smoothing and adaptive thresholding to the input stream captured via a webcam and then apply subpixel corner detection in order to obtain better and accurate corner points. For testing purposes, two sets of experiment have been set up to evaluate the proposed technique. The first experiment conducted by drawing a series of square-ROI on a paper. The subsequent experiment conducted with the use of a mannequin. İnitially, during the experiment, the visual sensor (webcam) was positioned at 60 cm from the hand-drawn square-ROI in order to find the optimal distance needed by the proposed technique to define a marker. From the experiments, it reveals that the recognition technique in both testing setup was able to capture the real scene and convert the captured frame into a grey-scale image. Our evaluations on the series of square-ROI dataset shows that the proposed methods are robust to illumination changes and ROI's size, low in computation time, and greater in accuracy.