## Breast profile segmentation based on the region growing approach

Computer Vision and Robotics Group University of Girona, Spain http://vicorob.udg.es

Jordi Freixenet, David Raba, Arnau Oliver, Joan Espunya {jordif, draba, aoliver, jespunya} @eia.udg.es

## Abstract

The automatic breast segmentation into background and breast region without artifacts (directly exposed area, the patient identification information, and lead markers) is regarded as a key objective to provide useful data to the computerized analysis. A new method to segment the breast profile with pectoral muscle suppression is presented.

## Literature Review



The method was applied on a set of 322 mammograms taken from the MIAS database (MLO view). To achieve the breast segmentation we propose a "two-phase" method that combines the adaptive histogram approach to separate the breast from the background (Phase A), and a

specific region growing to obtain pectoral muscle suppression (Phase B).



## **Results and Conclusions**

The obtained results show robustness, although they can be improved in terms of accuracy. We have tested 322 images, and we have obtained a 98% of well detected breast profile, and 86% of correct muscle extraction according to the radiologist opinion. In cases where the contrast between the muscle and the tissue are not clear enough, our method rejects the muscle detection and provides the region obtained without suppressing. The inclusion of shape restriction to the growing process will improve the results, which is the focus of current work.

