Breast Cancer Detection Using Convolutional Neural Network

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Breast cancer is the most common cancer as well as the most common cause of cancer for death in women in the world. Early detection and suitable medical treatments will be much helpful to control this cancer before it spreads into other organs. For early diagnosis it is very important to develop breast cancer detection techniques. Double checking of mammograms cost high and the mammograms are X-ray tests, which are generally low cost in contrast. So, a new computer aided detection system is proposed for classifying normal and abnormal images in breast mammography images. Feature extraction from images can be automatically done by using CNN. Mammograms MIAS dataset is used for this purpose. Proposed system classifies breast tissue as abnormal or normal based on statistical features of mammogram. Since many labelled images are required to train the CNN from scratch, it was a difficult method to get the accuracy in a good range because it is infeasible to find a large medical image dataset. So, it was a good solution to apply transfer learning in CNN. This is an ongoing research and further trainings are being made by optimizing the CNN architecture.

Keywords: Breast Cancer Detection, Convolutional Neural Network, Mammograms