MULTICLASS CLASSIFICATION AND STAGING OF BREAST CANCER USING HISTOPATHOLOGICAL IMAGES

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The idea is to provide a multiclass classification of breast cancer technique using convolutional neural network and to identify the stages in cancer using histopathological images. Breast cancer continues to be the leading causes of death among women and much effort has been expended in the form of screening programs for prevention. Given the exponential growth in the number of histology images collected by these programs, computer-assisted diagnosis has become a necessity. Computer-assisted detection techniques developed to date to improve diagnosis without multiple systematic readings have not resulted in a significant improvement in performance measures. In this context, the use of automatic image processing techniques resulting from deep learning represents a promising avenue for assisting in the diagnosis of breast cancer. In this paper, we present a deep learning approach based on a Convolutional Neural Network (CNN) model for multi-class breast cancer classification. The proposed approach aims to classify the breast tumors in non-just benign or malignant but we predict the subclass of the tumors like Fibroadenoma, Lobular carcinoma, etc. Experimental results on histopathological images using the BreakHis dataset show that the DLNN model achieved high processing performances accuracy in the multi-class breast cancer classification task when compared with other model.

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