

# Deep Learning Framework for Images Classification with Pretrained Networks.

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- **Abstract:** Breast cancer is the most common type of malignancy in women where incidence is on the rise computer-Aided Diagnosis-systems (CADs) are utilized to diagnose Breast cancer histopathological images. However, the heterogeneity among the class and the consistency between classes can make classification tasks extremely difficult. Deep learning techniques, such as convolutional neural networks (CNNs), have the power to extract features and relative information from histopathological images. In this paper, we analyse the histopathological image of BR using Deep learning techniques. On one hand, we utilize the Deep pre-trained models (ResNet50, MobileNet) to extract the features from the histopathological images to solve binary and multiclass classification tasks in BR. The results the highest average accuracy that is accomplished for the binary classification, and which is related to malignant or benign cases reach 97.52 % for ResNet 50, followed by 97.44% for hybrid model (MobileNet and ResNet50) and 93.1% for MobileNet. In terms of the multiclass classification of the eight breast cancer classes, the average accuracies for the pre-trained networks are highlighted as follows. The hybrid model (MobileNet and ResNet50) achieves 98.75%, ResNet50 97.76 % and MobileNet 92.04%.
- **Keywords:** Breast cancer, computer-Aided Diagnosis-systems (CADs), Deep learning techniques, hybrid model