Detecting Multi-stage Breast Tumor Region on Gigapixel Pathology Images Using Resizing Approach

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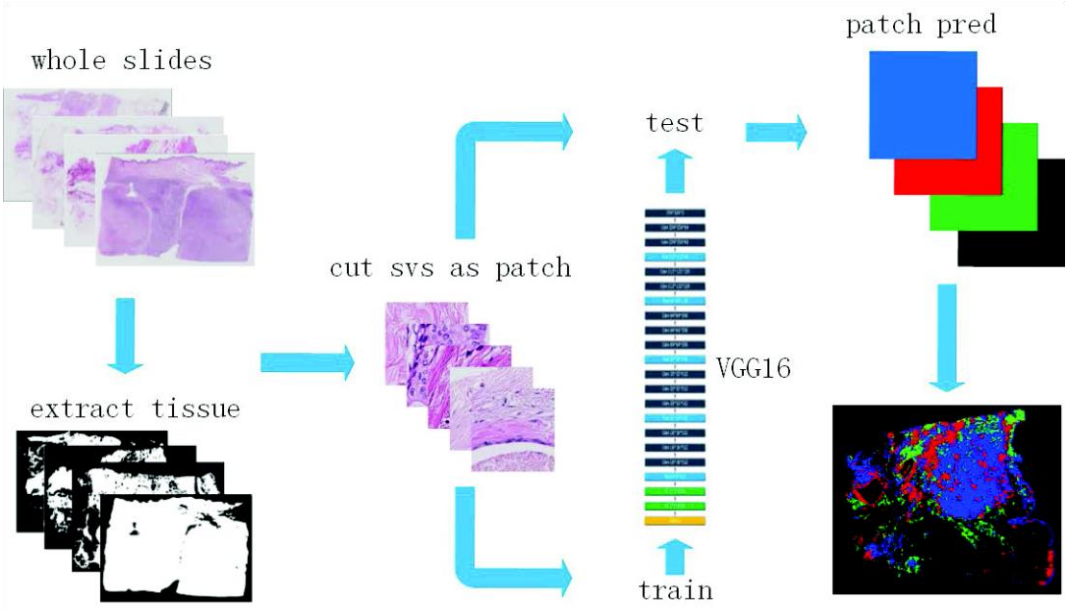
Method(s)

In our work, a CNN designed for the analysis of breast cancer H\&E histology slides was proposed. Different from most previous methods, image classification was made in the four classes of medical relevance: i) normal; ii) benign; iii) in situ; iv) invasive. A new breast cancer pathology slides dataset was utilized in our work. In addition, VGG16 with pre-trained model from ImageNet which has been achieve a great effect in wide fields was utilized. Careful sample was used to solve the problem of data imbalance. Data augmentation was used to increase the number of cases. Patches were rescaled to ensure that there was sufficient tissue information used for classification. Inception-Resnet-v2 network was used to automatically extract and integrate features of nuclei and tissue. Accurate multi-stage detection task of breast cancer was realized on a relatively small dataset.

Tables / figures



A whole process of our framework method based on VGG16 network

Whether there is a training result of transfer-learning
The result of our method