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Application of Pattern Recognition Techniques to Analysis of Histopathological Images

We will review basic techniques for analysis and processing histopathological images of blood samples and fine needle aspiration biopsies. The main tasks include automatic counting of red and white blood cells in noisy images and grading of biopsies of breast cancer tissues. In the first stage noisy images are segmented and features are extracted. In the second stage blood cells are counted and breast cancer biopsies are graded according to their malignancies. At that stage neural networks and support vector machines are employed. Some recent results on designing classifiers will also be presented. The open problems and challenges will be reviewed.