IMAGE ANALYSIS METHODS IN DIGITAL PATHOLOGY

Supervisor: Anna Korzyńska, Assoc. Prof.

Institute of Biocybernetics and Biomedical Engineering PAS

Department I
Laboratory of Processing and Analysis of Microscopic Images

Aim of the study:
Development of methods for quantitative analysis of images of stained tissue samples to support pathologists in the diagnosis, therapy and prognosis of neoplastic diseases.

Application:
The results of the analysis will be input for the system supporting the diagnosis of neoplastic diseases built within the framework of the EU project.

Description of the project:
As it is planned the deep neural networks will be used to recognize fragments of tissue images for quantification, initial work will be focused on the methods of learning convolutional neural networks (CNN) learning process. Next, after fragments selection, the software will learned to select objects of interest (by detection or by segmentation) and other objects. The proposed method will be evaluated on the basis of a comparison in the results of clinician evaluation and on the basis of artificial images. Images that simulate real tissue will be prepared using CNN based on real images.