

Development of algorithms of computer-aided analysis of human body composition based on computed tomography of the abdomen

The aim of the project is to design and evaluate in clinical conditions algorithms of automated computer-aided analysis of image data obtained during abdominal examination using computed tomography (CT) and artificial intelligence. The final effect of the project will be algorithms for automatic segmentation of tissues located in the abdomen volume, such as subcutaneous, visceral and ectopic adipose tissue (intramuscular, intra-organ) and muscle tissue divided into muscle groups. Segmentation will allow to assess the percentage of the patient's body composition, which is a diagnostic parameter in the risk assessment of a number of diseases. The design of the algorithms will be based on modern tools (e.g Python using OpenCV, tensorflow, pytorch, keras, and scikit-learn).

The project will use computing infrastructure of Department of Biocybernetics and Biomedical Engineering. The work will be financed according to NCN PRELUDIUM BIS project - 5000 PLN during 2 years and 6000 PLN during the subsequent 2 years (project granted)

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