



## **ELTE-Mediso Laboratory**

The focused research topic aims the cardiology solutions, first of all SPECT, gamma-ray based non-invasive imaging techniques.

The challenges are addressing the advancement of the latest protocols known on the clinical and preclinical field.

The innovation laboratory uses already reconstructed, DICOM standard images. Besides optimizing the post processing steps, the students will need to design and implement cutting edge algorithms as solutions.

In general, all the solutions will need to work on voxelized data without any user interaction from the radiologists. One of focal problems is segmentation, where an interesting and informative part of the image needs to be found or cut out automatically. Addition topics to the segmentation are where a 3D object spatially need to be oriented in a predefined basis, known as reorientation

The runtime and reliability of the algorithms are crucial on this field therefore the students will get to know the latest GPU technologies and C++. As a result, the students of the Faculty of Informatics will have the opportunity to join to an international and cutting edge research project.