

Recognition of tissue structures

Type	Bachelor thesis / Master thesis
Workingstitle	Intraoperative imaging - development of intelligent algorithms for the automatic classification of different anatomical structures

Hyperspectral imaging (HSI) is a non-invasive imaging technique that combines spectroscopy and digital imaging. By taking images at different wavelengths, chemical information such as tissue oxygenation or hemoglobin content can be obtained. However, these images are difficult for doctors to interpret.

For this reason, artificial intelligence algorithms are to be used to analyze the data. The representation of risk structures, tumors or physiological conditions can be investigated.

Tasks

- if necessary, annotation and pre-processing of existing recorded image data
- implementation of artificial intelligence methods for the classification of image data
- training and evaluation of different algorithms
- evaluation of the results

Requirements

- degree in computer science, physics or engineering (e.g. biomedical engineering)
- good programming skills
- basic knowledge of artificial intelligence and image processing methods

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