

headandneck 5000

AI in histology diagnosis of lymph node metastases

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Summary:

Analysis and diagnosis of lymph node metastases in histology images. Histological image data and associated diagnoses from Head and Neck 5000 will be used in this project, which aims to analyse lymph node histology images in order to automatically detect nodal metastases. This approach could thereby be used to validate the existing manual process. Computer vision techniques will be employed, and in the first instance Deep Learning will be tried, although traditional computer vision techniques are also a possibility. The project will include a brief review of the state of the art in this area as well as what relevant image data sets are publicly available, which could also be evaluated during the project. If time and data permit, image pixels could be classified according to tissue type, providing an image segmentation that can subsequently be used to help diagnose and detect metastases including micro-metastases and isolated tumour cells.

Keywords: histology images; Deep Learning; Head and neck tumours