

Vacancy **Master student internship**
(36 hours)

Convolutional neural networks for localization of high-grade prostate cancer using multi-parametric MRI

Project Description

The Gleason score, a well-validated prognostic factor, estimates the aggressiveness of prostate cancer. Targeted biopsies based on multi-parametric (mp-) MRI are being considered as an alternative to systematic biopsies. To improve the accuracy of MR-guided targeted biopsies, non-invasive methods need to be developed that segment different Gleason regions within heterogeneous prostate tumors. In this project we will investigate the feasibility of applying a recent class of convolutional neural networks to the segmentation of different Gleason regions using mp-MRI. For training of the network we use a prospective three-center dataset of 30 patients with a proper registered histopathology labels for different Gleason regions. For validation of the network we use an external mp-MRI dataset of 50 patients.

Research Question

Is applying convolutional neural networks feasible for segmentation of different Gleason regions on mp-MRI?

Your profile

A master student in medical science with good programming skills looking for an internship project in machine/deep learning field.

Your career opportunities and terms of employment

Start date: Jan 2019

Expected final date: after 6 months

Work load (weeks): 24 weeks

Interested?

For further information about the position please contact Ghazaleh Ghobadi, tel. +31 20 5121744 or e-mail: g.ghobadi@nki.nl

Acquisition for this vacancy is not appreciated.