

# Automated Liver Segmentation from MR-Images Using Neural Networks

## Background

Segmentation of the liver is a tedious and cumbersome task, often consuming much valuable time from radiologists, whether in research projects or in clinical work. It is therefore of great interest to develop automatic segmentation tools. Recently, there has been significant progress in using segmentation methods based on neural networks. However, a known limitation these methods is that they are sensitive to which scanner that was used to acquire the images and which particular imaging method that was used. This needs to be overcome.

## Project Description

The aim of the project is to investigate how neural network segmentation methods can be used to segment livers from Magnetic Resonance-images (MR) acquired using different MR-imaging techniques on several different MR-scanners at different field strengths. The project will be available at CMIV (see <https://liu.se/en/research/center-for-medical-image-science-and-visualization-cmiv>).

## Suggested Student Profile

- Background in biomedical engineering, applied physics or medical physics, or equivalent
- Interest in medical image analysis and AI
- Matlab experience, or equivalent

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