The submitted results were obtained by a slightly modified version of the segmentation method described in the following paper.


Abstract: Liver volumetry is considered to be an accurate indicator of hepatic function and a prognostic indicator in hepatic surgery planning. Despite many years of research, automated liver segmentation remains an open challenge and manual segmentation is still widely used clinically although it is time-consuming and tedious. In this paper we propose a novel semi-automated segmentation method based on deformable models independent of training data. First, an initial shape of the liver is generated by variational interpolation from a few user-generated contours. A template-matching method then identifies target points corresponding to the liver boundary. Using a Laplacian mesh optimization framework, the geometric model is iteratively deformed until it converges to the liver boundary. This liver segmentation method was tested against 20 publicly available datasets and is shown to be fast and robust to pathological cases with a mean volumetric overlap error of 6.8% and an average runtime under 6 minutes.