

“Segmentation-Driven Tomographic Reconstruction”

Abstract:

A typical Computed Tomography (CT) scanning pipeline consists of four main stages: scanning, reconstruction, segmentation and analysis. The quality of the segmentation inherently depends on the quality of the reconstruction. Classically the reconstruction consists of a simple filtered-backprojection type approach followed by a more computationally demanding segmentation stage. In our work we seek to move computational effort to the reconstruction stage by introducing regularization when solving the inverse problem. According to application specific prior information, we aim to regularize the reconstruction such that we facilitate the subsequent segmentation.