

Multi-modality 3D brain tissue segmentation with a fully convolutional neural network

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Segmentation and quantitative assessment of brain tissue from MRI can help reveal important clues regarding the mechanisms that may underlie normal ageing or a neurological disease. Despite numerous efforts dedicated to brain tissue segmentation, implementing a fully automatic method that provides accurate and reliable segmentations remains a challenge. To address this issue, we implemented a fully convolutional neural network that could automatically segment brain tissue into white matter, gray matter and cerebrospinal fluid. Our method was inspired by an existing implementation, V-net, and trained using T_1 , T_1 -IR and FLAIR data from the MRBrainS dataset. The full paper describing this approach is in preparation and will be made available as soon as possible.