

INFANT-INSIGHT

Neonatal MR Tissue Segmentation

Tissue segmentation was performed using a fully convolutional neural network (CNN). The CNN was constructed as a deep residual network with a series of 11 convolutional layers stacked with batch-normalization and ReLU activation layers. Dilated convolutions with dilation sizes varying from 1 to 16 were included. The Adam optimizer was used with mean image cross-entropy as the loss function. Training data was drawn in 2D axial patches from the 2 subjects (40 weeks, axial direction) provided by the Neobrain12 challenge. Patch-size was set at 225x225 pixels and data augmentation including left-right image flips, rotations, zooming and gamma-adjustment were included to encourage training generalisation.