Deep Convolutional Neural Network Approach for Brain Lesion Segmentation

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Brain lesion segmentation is a challenging problem because the amount of lesion area is extremely small and the size of available training magnetic resonance images are limited. To handle this, we exploit millions of 3D patches and 3D convolutional kernels for our proposed model. By treating each 3D patch as training data we capitalize on spatial information and overcome the problem of limited medical data. Our final segmentation model is an ensemble of two deep convolutional neural networks inspired by fully convolutional networks and the U-Net(Ronneberger et al., 2015). We implement the proposed model in Python with Lasagne and Keras.

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** I am the corresponding author of the abstract ''Deep Convolutional Neural Network Approach for Brain Lesion Segmentation'' and in the name of all co-authors I declare that MICCAI has the right to distribute the submitted material to MICCAI members and workshop / challenge / tutorial and MICCAI attendees.
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