

Cong Xie(Email: [xxccong@163.com](mailto:xxccong@163.com))

We use a 3D RU-Net which the decoder part is focus on the region of interest. The model consists of two stage. First, we train only the encoder part and find the rough region. Second, we crop the region and restore them to original image size on the decoder part.

Before training the network, we resized all MR images into a fixed size of  $384 \times 384 \times 32$  and then normalized them as zero mean and unit variance. We utilize data augmentation to augment the training data. The augmentation operations include rotation, zoom and flip.