

This submission was inspired by Fabian Isensee's nnU-Net. We utilized two cascaded 3D U-Net to segment the prostate, with the 1st 3D U-Net predicting the approximate bounding box of the prostate regions, which then served as input of the 2nd 3D U-Net.

Data preprocessing included: a) Undersampling for 1st U-Net, and zero padding for 2nd U-Net. Since the output of the 2nd U-Net was adopted as final result, the principle is to avoid any resampling of the bounded regions containing the segmentation target as much as possible. b) Normalization to zero mean and unit variance. Bias correction was omitted, though it's often seen in literature.

For data augmentation, we adopted data flipping, rotation and deformation. All augmentations were performed on the fly during training.

After training, a strategy of largest connected component was used to remove potential tiny objects surrounding the predicted prostate regions. The strategy was applied in both 2D and 3D manner.

Overall, the current model achieved a dice score of 89.3 for the 10 cases separated from training cases.