V-NAS: Neural Architecture Search for Volumetric Medical Image Segmentation

Zhuotun Zhu\(^1\), Chench Liu\(^1\), Dong Yang\(^2\), Alan L. Yuille\(^1\), Daguang Xu\(^2\)
\(^1\)Johns Hopkins University \(^2\)NVIDIA Corporation

**Proposed Method**

**Evaluation Matrix**

- if the set of ground-truth pancreas voxels is \( S \) and the set of predicted pancreas voxels is \( \hat{S} \), then the accuracy of segmentation, or the Dice-Sørensen coefficient (DSC), is computed as \( 2 \times |S \cap \hat{S}| / (|S| + |\hat{S}|) \)

- \( \text{DSC} = \frac{2 \times |S \cap \hat{S}|}{|S| + |\hat{S}|} \)

- \( \text{Groud-truth (20 voxels)} \) \( \times \) \( \text{Prediction (19 voxels)} \) \( \Rightarrow \) \( \text{Overlap (10 voxels)} \)

**Visualization**

- **Image**
- **Label**
- **VNAS**
- \( \text{Mix} \) \( \times \) \( 3D \) \( \times \) \( \text{Unet} \)

**Reference**


