Main claim:

Motivation:

Claim:

Results:

Implications:

The generalizability of semantic segmentation, which represents fully automated tools that can perform any pixel-level segmentation tasks given any data without much human intervention, becomes an emerging research field nowadays. Here we show a generalizable auto-segmentation pipeline for medical images, mainly MRI and CT, including image preprocessing, network architecture, training, and model evaluation. This auto-segmentation tool has been utilized to train a brain-tumor MRI dataset and a pancreas-tumor CT dataset for multi-region of interest tasks. The resulting average dice coefficients for different types of brain tumors (e.g., edema, non-enhancing, enhancing tumor) and pancreas tumor (e.g., pancreas + pancreatic tumor) has reached 75% and 70%, respectively. This pipeline can be further implemented for different purposes in auto-segmentation tasks. We have tested it on a 20-organ annotation visceral dataset and achieved the average dice of XXX.

Subclaims:

* Pipeline demonstation
* MRI: Brain tumor model, hippocampus model
* CT: Pancreas tumor model, liver tumor model
* Twenty-organ annotation model

Methods: everything to include (package) 🡪 at the level of detail for them to replicate your study