Medical Image Processing - Final Project

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Preparation

Load the scripts

```
addpath("script/NIFTI_reader");
addpath("script/segmentation");
addpath("script/segmentation/plot");
```

Import images

```
ct_lungs_noise = load_nii('data/CT_lungs_noise.nii');
ct_lungs = load_nii('data/CT_lungs.nii');
ct = load_nii('data/CT.nii');
pet = load_nii('data/PET.nii');
```

Image Segmentation

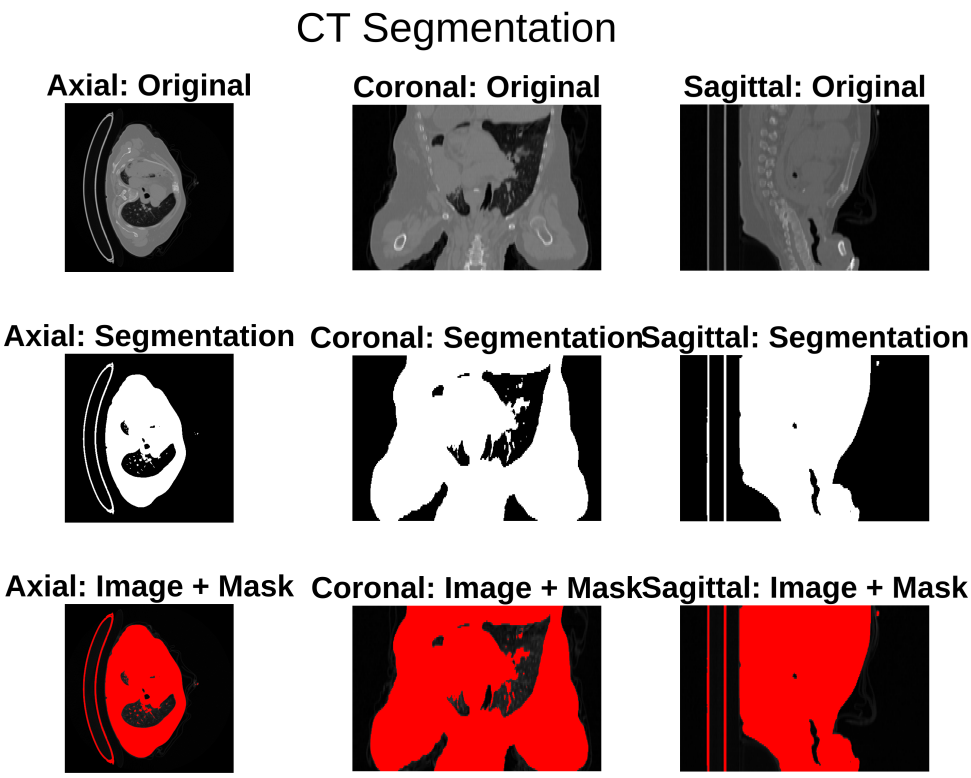
Exercise 1: Segment the images with Otsu

```
ct_segmentation = otsu_segmentation(ct.img);
pet_segmentation = otsu_segmentation(pet.img);
```

Exercise 2: Plot the segmentation result

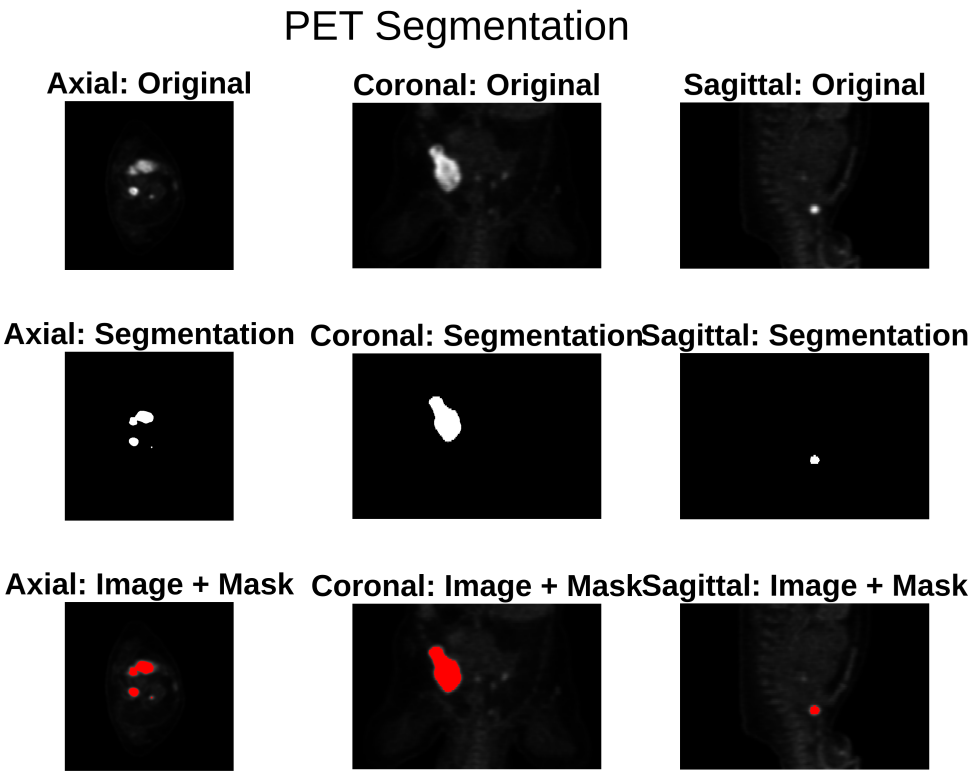
CT

```
plot_segmentation(ct.img, ct_segmentation, ct.hdr.dime.pixdim(2:4));
sgtitle("CT Segmentation");
```



PET

```
plot_segmentation(pet.img, pet_segmentation, pet.hdr.dime.pixdim(2:4));
sgtitle("PET Segmentation");
```



Morphological Filters

Quantification