



AUTOMATIC LYMPHOMA LESIONS DETECTION ON PET/CT SCANS

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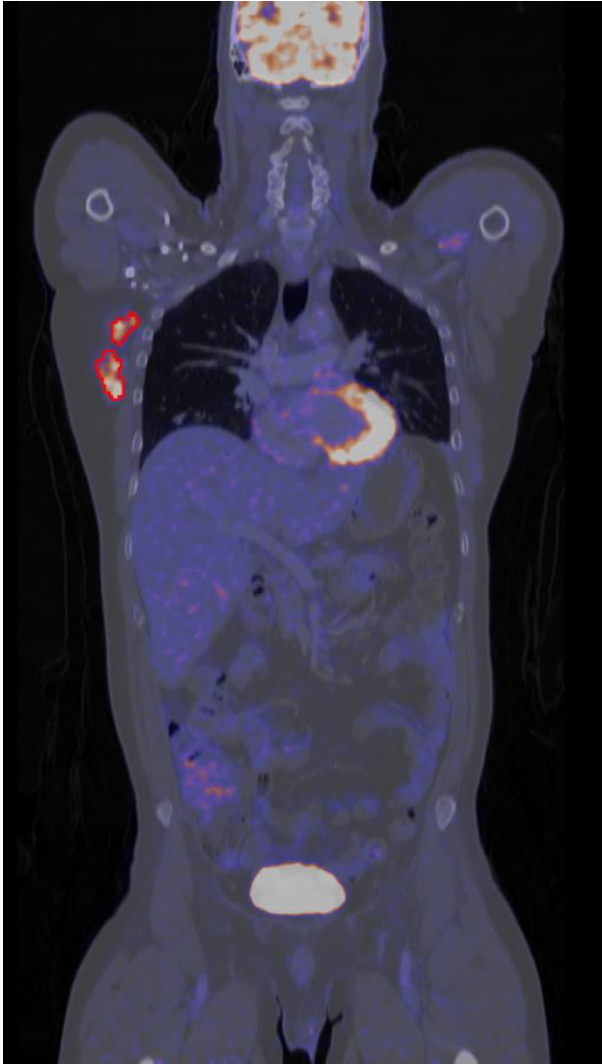
Fundación Centro Diagnóstico Nuclear, Buenos Aires, Argentina

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Diagnóstico Nuclear

GOAL



Fluorodeoxyglucose (FDG) positron emission tomography/computed tomography (PET/CT) scans



Automatic detection of lymphoma lesions



These are FDG-avid regions, but physiological uptake is also present on healthy tissues

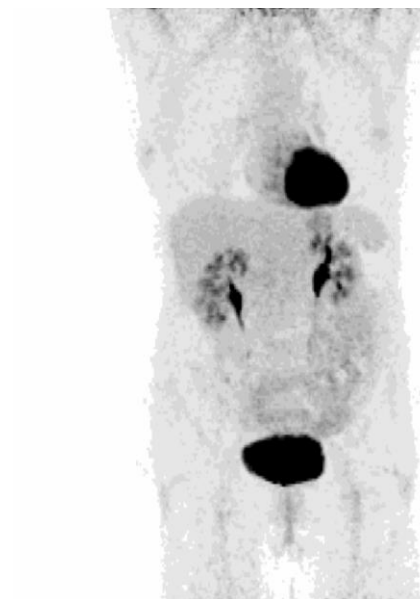
DATASET

DATASET

Lymphoma



**Normal studies
(no lesions)**

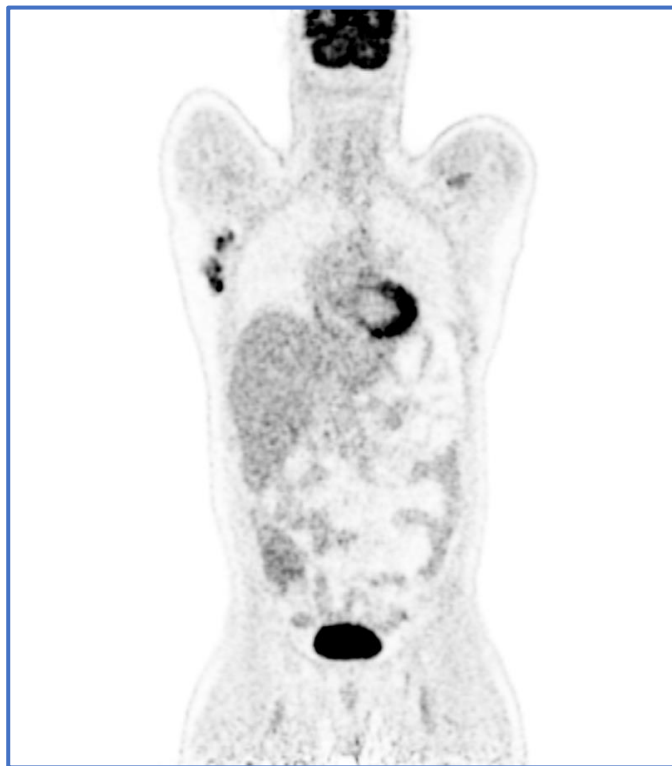


DATASET

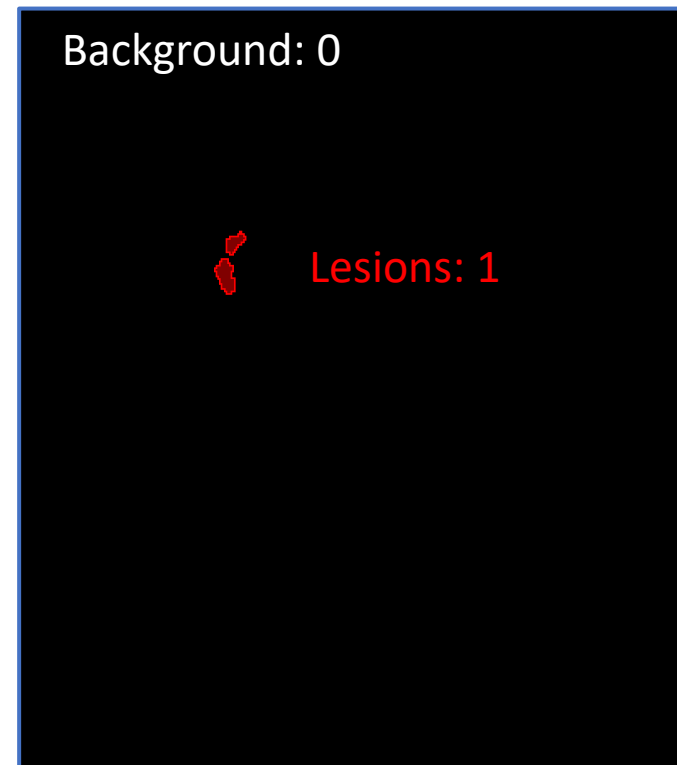
For each study, 3 images:



CT image in Hounsfield units (HU)



PET image in SUV



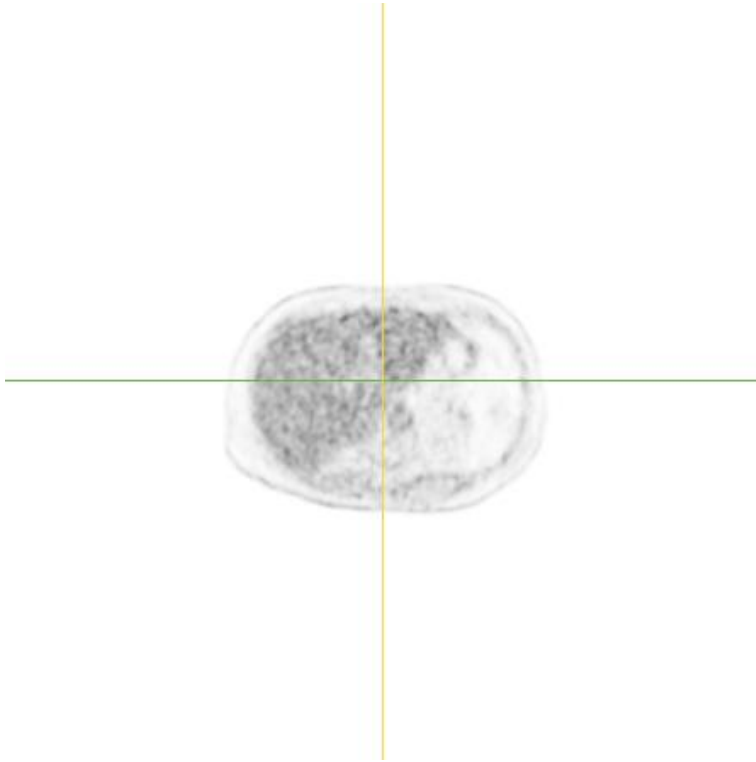
Lesions segmentation masks



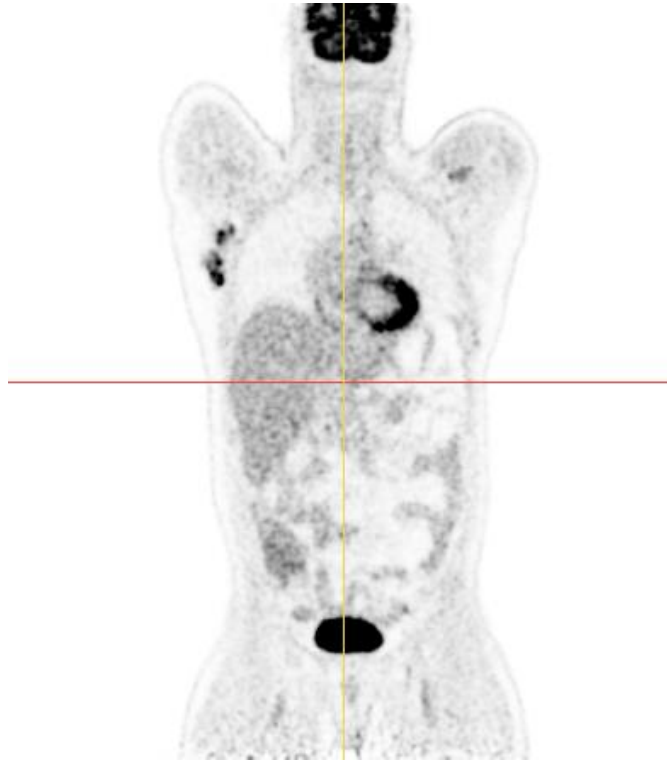
For normal studies:
only background

PET/CT IMAGES

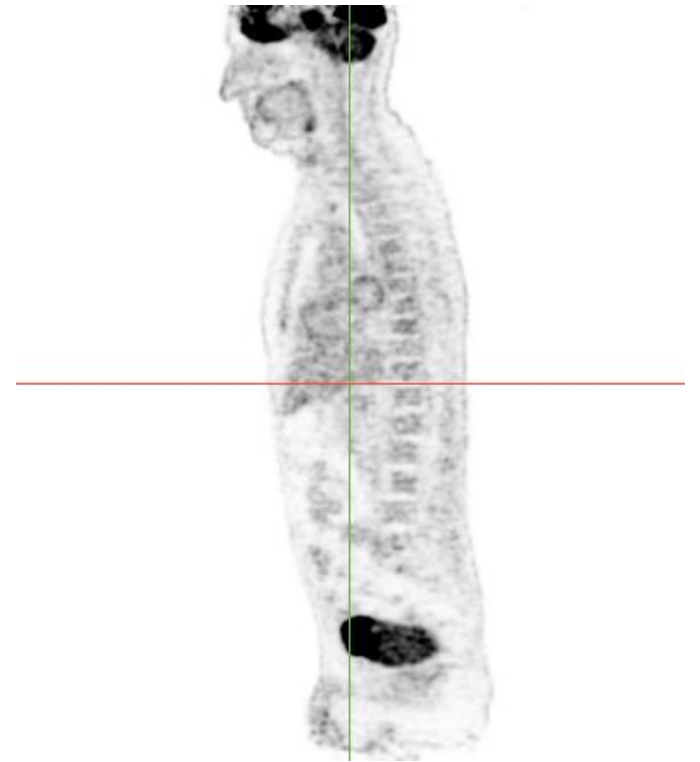
CT, PET, masks → 3D volumes



Axial



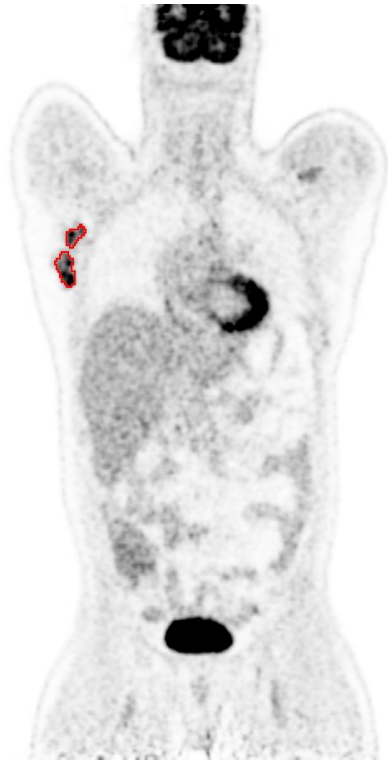
Coronal



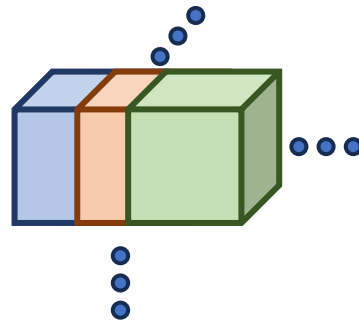
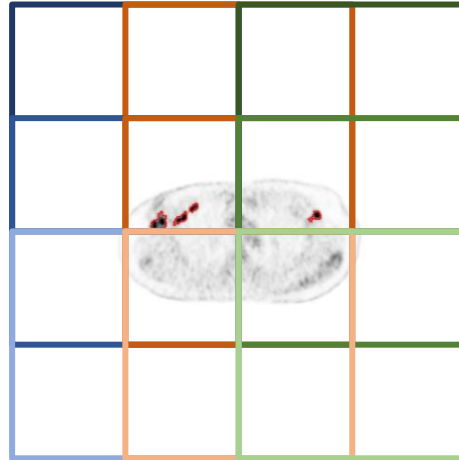
Sagittal

PET/CT IMAGES

3D images with original size and resolution → Memory usage is challenging



Patches



2mm x 2mm x 3mm
400 x 400 x 305

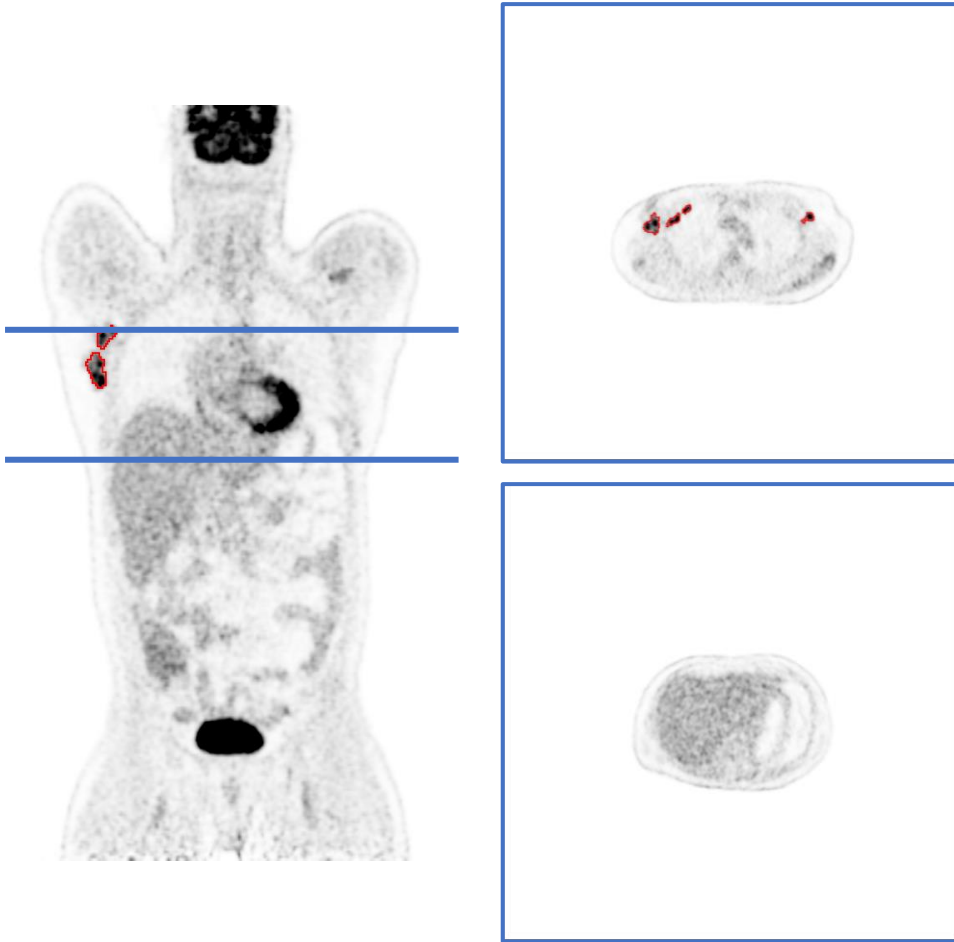


6mm x 6mm x 6mm
136 x 136 x 153

Resampling

PET/CT IMAGES

3D images with original size and resolution → Memory usage is challenging



2D slices



2D MIP

Etc.

FINAL REMARKS

- Analyse the dataset. How is it composed? What images does it have?
- What is the task that has to be solved? What are the possible strategies to try to solve it?
- What information can be obtained from the images? What is the best way to preprocess the images?