CT NORMALIZATION BY PAIRED IMAGE-TO-IMAGE TRANSLATION FOR LUNG EMPHYSEMA QUANTIFICATION

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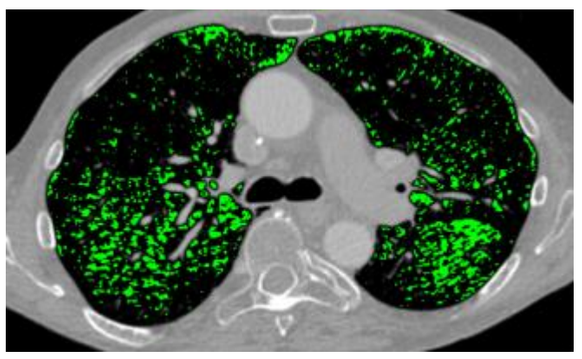
DATA
(Siemens CT Reconstructions)

B20f (smooth)

B80f (sharp)
L1/Voxel: 84.5 +/- 11.7

Threshold < -950 HU



Emphysema Segmentations

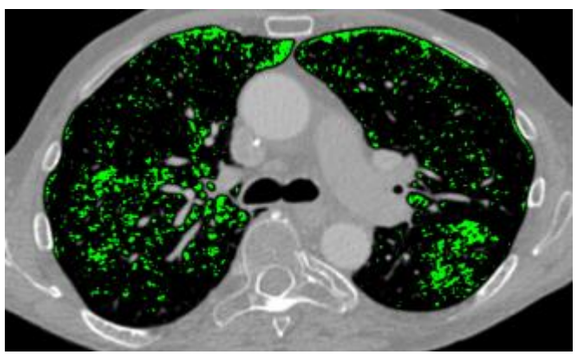
Dice: 0.19 +/- 0.19

Normalization of B80f with UNet

RESULTS

L1/Voxel: 9.7 +/- 1.7

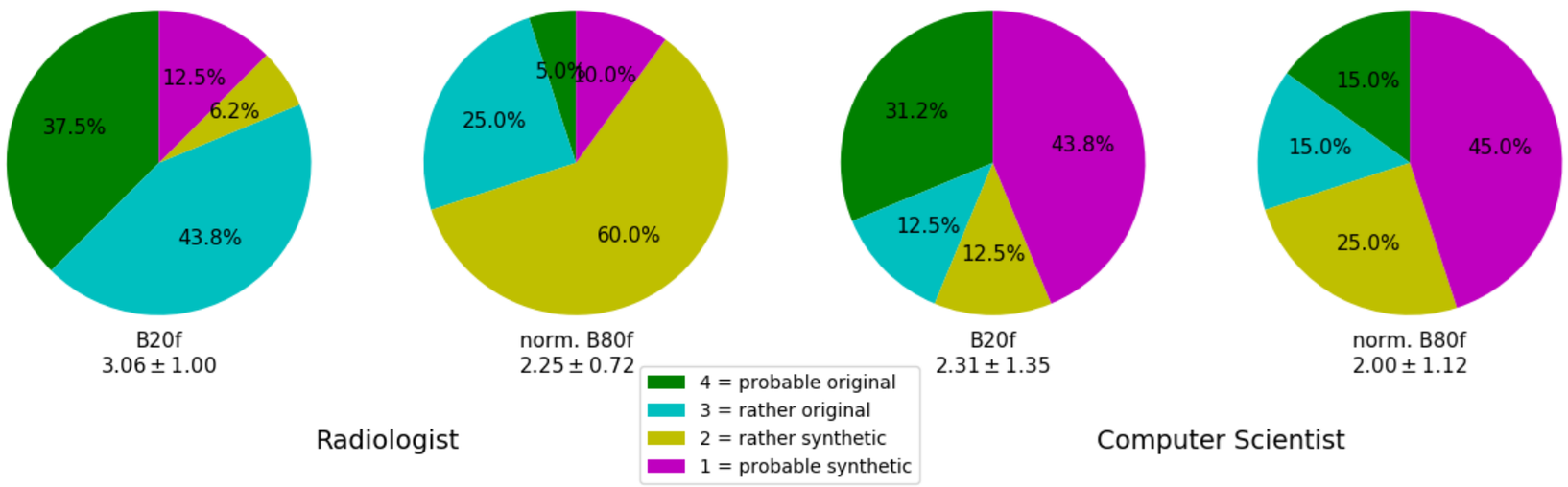
B80f after normalization



Dice: 0.55 +/- 0.21

Diagnostic quality assessment

Images rated (score 0 to 5) by clincal radiologist (>5 years experience) and computer scientist specialized on medical imaging (>5 years experience)



Key lesson:
Qualitative assessment of synthetically generated medical images should always be performed by experienced radiologists on clinical workstations.

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