









Appendix of “Shortcut Learning in Medical Image Segmentation”

Manxi Lin^{1†}, Nina Weng^{1†}, Kamil Mikolaj¹, Zahra Bashir^{2,3},
Morten B. S. Svendsen^{1,3}, Martin G. Tolsgaard^{3,4,5},
Anders N. Christensen¹, Aasa Feragen¹ (✉)

¹ Technical University of Denmark, Kongens Lyngby, Denmark

{manli, ninwe, afhar}@dtu.dk

² Slagelse Hospital, Slagelse, Denmark

³ CAMES, Copenhagen, Denmark

⁴ Copenhagen University Hospital Rigshospitalet, Copenhagen, Denmark

⁵ Department of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark

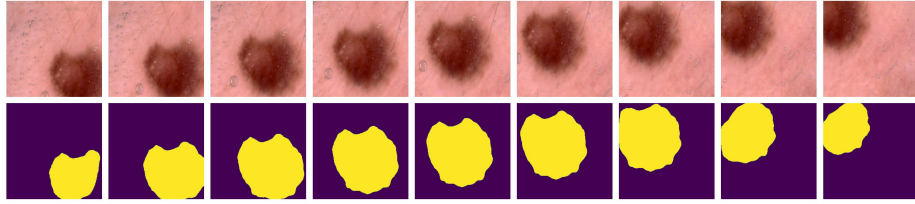


Fig. 1: Illustration of how zero padding breaks translation equivariance: When the lesion moves, parts that stay inside the image have unchanged segmentation, whereas parts that are closer to the border are systematically undersegmented.

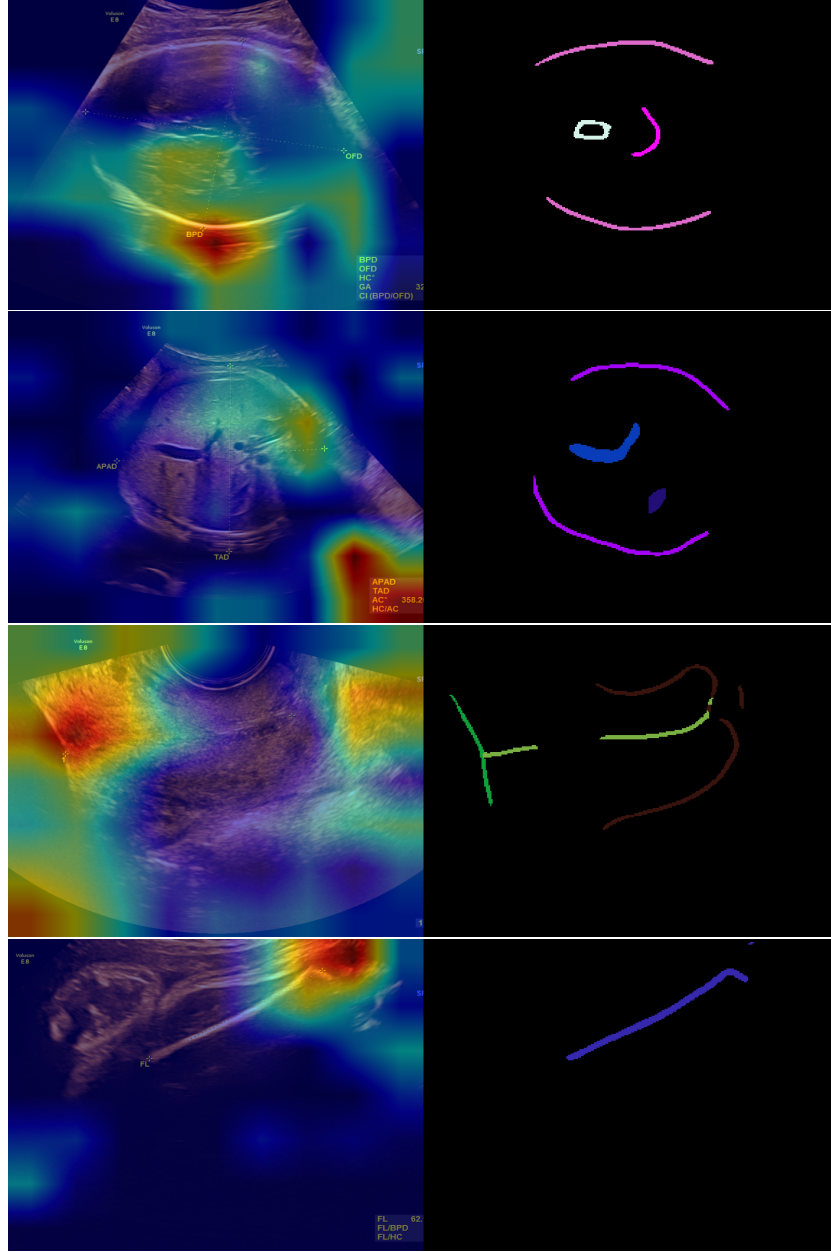


Fig. 2: Illustration of the saliency maps of the segmentation model on the ultrasound segmentation task. The saliency maps were obtained with Grad-CAM on the last layer of the U-Net encoder. The saliency maps show the model's attention on the proposed shortcuts, i.e., the yellow calipers and texts in the image.