

Table E1: Hyperparameters and details of each of the deep neural networks used.

Attributes	LAX Localization	MV Slice Localization	Bounding Box	SAX Localization
Module Input	VLAX	SAX stack		
Module Output	MV, Apex Localization	AV, MV, PV, TV Localization		
Preprocessing	Down sampling to 128 × 128	Rolling windows using focal slice and 2 basal and 2 apical slices, rotated into standard orientation, field of view cropped to 280°	Rotated into standard orientation, field of view cropped to 280°	Rotated into standard orientation, cropped bounding box to 128 × 128 using predicted segmentation, use slices from predicted minimum window. Intensity values were normalized between 0 and 1.
Training Data	4 Ch, 3Ch, 2 Ch, HLAX, VLAX Planes	5 slice windows from SAX Stacks	SAX Stacks	Bounding Box Cropped SAX Windows
Model Type	Heatmap Regression	Classification	Segmentation	Heatmap Regression
Base Model	2D U-net	Multichannel VGG-19	2.5D U-net	2.5D U-net
Purpose	To localize MV and Apex	To identify the first window where the focal slice is ventricular	To create a heart bounding box	To in-plane localize AV, MV, PV, TV
Sigma	60	—	—	60 for 65 epochs, then 40 for 65 epochs
Epochs	70	35	40	130
Kernel size	32 for top two conv layers, then 9 for each additional conv layer	3	3	36 for top two conv layers, then 9 for each additional conv layer
Learning Rate	10e-4	10e-4	10e-4	10e-3