

**Table S1** Data analysis and parameter setting

Parameter name	Parameter value
Weight	Initial weight
Learning rate	0.0002
Iterations	10000
Batch processing capacity	4
Step	1
Padding	1

**Table S2** Quantitative analysis of the diagnostic accuracy of different algorithm models for MRI images of breast cancer

Image type	Algorithm model	Average accuracy (%)	Average running time (s)
Routine samples	YOLACT	87.20%	3.5
	Mask R-CNN	81.30%	15
	Modified YOLACT	98.30%	4
Difficult samples	YOLACT	84.40%	4.5
	Mask R-CNN	79.40%	20
	Modified YOLACT	93.60%	5