

Supplementary

Table S1 Radiomic features reduction after intra- and inter-observer correlation test and least absolute shrinkage and selection operator (LASSO) method in each category

Category	Features	Original	Wavelet Decomposition							
			HLL	LHL	LHH	LLH	HLH	HHH	HHL	LLL
Shape	VoxelVolume									
Shape	Maximum3DDiameter									
Shape	MeshVolume	x								
Shape	MajorAxisLength									
Shape	Sphericity	x								
Shape	LeastAxisLength	x								
Shape	Elongation									
Shape	SurfaceVolumeRatio	x								
Shape	Maximum2DDiameterSlice									
Shape	Flatness	O								
Shape	SurfaceArea									
Shape	MinorAxisLength	x								
Shape	Maximum2DDiameterColumn									
Shape	Maximum2DDiameterRow									
First-order	InterquartileRange				x			x	x	
First-order	Skewness	x		x				O		x
First-order	Uniformity						x			
First-order	Median	x								x
First-order	Energy								x	
First-order	RobustMeanAbsoluteDeviation		x			x		x		
First-order	MeanAbsoluteDeviation									
First-order	TotalEnergy	x				x		x		
First-order	Maximum	x			x	x				
First-order	RootMeanSquared			x	x		x		x	
First-order	90Percentile				x					
First-order	Minimum		x	x			x		x	
First-order	Entropy	x		x						
First-order	Range									
First-order	Variance		x		x	x	x	x		O
First-order	10Percentile	x								
First-order	Kurtosis									
First-order	Mean	x	x					O		
GLCM	JointAverage		x	x						

Table S1 (continued)

Table S1 (continued)

Category	Features	Original	Wavelet Decomposition							
			HLL	LHL	LHH	LLH	HLH	HHH	HHL	LLL
GLCM	SumAverage	x	x		x	x	x	x	x	x
GLCM	JointEntropy									x
GLCM	ClusterShade		x	x	x		x			
GLCM	MaximumProbability									
GLCM	Idmn	x		x	x			x		x
GLCM	JointEnergy									
GLCM	Contrast				x					
GLCM	DifferenceEntropy	x	x					x		
GLCM	InverseVariance	x								
GLCM	DifferenceVariance			x		x	x		x	x
GLCM	Idn									
GLCM	Idm									
GLCM	Correlation	x	O			x				
GLCM	Autocorrelation									
GLCM	SumEntropy			x		x		x		x
GLCM	MCC								O	
GLCM	SumSquares	x	x		x	x				
GLCM	ClusterProminence			x		x				v
GLCM	Imc2	x		x				x		
GLCM	Imc1						x	x		x
GLCM	DifferenceAverage		x	x		x				
GLCM	Id						x			x
GLCM	ClusterTendency	x								
GLRLM	ShortRunLowGrayLevelEmphasis		x						x	
GLRLM	GrayLevelVariance	x			x	x	x			x
GLRLM	LowGrayLevelRunEmphasis	x		x				x	x	
GLRLM	GrayLevelNonUniformityNormalized	x				x				
GLRLM	RunVariance									
GLRLM	GrayLevelNonUniformity	x		x		x	x	x		
GLRLM	LongRunEmphasis									
GLRLM	ShortRunHighGrayLevelEmphasis		x			x	x	x		x
GLRLM	RunLengthNonUniformity			x	x					
GLRLM	ShortRunEmphasis								x	
GLRLM	LongRunHighGrayLevelEmphasis		x					x		x

Table S1 (continued)

Table S1 (continued)

Category	Features	Original	Wavelet Decomposition							
			HLL	LHL	LHH	LLH	HLH	HHH	HHL	LLL
GLRLM	RunPercentage				x					
GLRLM	LongRunLowGrayLevelEmphasis	x								x
GLRLM	RunEntropy		x							
GLRLM	HighGrayLevelRunEmphasis				x	x	x		x	
GLRLM	RunLengthNonUniformityNormalized									
GLSZM	GrayLevelVariance							x		
GLSZM	ZoneVariance		x	x			x		x	
GLSZM	GrayLevelNonUniformityNormalized									
GLSZM	SizeZoneNonUniformityNormalized	x		x						
GLSZM	SizeZoneNonUniformity									
GLSZM	GrayLevelNonUniformity	x					x			x
GLSZM	LargeAreaEmphasis		x		x			x		
GLSZM	SmallAreaHighGrayLevelEmphasis									x
GLSZM	ZonePercentage				x					
GLSZM	LargeAreaLowGrayLevelEmphasis		x		x		x			
GLSZM	LargeAreaHighGrayLevelEmphasis							x		
GLSZM	HighGrayLevelZoneEmphasis	x		x		x	x	x		x
GLSZM	SmallAreaEmphasis									
GLSZM	LowGrayLevelZoneEmphasis					x			x	
GLSZM	ZoneEntropy		x							
GLSZM	SmallAreaLowGrayLevelEmphasis					x	O			
NGTDM	Coarseness									x
NGTDM	Complexity	x						x		
NGTDM	Strength			x		x	x			x
NGTDM	Contrast		x	x			x		x	
NGTDM	Busyness		x			x		O		

Note: x Radiomic features were excluded by intra- and inter-observer correlation test. O Radiomic features were selected by LASSO Cox regression model.

Table S2 Univariate analysis of clinical risk factors

Clinical risk factor	Coefficient	P value
Age	0.8939	0.0989
Sex	0.3956	0.7027
Smoke	0.4810	0.3134
Tumor Diameter	0.4429	0.9866
CT-reported LN	0.5279	0.2432
Primary Tumor Location	0.6111	0.0298
Pleural Effusion	0.4462	0.8956
Carcinoma Embryonic Antigen	0.3704	0.1169

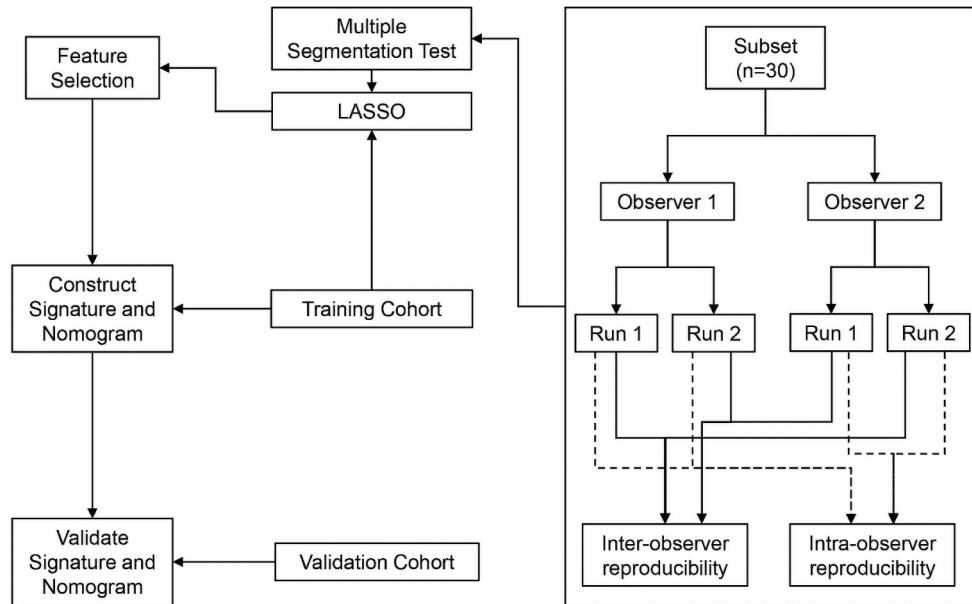


Figure S1 Flow diagram and data flow of feature selection and modeling.