Table S1 The details of CT imaging models

| Index	Primary cohort	Test cohort
Number of centers	9	7
CT manufacturer's models	GE BrightSpeed, GE LightSpeed VCT, GE Optima CT520 Series, NMS NeuViz 128, Philips Brilliance 64, Siemens Somatom Definition AS+, Siemens Emotion 16(2007), UIH uCT 550, UIH uCT 760	GE BrightSpeed, GE Optima CT520 Series, NMS NeuViz 64 In, Philips Ingenuity CT, Siemens Somatom Definition AS, Siemens Somatom go.Now, UIH uCT 528

CT, computed tomography.

Table S2 The details of radiomic features

| Texture analysis	Radiomic features
GLCM	Autocorrelation, joint average, cluster prominence, cluster shade, cluster tendency, contrast, correlation, difference average, difference entropy, difference variance, joint energy, joint entropy, Imc1, Imc2, Idm, Idmn, Id, Idn, inverse variance, maximum probability, sum entropy, sum squares
GLRLM	Gray level non uniformity, gray level non uniformity normalized, gray level variance, high gray level run emphasis, long run emphasis, long run high gray level emphasis, long run low gray level emphasis, low gray level run emphasis, run entropy, run length non uniformity, run length non uniformity normalized, run percentage, run variance, short run emphasis, short run high gray level emphasis, short run low gray level emphasis
GLSZM	Gray level non uniformity, gray level non uniformity normalized, gray level variance, high gray level zone emphasis, large area emphasis, large area high gray level emphasis, large area low gray level emphasis, low gray level zone emphasis, size zone non uniformity, size zone non uniformity normalized, small area emphasis, small area high gray level emphasis, small area low gray level emphasis, zone entropy, zone percentage, zone variance
GLDM	Dependence entropy, dependence non uniformity, gray level non uniformity, dependence non uniformity normalized, dependence variance, gray level variance, high gray level emphasis, large dependence emphasis, large dependence high gray level emphasis, low gray level emphasis, large dependence low gray level emphasis, small dependence emphasis, small dependence high gray level emphasis, small dependence low gray level emphasis
NGTDM	Busyness, coarseness, complexity, contrast, strength

The detailed mathematical definitions were shown in https://pyradiomics.readthedocs.io/en/latest/index.html. GLCM, gray level co-occurrence matrix; GLRLM, gray level run length matrix; GLSZM, gray level size zone matrix; GLDM, gray level dependence matrix; NGTDM, neighboring gray tone difference matrix.
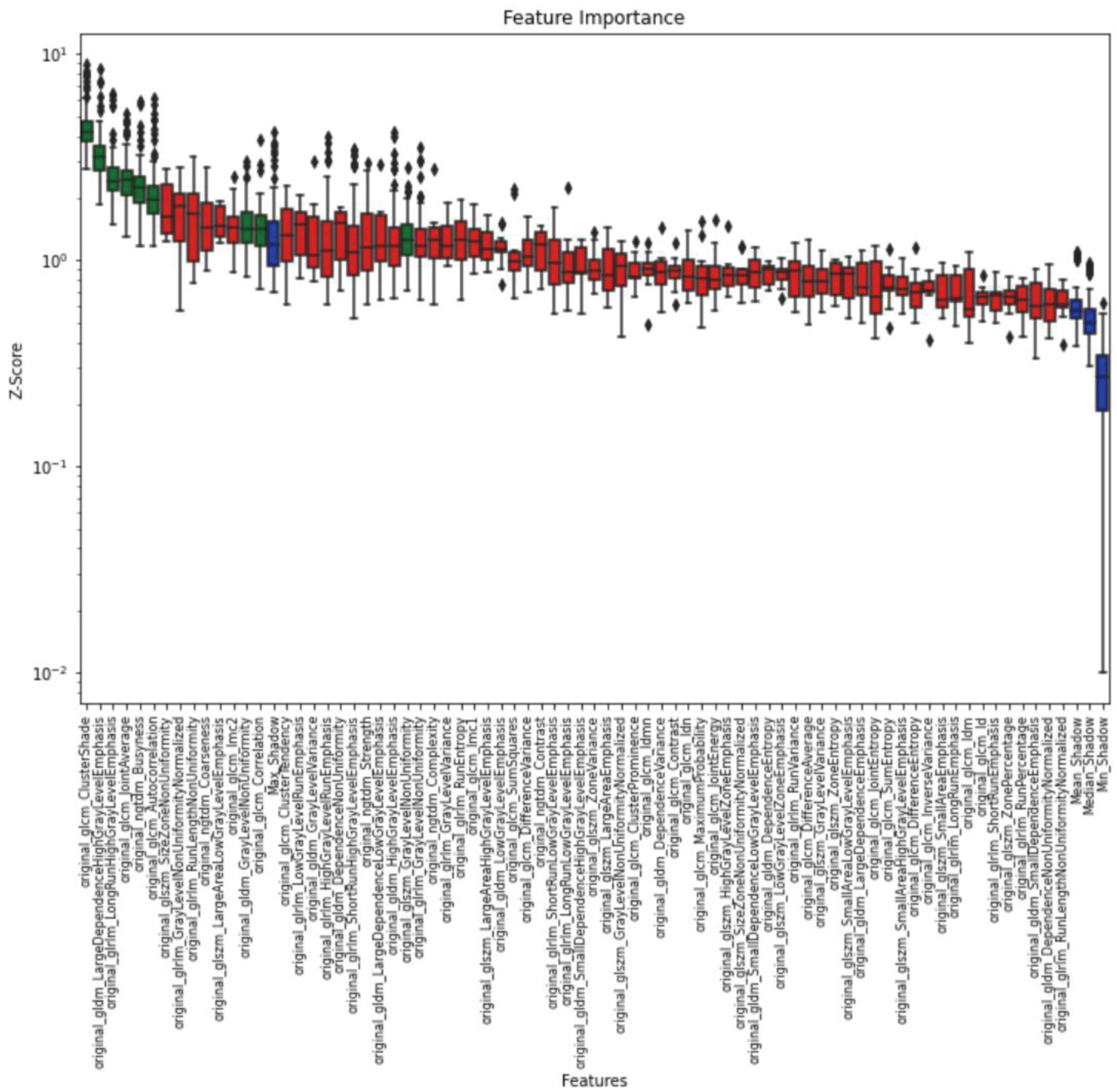
Figure S1 The BorutaShap selection in original image. SHAP, SHapley Additive exPlanations.
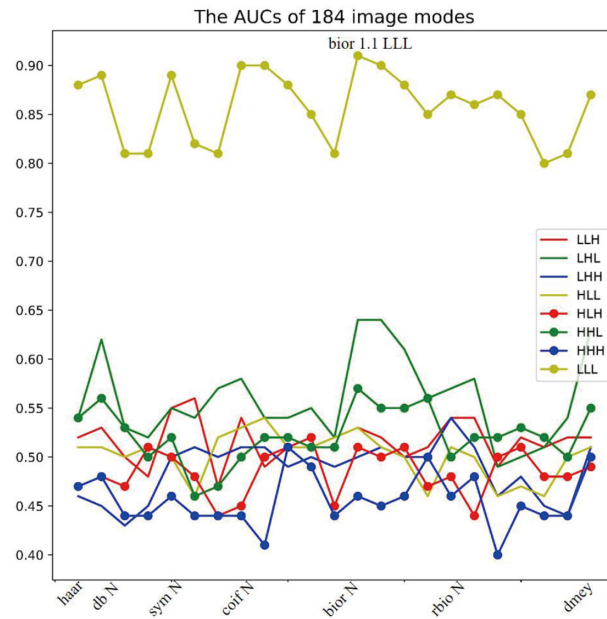
Figure S2 Diagnostic performance of all the wavelet transforming radiomic models. The AUCs of 184 wavelet transforming radiomic models in the test cohort. AUC, area under the receiver operating characteristic curve; L, low-pass decomposition filter; H, high-pass decomposition filter; db, daubechies; sym, symlets; coif, coiflets; bior, biorthogonal; rbio, reverse biorthogonal; dmey, "discrete" FIR approximation of Meyer.
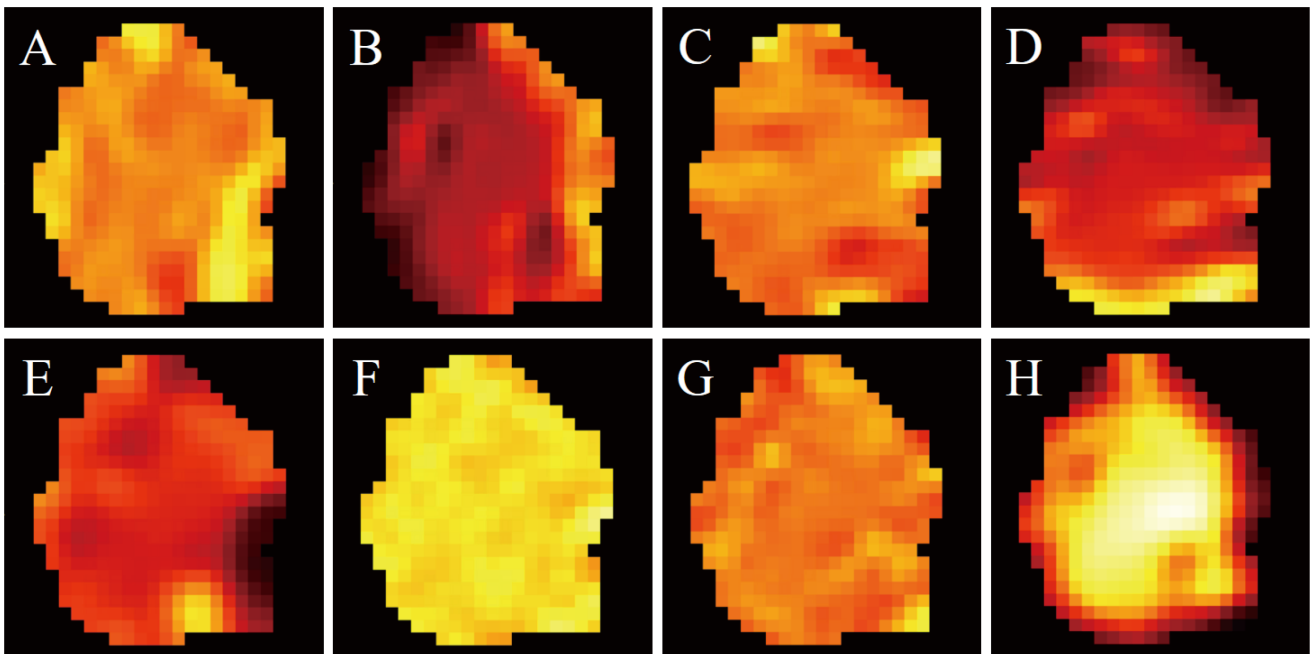
Figure S3 The GLCM autocorrelation feature maps of bior1.1 wavelet transforming. (A) Feature map in bior1.1 HLH, (B) HLL, (C) LHH, (D) LHL, (E) LLH, (F) HHH, (G) HHL, and (H) LLL. GLCM, gray level co-occurrence matrix; bior, biorthogonal; L, low-pass decomposition filter; H, high-pass decomposition filter.