

Table S1. Radiomic features ranked according to their  $\eta$  values in Lung1 set. The top four and the bottom four features were used in the model setup (highlighted in green).

feature	$\eta$
original_firstorder_Maximum	0.0
original_gldm_GrayLevelNonUniformity	0.0108
original_glrlm_GrayLevelNonUniformity	0.0115
original_ngtdm_Coarseness	0.0129
original_glszm_LargeAreaHighGrayLevelEmphasis	0.0218
original_glszm_ZoneVariance	0.0277
original_glszm_LargeAreaEmphasis	0.0278
original_firstorder_90Percentile	0.0342
original_glszm_LargeAreaLowGrayLevelEmphasis	0.0356
original_shape_Maximum3DDiameter	0.0394
original_gldm_DependenceVariance	0.0415
original_shape_Maximum2DDiameterColumn	0.0454
original_shape_Maximum2DDiameterRow	0.0455
original_shape_MeshVolume	0.0455
original_shape_VoxelVolume	0.0461
original_shape_Maximum2DDiameterSlice	0.0472
original_firstorder_Median	0.0524
original_ngtdm_Busyness	0.0535
original_glrlm_RunVariance	0.0544
original_shape_SurfaceArea	0.057
original_gldm_LargeDependenceHighGrayLevelEmphas is	0.0628
original_gldm_DependenceNonUniformityNormalized	0.063
original_gldm_LargeDependenceEmphasis	0.0658
original_glrlm_LongRunEmphasis	0.0663
original_glrlm_LongRunHighGrayLevelEmphasis	0.0717
original_shape_SurfaceVolumeRatio	0.0719
original_glrlm_RunPercentage	0.0758
original_gldm_Idmn	0.0791
original_gldm_Idn	0.0798
original_gldm_MaximumProbability	0.0858
original_gldm_DependenceNonUniformity	0.0879
original_glszm_GrayLevelNonUniformity	0.0904
original_gldm_Idm	0.0906
original_ngtdm_Contrast	0.0911
original_glrlm_RunLengthNonUniformityNormalized	0.0913
original_gldm_Id	0.0917
original_glrlm_ShortRunEmphasis	0.093
original_gldm_JointEnergy	0.0933
original_glrlm_RunLengthNonUniformity	0.0957
original_glszm_ZonePercentage	0.0995
original_gldm_SmallDependenceEmphasis	0.0996
original_gldm_InverseVariance	0.1
original_gldm_SmallDependenceLowGrayLevelEmphasi s	0.1063
original_firstorder_Range	0.1132
original_firstorder_Uniformity	0.1135

original_glcm_DifferenceAverage	0.1146
original_gldm_HighGrayLevelEmphasis	0.1153
original_firstorder_InterquartileRange	0.1157
original_glcm_Autocorrelation	0.1178
original_glrlm_HighGrayLevelRunEmphasis	0.1197
original_ngtdm_Strength	0.1203
original_glcm_DifferenceEntropy	0.1237
original_firstorder_Mean	0.1278
original_glcm_JointEntropy	0.1313
original_glcm_JointAverage	0.1324
original_glcm_SumAverage	0.1324
original_firstorder_Kurtosis	0.1329
original_glcm_Contrast	0.1348
original_shape_Sphericity	0.1411
original_firstorder_RobustMeanAbsoluteDeviation	0.1433
original_firstorder_Entropy	0.1452
original_gldm_LowGrayLevelEmphasis	0.1459
original_glcm_SumEntropy	0.1479
original_glrlm_GrayLevelNonUniformityNormalized	0.1488
original_glrlm_ShortRunLowGrayLevelEmphasis	0.1503
original_glszm_SizeZoneNonUniformityNormalized	0.1514
original_glrlm_ShortRunHighGrayLevelEmphasis	0.1524
original_glcm_DifferenceVariance	0.1526
original_glrlm_LowGrayLevelRunEmphasis	0.1559
original_firstorder_Minimum	0.1564
original_glszm_HighGrayLevelZoneEmphasis	0.1569
original_glszm_SmallAreaHighGrayLevelEmphasis	0.1577
original_gldm_LargeDependenceLowGrayLevelEmphasis	0.1585
original_glszm_SmallAreaEmphasis	0.1593
original_glszm_SizeZoneNonUniformity	0.1636
original_firstorder_Skewness	0.1647
original_glcm_Imc1	0.1658
original_firstorder_10Percentile	0.1665
original_gldm_SmallDependenceHighGrayLevelEmphasis	0.1678
original_firstorder_MeanAbsoluteDeviation	0.1803
original_firstorder_RootMeanSquared	0.1829
original_glcm_SumSquares	0.1908
original_glcm_ClusterTendency	0.1966
original_gldm_GrayLevelVariance	0.1982
original_firstorder_Variance	0.1984
original_ngtdm_Complexity	0.2172
original_glcm_ClusterProminence	0.2222
original_glszm_LowGrayLevelZoneEmphasis	0.2326
original_gldm_DependenceEntropy	0.2385
original_glcm_ClusterShade	0.2423
original_glrlm_GrayLevelVariance	0.249
original_glszm_SmallAreaLowGrayLevelEmphasis	0.255
original_glrlm_LongRunLowGrayLevelEmphasis	0.2567
original_firstorder_TotalEnergy	0.2572

original_firstorder_Energy	0.2572
original_glszm_ZoneEntropy	0.2726
original_glcM_Imc2	0.2816
original_glcM_Correlation	0.2874
original_glszm_GrayLevelVariance	0.2944
original_glrM_RunEntropy	0.3066
original_glcM_MCC	0.3216
original_glszm_GrayLevelNonUniformityNormalized	0.4005