

Appendix 1

1. Rad-score (intra-tumoral ultrasound Radiomics model) = $0.3245283018867949 + 0.000366 * \text{intra_original_firstorder_Minimum} - 0.000609 * \text{intra_original_firstorder_TotalEnergy} + 0.038934 * \text{intra_original_glcm_Idmn} + 0.009054 * \text{intra_original_glcm_MCC} + 0.008807 * \text{intra_original_glrlm_LongRunHighGrayLevelEmphasis} + 0.035892 * \text{intra_original_glrlm_LowGrayLevelRunEmphasis} + 0.048566 * \text{intra_original_glrlm_RunEntropy} + 0.067070 * \text{intra_original_glszm_GrayLevelNonUniformity} - 0.072016 * \text{intra_original_glszm_LargeAreaHighGrayLevelEmphasis} + 0.019576 * \text{intra_original_glszm_SizeZoneNonUniformity} + 0.005535 * \text{intra_original_glszm_SmallAreaLowGrayLevelEmphasis} - 0.013511 * \text{intra_original_ngtdm_Contrast} + 0.168121 * \text{intra_original_shape_Elongation} + 0.113672 * \text{intra_original_shape_Maximum3DDiameter} + 0.055753 * \text{intra_original_shape_SurfaceVolumeRatio}$.

2. Rad-score (intra-tumoral combined peri-tumoral ultrasound Radiomics model) = $0.3245283018867948 + 0.010431 * \text{intra_original_firstorder_Minimum} - 0.012548 * \text{intra_original_firstorder_TotalEnergy} + 0.044222 * \text{intra_original_glcm_Contrast} + 0.038485 * \text{intra_original_glcm_Idmn} + 0.026819 * \text{intra_original_glcm_Imc1} - 0.035756 * \text{intra_original_gldm_GrayLevelNonUniformity} + 0.004343 * \text{intra_original_glrlm_LongRunHighGrayLevelEmphasis} + 0.036033 * \text{intra_original_glrlm_LowGrayLevelRunEmphasis} + 0.032856 * \text{intra_original_glrlm_RunEntropy} + 0.001761 * \text{intra_original_glrlm_RunPercentage} + 0.045726 * \text{intra_original_glrlm_ShortRunEmphasis} - 0.054379 * \text{intra_original_glszm_LargeAreaHighGrayLevelEmphasis} + 0.038748 * \text{intra_original_glszm_SizeZoneNonUniformity} - 0.057946 * \text{intra_original_glszm_ZoneEntropy} - 0.043282 * \text{intra_original_ngtdm_Busyness} - 0.007698 * \text{intra_original_ngtdm_Contrast} + 0.042842 * \text{intra_original_ngtdm_Strength} + 0.045331 * \text{intra_original_shape_SurfaceVolumeRatio} + 0.114245 * \text{peri_original_firstorder_10Percentile} - 0.096648 * \text{peri_original_firstorder_Maximum} - 0.062812 * \text{peri_original_firstorder_Minimum} - 0.011152 * \text{peri_original_firstorder_RobustMeanAbsoluteDeviation} - 0.017004 * \text{peri_original_glcm_ClusterProminence} + 0.135194 * \text{peri_original_glcm_Idn} - 0.021447 * \text{peri_original_glcm_Imc1} + 0.018190 * \text{peri_original_glcm_MaximumProbability} - 0.073709 * \text{peri_original_gldm_DependenceVariance} + 0.010953 * \text{peri_original_glrlm_GrayLevelNonUniformity} - 0.069274 * \text{peri_original_glrlm_LongRunLowGrayLevelEmphasis} + 0.071068 * \text{peri_original_glszm_GrayLevelNonUniformity} - 0.016455 * \text{peri_original_glszm_GrayLevelVariance} + 0.088708 * \text{peri_original_glszm_LowGrayLevelZoneEmphasis} + 0.105085 * \text{peri_original_glszm_ZoneEntropy} - 0.040601 * \text{peri_original_glszm_ZoneVariance} + 0.013239 * \text{peri_original_ngtdm_Busyness} - 0.003644 * \text{peri_original_ngtdm_Coarseness} + 0.160328 * \text{peri_original_shape_Elongation} - 0.006252 * \text{peri_original_shape_SurfaceVolumeRatio} + 0.157836 * \text{peri_original_shape_VoxelVolume}$