

## Appendix 1 Pyradiomics configuration for reproducibility experiments

##### PyRadiomics Supplementary Configuration #####

# Hardware environment

hardware:

CPU: "11th Gen Intel(R) Core(TM) i7-11800H @ 2.30GHz"

RAM: "16 GB"

# Image types and feature classes

imageType:

Original: {}

featureClass:

shape:

- Elongation
- Flatness
- LeastAxisLength
- MajorAxisLength
- Maximum2DDiameterColumn
- Maximum2DDiameterRow
- Maximum2DDiameterSlice
- Maximum3DDiameter
- MeshVolume
- MinorAxisLength
- Sphericity
- SurfaceArea
- SurfaceVolumeRatio

firstorder:

- 10Percentile
- 90Percentile
- Energy
- Entropy
- InterquartileRange
- Kurtosis
- Maximum
- Mean
- MeanAbsoluteDeviation
- Median
- Minimum
- Range
- RobustMeanAbsoluteDeviation
- RootMeanSquared
- Skewness
- Uniformity
- Variance
- TotalEnergy

gldm:

- Autocorrelation
- JointAverage
- ClusterProminence
- ClusterShade
- ClusterTendency
- Contrast
- Correlation
- DifferenceAverage
- DifferenceEntropy
- DifferenceVariance
- JointEnergy
- JointEntropy
- Imc1
- Imc2
- Idm
- Idmn
- Id
- Idn
- InverseVariance
- MaximumProbability
- SumEntropy
- MCC
- SumSquares

glrlm: {}

glszm: {}

gldm: {}

ngtdm: {}

# Processing settings

settings:

resampling:

interpolator: "sitkBSpline"

resampledPixelSpacing: [0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 3, 5] # voxel spacing tested in mm

normalization:

applyOptions: [Yes, No] # Whether intensity normalization was applied

normalizeScale: 100 # Scale used when normalization is applied

discretization:

binCountOptions: [8, 16, 32, 64, 128, 256, 512] # for relative discretization

binWidthOptions: [1, 5, 10, 20, 25, 50, 75, 100] # for absolute discretization

label: 1 # ROI label used for feature extraction

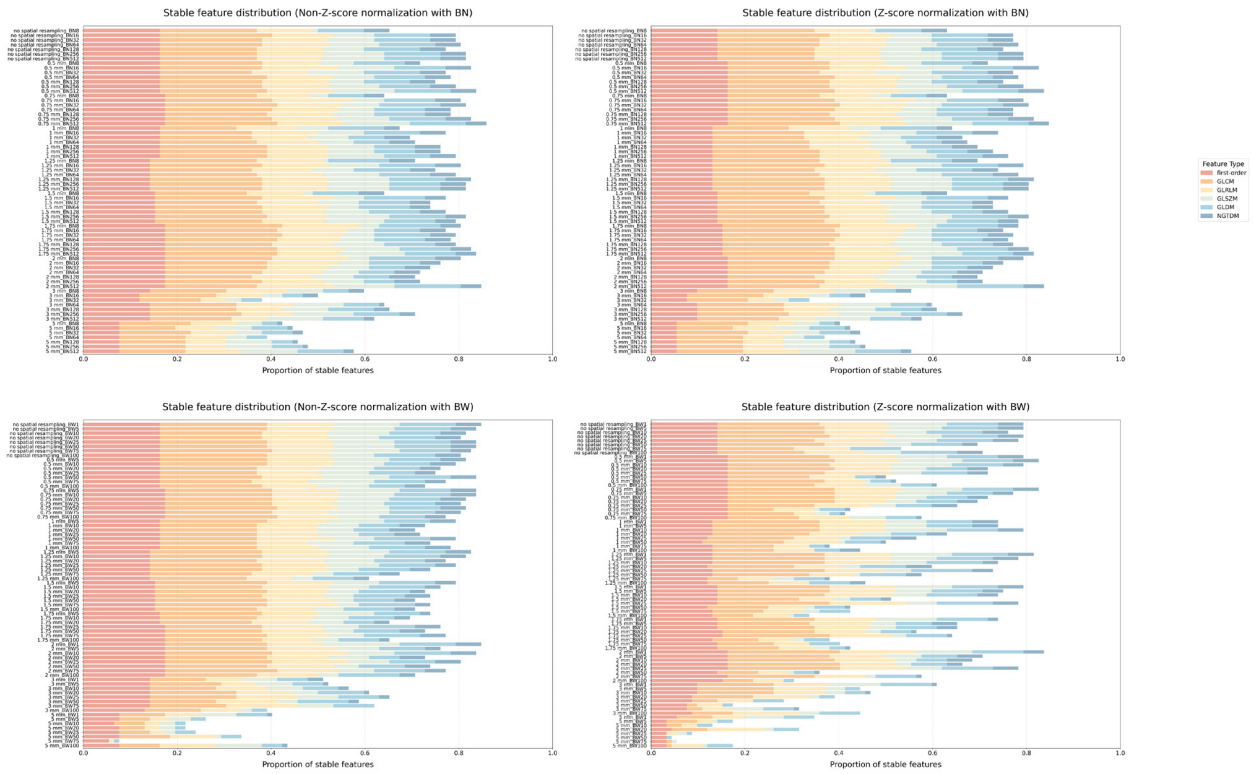
**Table S1** Intensity statistics of five ROIs in the representative T1-weighted sequence

ROI	Mean $\pm$ SD	Minimum	Maximum
ROI 1	180.94 $\pm$ 251.09	0.00	1,703.88
ROI 2	1,332.97 $\pm$ 290.60	490.24	1,859.32
ROI 3	1,336.45 $\pm$ 300.27	322.84	1,871.27
ROI 4	538.13 $\pm$ 256.78	11.96	1,210.65
ROI 5	1,062.55 $\pm$ 343.22	206.26	1,826.43

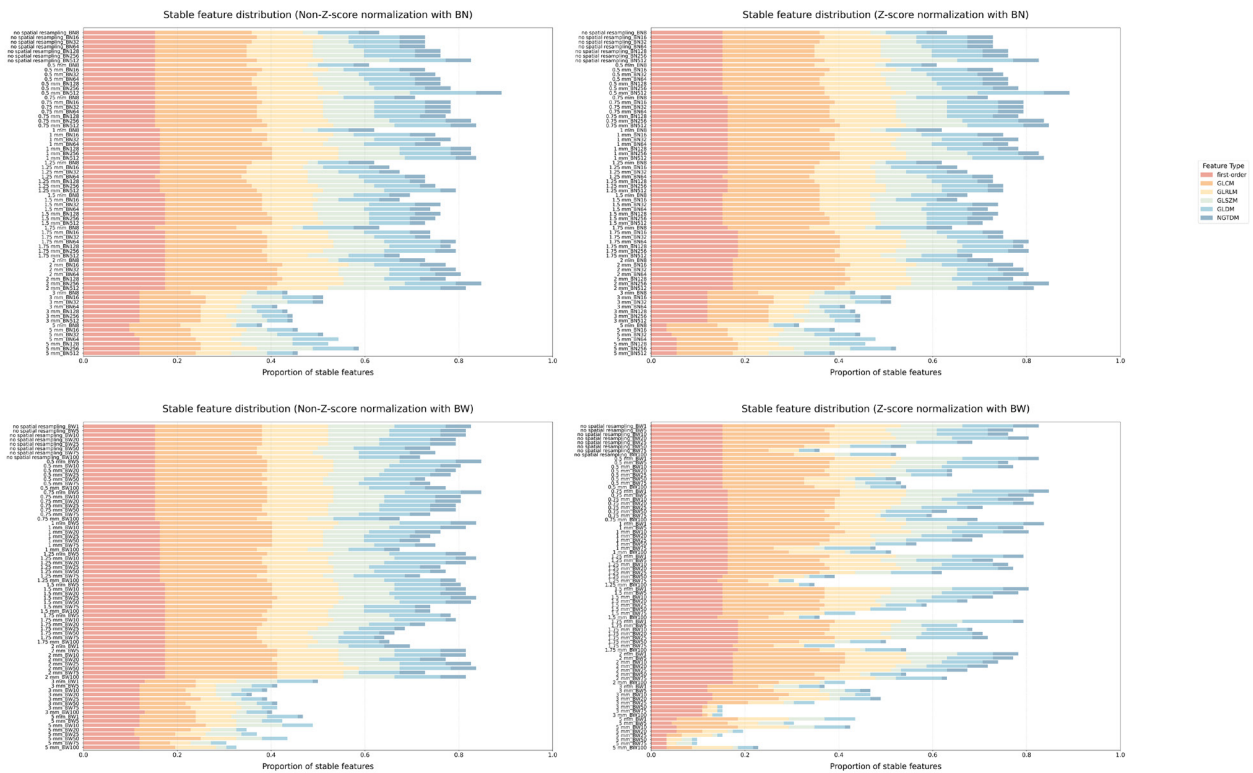
**Table S2** List of 92 radiomics features that were extracted from MR images

Feature category	Radiomics features
First-order features	10Percentile, 90Percentile, Energy, Entropy, InterquartileRange, Kurtosis, Maximum, Mean, MeanAbsoluteDeviation, Median, Minimum, Range, RobustMeanAbsoluteDeviation, RootMeanSquared, Skewness, Uniformity, Variance, TotalEnergy
GLCM	Autocorrelation, JointAverage, ClusterProminence, ClusterShade, ClusterTendency, Contrast, Correlation, DifferenceAverage, DifferenceEntropy, DifferenceVariance, JointEnergy, JointEntropy, Imc1, Imc2, Idm, Idmn, Id, Idn, InverseVariance, MaximumProbability, SumEntropy, MCC, SumSquares
GLRLM	GrayLevelNonUniformity, GrayLevelNonUniformityNormalized, GrayLevelVariance, HighGrayLevelRunEmphasis, LongRunEmphasis, LongRunHighGrayLevelEmphasis, LongRunLowGrayLevelEmphasis, LowGrayLevelRunEmphasis, RunEntropy, RunLengthNonUniformity, RunLengthNonUniformityNormalized, RunPercentage, RunVariance, ShortRunEmphasis, ShortRunHighGrayLevelEmphasis, ShortRunLowGrayLevelEmphasis
GLSZM	GrayLevelNonUniformity, GrayLevelNonUniformityNormalized, GrayLevelVariance, HighGrayLevelZoneEmphasis, LargeAreaEmphasis, LargeAreaHighGrayLevelEmphasis, LargeAreaLowGrayLevelEmphasis, LowGrayLevelZoneEmphasis, SizeZoneNonUniformity, SizeZoneNonUniformityNormalized, SmallAreaEmphasis, SmallAreaHighGrayLevelEmphasis, SmallAreaLowGrayLevelEmphasis, ZoneEntropy, ZonePercentage, ZoneVariance,
GLDM	DependenceEntropy, DependenceNonUniformity, DependenceNonUniformityNormalized, DependenceVariance, GrayLevelNonUniformity, GrayLevelVariance, HighGrayLevelEmphasis, LargeDependenceEmphasis, LargeDependenceHighGrayLevelEmphasis, LargeDependenceLowGrayLevelEmphasis, LowGrayLevelEmphasis, SmallDependenceEmphasis, SmallDependenceHighGrayLevelEmphasis, SmallDependenceLowGrayLevelEmphasis,
NTGDM	Busyness, Coarseness, Complexity, Contrast, Strength

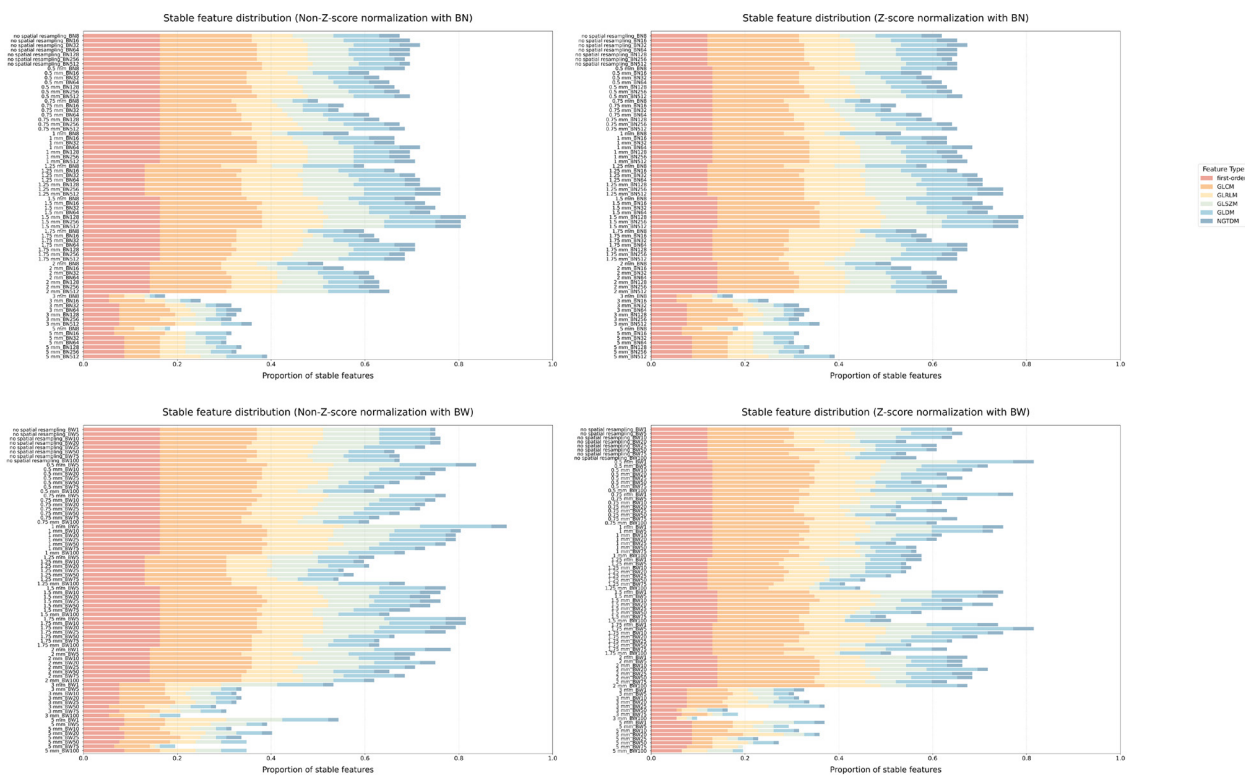
Proportion of Stable Radiomics Features Across Preprocessing Strategies for Test-retest Repeatability in T1-Weighted Images



Proportion of Stable Radiomics Features Across Preprocessing Strategies for Test-retest Repeatability in T2-Weighted Images

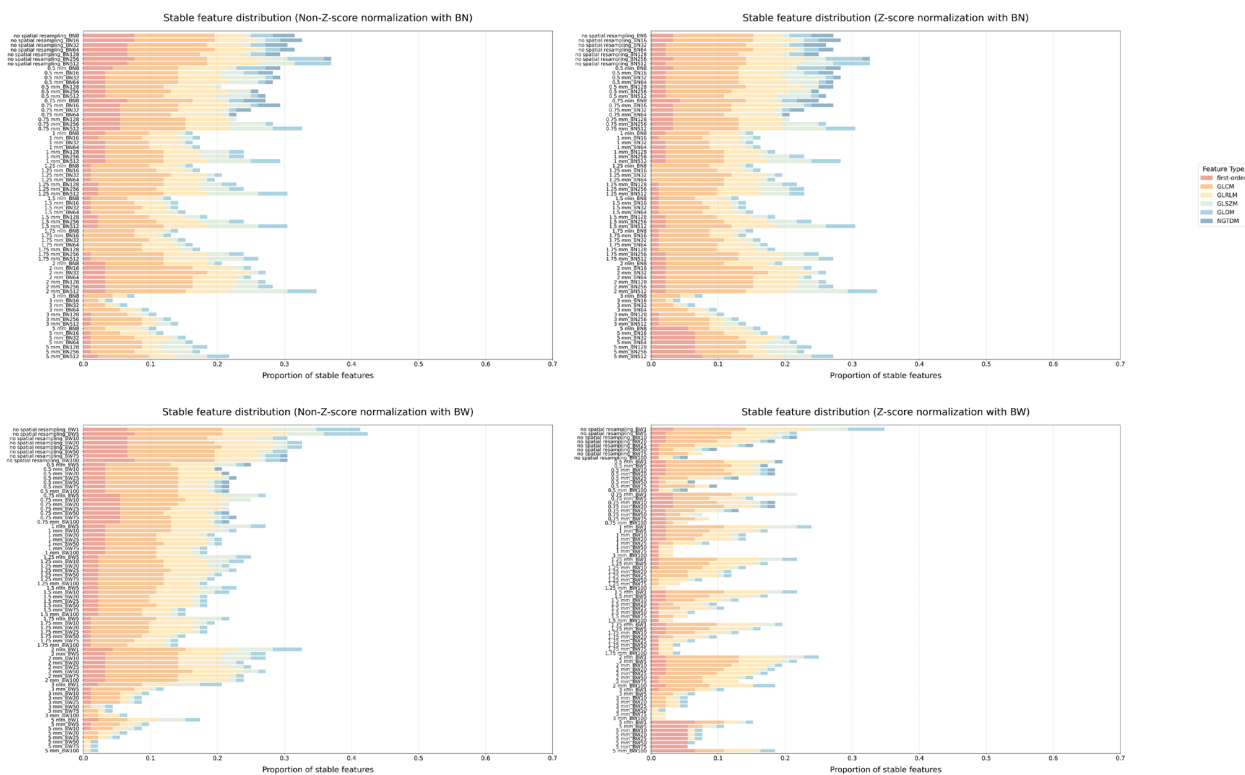


Proportion of Stable Radiomics Features Across Preprocessing Strategies for Test-retest Repeatability in FLAIR Images

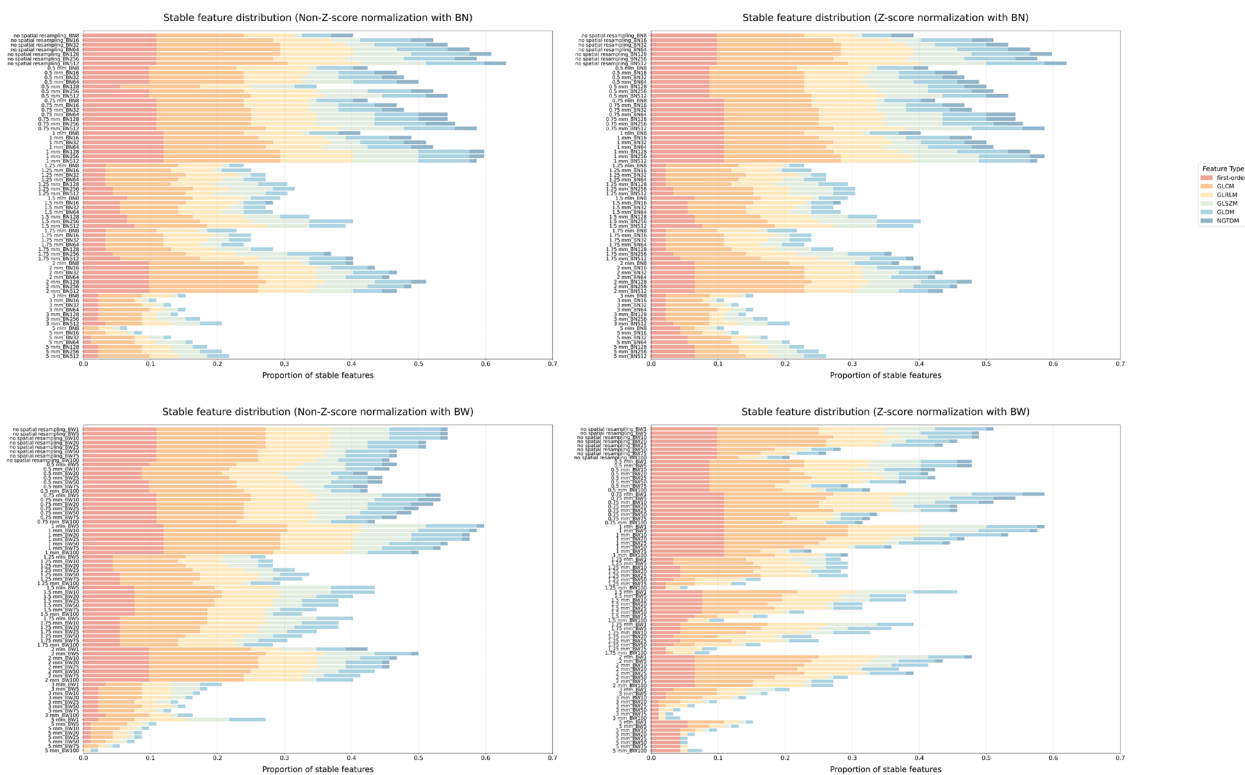


**Figure S1** Horizontal bar plots showing the proportion distribution of stable radiomics features across first-order, GLCM, GLRLM, GLSZM, GLDM, and NGTDM categories for test-retest repeatability in T1-weighted, T2-weighted, and FLAIR sequences.

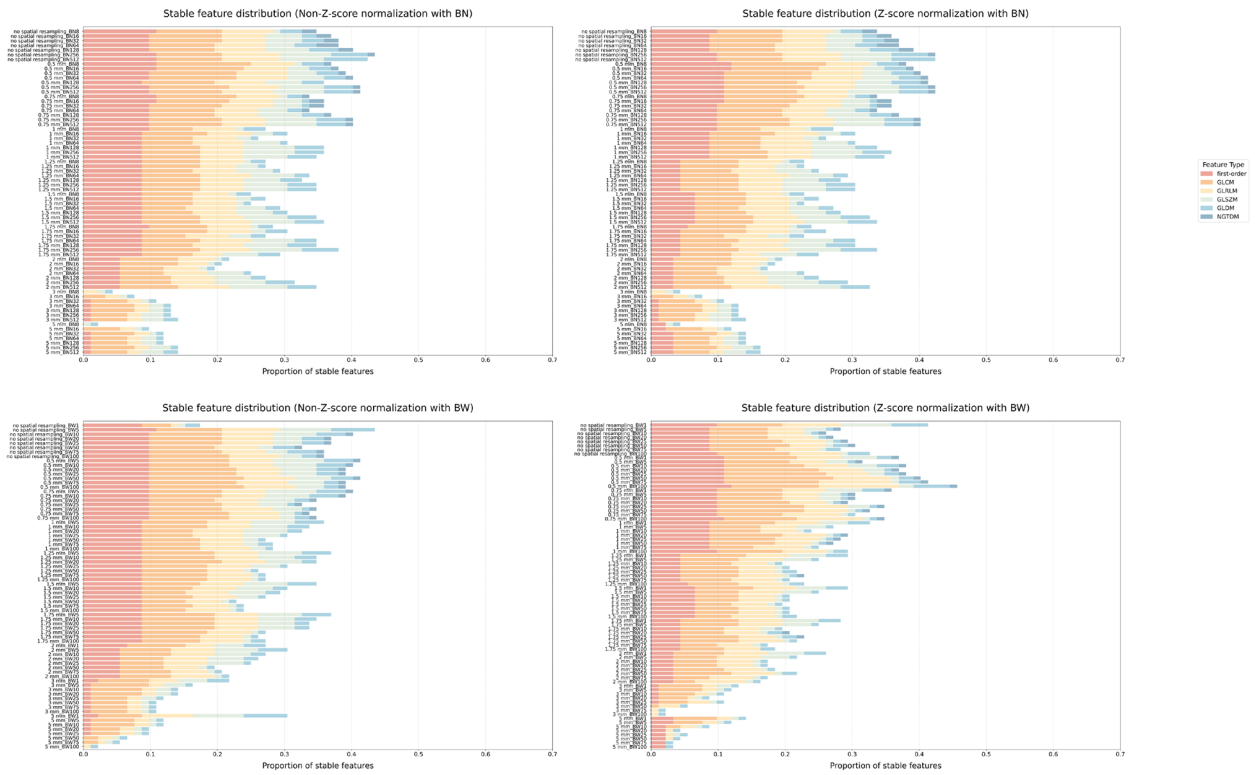
Proportion of Stable Radiomics Features Across Preprocessing Strategies for Longitudinal Repeatability in T1-Weighted Images



Proportion of Stable Radiomics Features Across Preprocessing Strategies for Longitudinal Repeatability in T2-Weighted Images

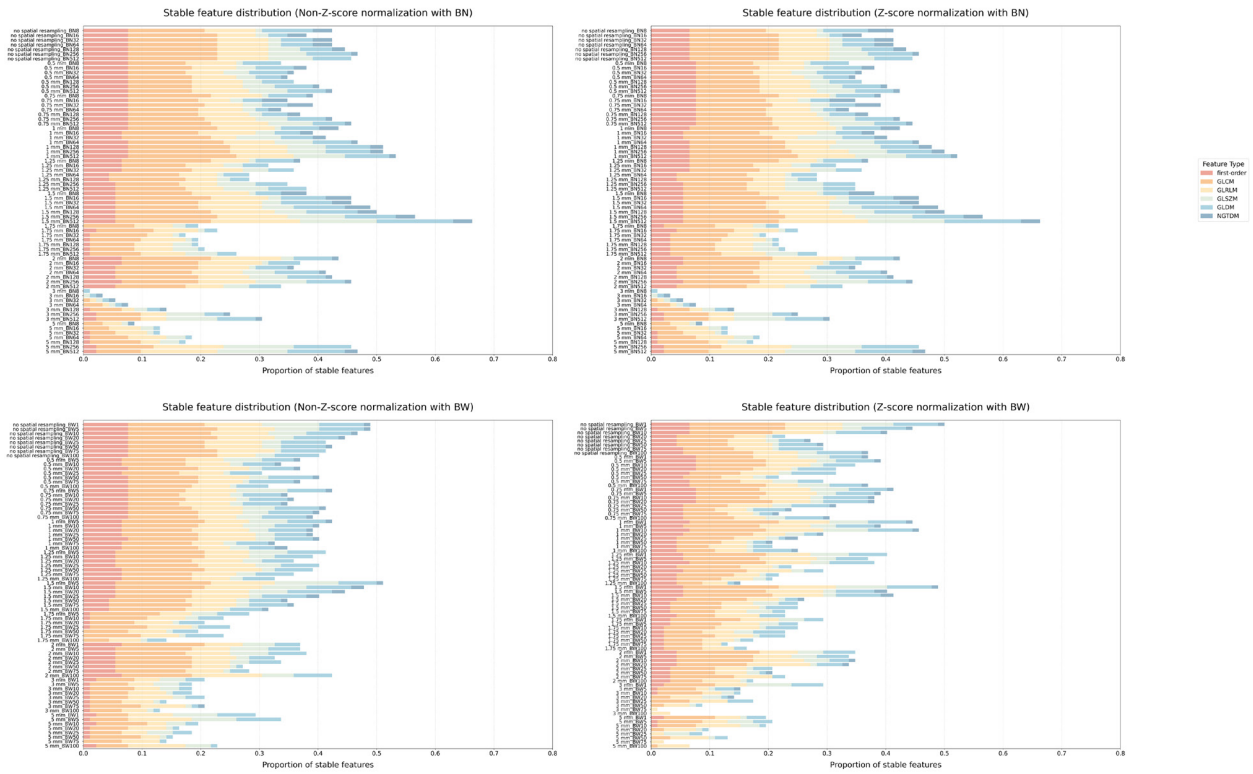


Proportion of Stable Radiomics Features Across Preprocessing Strategies for Longitudinal Repeatability in FLAIR Images

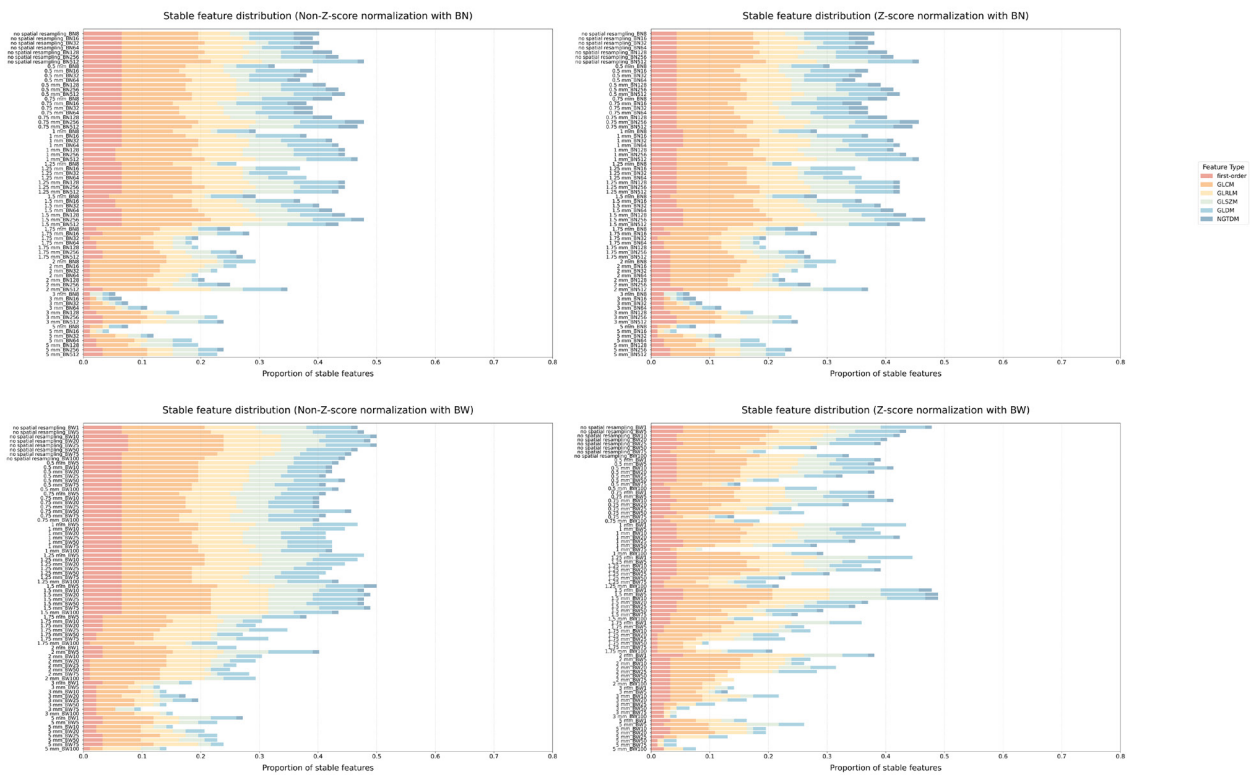


**Figure S2** Horizontal bar plots showing the proportion distribution of stable radiomics features across first-order, GLCM, GLRLM, GLSZM, GLDM, and NGTDM categories for longitudinal repeatability in T1-weighted, T2-weighted, and FLAIR sequences.

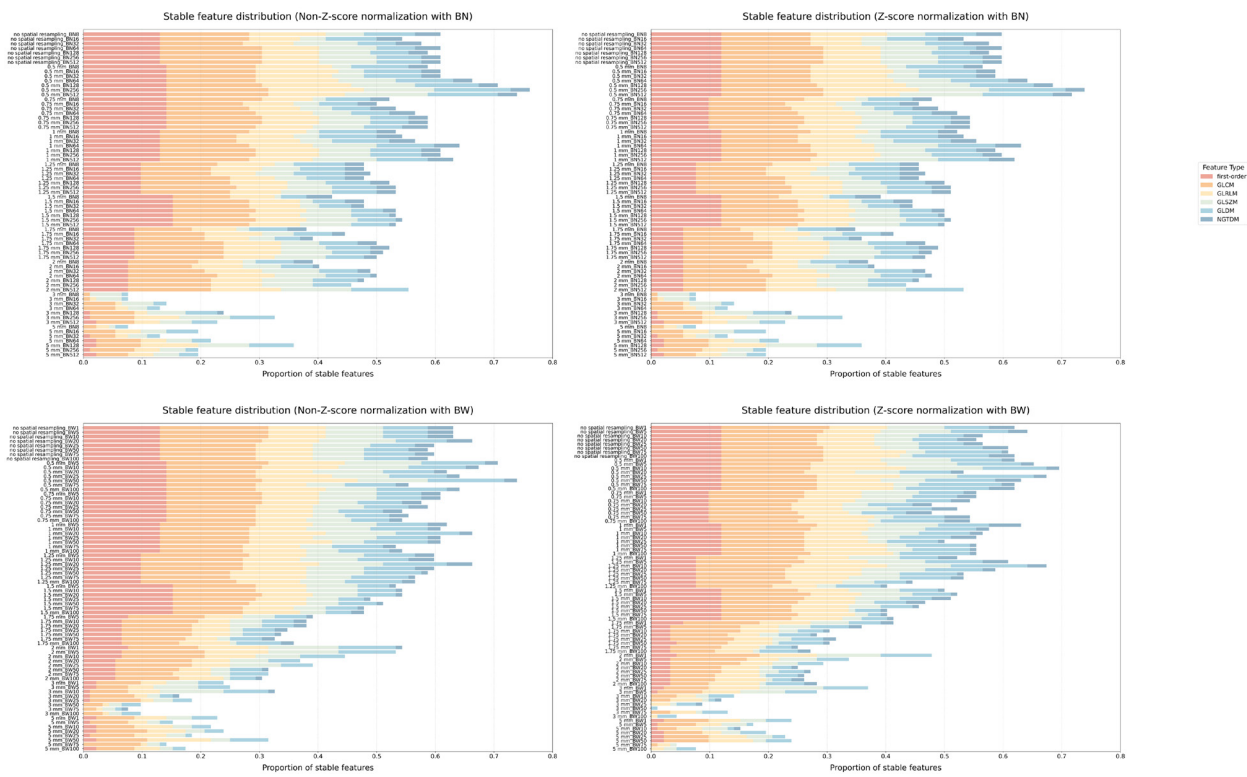
Proportion of Stable Radiomics Features Across Preprocessing Strategies for Inter-platform Rroducibility in T1-Weighted Images



Proportion of Stable Radiomics Features Across Preprocessing Strategies for Inter-platform Rroducibility in T2-Weighted Images



Proportion of Stable Radiomics Features Across Preprocessing Strategies for Inter-platform Reproducibility in FLAIR Images



**Figure S3** Horizontal bar plots showing the proportion distribution of stable radiomics features across first-order, GLCM, GLRLM, GLSZM, GLDM, and NGTDM categories for inter-platform reproducibility in T1-weighted, T2-weighted, and FLAIR sequences.