|  |  |
| --- | --- |
| Rank | Feature name |
| 1 | location |
| 2 | original\_shape\_Sphericity |
| 3 | wavelet-HLL\_gldm\_LargeDependenceHighGrayLevelEmphasis |
| 4 | wavelet-HLL\_glrlm\_ShortRunHighGrayLevelEmphasis |
| 5 | original\_shape\_Flatness |
| 6 | wavelet-HLL\_glcm\_ClusterTendency |
| 7 | wavelet-LLL\_firstorder\_MeanAbsoluteDeviation |
| 8 | wavelet-HLL\_gldm\_LargeDependenceEmphasis |
| 9 | wavelet-HLL\_glcm\_Correlation |
| 10 | wavelet-HLH\_gldm\_DependenceEntropy |
| 11 | wavelet-HLL\_glcm\_ClusterProminence |
| 12 | wavelet-LLH\_gldm\_LargeDependenceEmphasis |
| 13 | wavelet-HHL\_gldm\_DependenceEntropy |
| 14 | original\_firstorder\_MeanAbsoluteDeviation |
| 15 | wavelet-LLH\_glrlm\_LongRunEmphasis |
| 16 | wavelet-HLH\_gldm\_DependenceNonUniformityNormalized |
| 17 | wavelet-LLL\_firstorder\_Variance |
| 18 | wavelet-HLH\_gldm\_DependenceVariance |
| 19 | wavelet-LLL\_firstorder\_90Percentile |
| 20 | wavelet-LLH\_glrlm\_RunLengthNonUniformityNormalized |
| 21 | wavelet-HLL\_glcm\_Contrast |
| 22 | wavelet-HLL\_glcm\_DifferenceAverage |
| 23 | wavelet-HLL\_glcm\_InverseVariance |
| 24 | wavelet-HLL\_glcm\_Idn |
| 25 | wavelet-HLL\_glcm\_Idm |
| 26 | wavelet-HLL\_glcm\_Id |
| 27 | wavelet-HLL\_glcm\_Idmn |
| 28 | wavelet-HLL\_ngtdm\_Complexity |
| 29 | wavelet-LLH\_glrlm\_LongRunHighGrayLevelEmphasis |
| 30 | wavelet-HLL\_glrlm\_RunLengthNonUniformityNormalized |
| 31 | wavelet-HHL\_gldm\_DependenceNonUniformityNormalized |
| 32 | wavelet-HHH\_gldm\_DependenceEntropy |
| 33 | wavelet-LLH\_glrlm\_RunPercentage |
| 34 | original\_firstorder\_90Percentile |
| 35 | wavelet-LLH\_glrlm\_ShortRunEmphasis |
| 36 | wavelet-HLL\_glrlm\_ShortRunEmphasis |
| 37 | wavelet-HLL\_ngtdm\_Contrast |
| 38 | wavelet-LLL\_firstorder\_RobustMeanAbsoluteDeviation |
| 39 | wavelet-LHH\_gldm\_DependenceEntropy |
| 40 | wavelet-HHL\_gldm\_DependenceVariance |
| 41 | wavelet-LLH\_gldm\_DependenceNonUniformityNormalized |
| 42 | wavelet-HLL\_glrlm\_RunPercentage |
| 43 | wavelet-LHH\_gldm\_DependenceNonUniformityNormalized |
| 44 | wavelet-LLH\_gldm\_DependenceEntropy |
| 45 | gradient\_firstorder\_RobustMeanAbsoluteDeviation |
| 46 | wavelet-LLH\_glrlm\_RunEntropy |
| 47 | original\_firstorder\_Variance |
| 48 | wavelet-LHL\_glcm\_ClusterTendency |
| 49 | wavelet-LHL\_glcm\_ClusterProminence |
| 50 | gradient\_firstorder\_InterquartileRange |
| 51 | wavelet-HLL\_gldm\_DependenceNonUniformityNormalized |
| 52 | wavelet-HHH\_gldm\_DependenceNonUniformityNormalized |
| 53 | wavelet-LHL\_gldm\_DependenceEntropy |
| 54 | wavelet-HHH\_gldm\_DependenceVariance |
| 55 | wavelet-LHL\_glcm\_Correlation |
| 56 | original\_firstorder\_RobustMeanAbsoluteDeviation |
| 57 | wavelet-HLL\_gldm\_DependenceEntropy |
| 58 | wavelet-LLH\_gldm\_LargeDependenceHighGrayLevelEmphasis |
| 59 | wavelet-LLH\_glcm\_ClusterTendency |
| 60 | wavelet-HLL\_glcm\_SumEntropy |
| 61 | gradient\_firstorder\_90Percentile |
| 62 | wavelet-LLH\_glrlm\_ShortRunHighGrayLevelEmphasis |
| 63 | wavelet-LLL\_firstorder\_InterquartileRange |
| 64 | wavelet-LHL\_ngtdm\_Complexity |
| 65 | wavelet-LHH\_gldm\_DependenceVariance |
| 66 | wavelet-LHL\_gldm\_DependenceNonUniformityNormalized |
| 67 | wavelet-LLH\_glrlm\_RunVariance |
| 68 | wavelet-LHL\_glcm\_Id |
| 69 | wavelet-LHL\_glcm\_Idm |
| 70 | wavelet-LHL\_glcm\_Idn |
| 71 | wavelet-LHL\_glcm\_DifferenceAverage |
| 72 | wavelet-LHL\_glcm\_Contrast |
| 73 | wavelet-LHL\_glcm\_InverseVariance |
| 74 | wavelet-LHL\_glcm\_Idmn |
| 75 | wavelet-LLH\_glrlm\_LongRunLowGrayLevelEmphasis |
| 76 | wavelet-LHL\_ngtdm\_Contrast |
| 77 | Gender |
| 78 | wavelet-LLH\_ngtdm\_Contrast |
| 79 | original\_firstorder\_InterquartileRange |
| 80 | wavelet-LLH\_ngtdm\_Complexity |
| 81 | original\_shape\_Elongation |
| 82 | original\_gldm\_DependenceEntropy |
| 83 | gradient\_gldm\_DependenceEntropy |
| 84 | wavelet-LLL\_gldm\_DependenceEntropy |
| 85 | original\_gldm\_DependenceNonUniformityNormalized |
| 86 | gradient\_gldm\_DependenceNonUniformityNormalized |
| 87 | wavelet-LLL\_gldm\_DependenceNonUniformityNormalized |
| 88 | wavelet-LLH\_glcm\_Correlation |
| 89 | wavelet-HLL\_glrlm\_RunEntropy |
| 90 | wavelet-HLL\_glrlm\_LongRunHighGrayLevelEmphasis |
| 91 | original\_gldm\_DependenceVariance |
| 92 | gradient\_gldm\_DependenceVariance |
| 93 | wavelet-LLL\_gldm\_DependenceVariance |
| 94 | wavelet-LLH\_gldm\_DependenceVariance |
| 95 | wavelet-LLH\_glcm\_Idn |
| 96 | wavelet-LLH\_glcm\_Id |
| 97 | wavelet-LLH\_glcm\_Idm |
| 98 | wavelet-LLH\_glcm\_Idmn |
| 99 | wavelet-LLH\_glcm\_InverseVariance |
| 100 | wavelet-LLH\_glcm\_Contrast |

**Table S1** Top 100 Features` name and rank. Feature is ranked by DXscore value.