

**Table S1.** All features considered for each family name feature.

Family Name	Feature Name
Gray Level Co-occurrence Matrix (25) GLCM (3D:mrg)	Joint maximum, Joint average, Joint variance, Joint entropy, Difference average, Difference variance, Difference entropy, Sum average, Sum variance, Sum entropy, Angular second moment, Contrast, Dissimilarity, Inverse difference, Normalised inverse difference, Inverse difference moment, Normalised inverse difference moment, Inverse variance, Correlation, Autocorrelation, Cluster tendency, Cluster shade, Cluster prominence, Information correlation 1, Information correlation 2.
Gray Level Distance Zone Matrix (16) GLDZM (3D)	Small distance emphasis, Large distance emphasis, Low grey level zone emphasis, High grey level zone emphasis, Small distance low grey level emphasis, Small distance high grey level emphasis, Large distance low grey level emphasis, Large distance high grey level emphasis, Grey level non-uniformity, Normalised grey level non-uniformity, Zone distance non-uniformity, Normalized zone distance non-uniformity, Zone percentage, Grey level variance, Zone distance variance, Zone distance entropy.
Gray Level Run Length Matrix (16) GLRLM (3D:mrg)	Short runs emphasis, Long runs emphasis, Low grey level run emphasis, High grey level run emphasis, Short run low grey level emphasis, Short run high grey level emphasis, Long run low grey level emphasis, Long run high grey level emphasis, Grey level non-uniformity, Normalized grey level non-uniformity, Run length non-uniformity, Normalized run length non-uniformity, Run percentage, Grey level variance, Run length variance, Run entropy.
Gray Level Size Zone Matrix (16) GLSZM (3D)	Small zone emphasis, Large zone emphasis, Low grey level zone emphasis, High grey level zone emphasis, Small zone low grey level emphasis, Small zone high grey level emphasis, Large zone low grey level emphasis, Large zone high grey level emphasis, Grey level non-uniformity, Normalised grey level non-uniformity, Zone size non-uniformity, Normalised zone size non-uniformity, Zone percentage, Grey level variance, Zone size variance, Zone size entropy
Neighborhood Gray Level Dependence Matrix (17) NGLDM (3D)	Low dependence emphasis, High dependence emphasis, Low grey level count emphasis, High grey level count emphasis, Low dependence low grey level emphasis, Low dependence high grey level emphasis, High dependence low grey level emphasis, High dependence high grey level emphasis, Grey level non-uniformity, Normalised grey level non-uniformity, Dependence count non-uniformity, Normalised dependence count non-uniformity, Dependence count percentage, Grey level variance, Dependence count variance, Dependence count entropy, Dependence count energy
Neighborhood Gray Tone Dependence Matrix (5) NGTDM (3D)	Coarseness, Contrast, Busyness, Complexity, Strength
Intensity-based Statistics (18) IS	Mean intensity, Intensity variance, Intensity skewness, (Excess) intensity kurtosis, Median intensity, Minimum intensity, 10th intensity percentile, 90th intensity percentile, Maximum intensity, Intensity interquartile range, Intensity range, Intensity-based mean absolute deviation, Intensity-based robust mean absolute deviation, Intensity-based median absolute deviation, Intensity-based coefficient of variation, Intensity-based quartile coefficient of dispersion, Intensity-based energy, Root mean square intensity
Intensity Histogram (23) IH	Mean discretised intensity, Discretised intensity variance, Discretised intensity skewness, (Excess) discretised intensity kurtosis, Median discretised intensity, Minimum discretized intensity, 10th discretised intensity percentile, 90th discretised intensity percentile, Maximum discretized intensity, Intensity histogram mode, Discretised intensity interquartile range, Discretized intensity range, Intensity histogram mean absolute deviation, Intensity histogram robust mean absolute deviation, Intensity histogram median absolute deviation, Intensity histogram coefficient of variation, Intensity histogram quartile coefficient of dispersion, Discretised intensity entropy, Discretised intensity uniformity, Maximum histogram gradient, Maximum histogram gradient intensity, Minimum histogram gradient, Minimum histogram gradient intensity

Intensity Volume Histogram (7)		
	IVH	Volume at intensity fraction 10, Volume at intensity fraction 90, Intensity at volume fraction 10, Intensity at volume fraction 90, Volume fraction difference between intensity fractions, Intensity fraction difference between volume fractions, Area under the IVH curve
Morphological (20)	MORPH	Volume (mesh), Volume (voxel counting), Surface area (mesh), Surface to volume ratio, Compactness 1, Compactness 2, Spherical disproportion, Sphericity, Asphericity, Centre of mass shift, Maximum 3D diameter, Major axis length, Minor axis length, Least axis length, Elongation, Flatness, Volume density (axis-aligned bounding box), Area density (axis-aligned bounding box), Volume density (oriented minimum bounding box), Area density (oriented minimum bounding box)