

Segmentation Labels and Radiomic Features for the Pre-operative Scans of the TCGA-LGG collection (BraTS-TCGA-LGG)

Summary

This data container describes both computer-aided and manually-corrected segmentation labels for the pre-operative multi-institutional scans of [The Cancer Genome Atlas \(TCGA\) Low Grade Glioma \(LGG\) collection](#), publicly available in The Cancer Imaging Archive (TCIA), coupled with a rich panel of radiomic features along with their corresponding skull-stripped and co-registered multimodal (i.e. T1, T1-Gd, T2, T2-FLAIR) magnetic resonance imaging (MRI) volumes in NIfTI format. Pre-operative multimodal MRI scans were identified in the TCGA-LGG collection via radiological assessment. These scans were initially skull-stripped and co-registered, before their tumor segmentation labels were produced by an automated hybrid generative-discriminative method, ranked first during the International multimodal BRAIn Tumor Segmentation challenge (BRATS 2015). These segmentation labels were revised and any label misclassifications were manually corrected by an expert board-certified neuroradiologist. The final labels were used to extract a rich panel of imaging features, including intensity, volumetric, morphologic, histogram-based and textural parameters, as well as spatial information and diffusion properties extracted from glioma growth models. The generated computer-aided and manually-revised labels enable quantitative computational and clinical studies without the need to repeat manual annotations whilst allowing for comparison across studies. They can also serve as a set of manually-annotated gold standard labels for performance evaluation in computational challenges. The provided panel of radiomic features may facilitate research integrative of the molecular characterization offered by TCGA, and hence allow associations with molecular markers, clinical outcomes, treatment responses and other endpoints, by researchers without sufficient computational background to extract such features.

Data Access

Data Access

Please contact the [helpdesk](#) to request access to the **Test** arm of the NIfTI data files (43 Participants, 366 MB).

Data Type	Download all or Query/Filter	License
Processed images with segmentations and radiomic features Training set (zip, 536 MB, 65 subjects, 387 images)	Download (Requires IBM-Aspera-Connect plugin)	CC BY 3.0
BRATS 2018 Test Data Set (zip, 366 MB, 43 subjects, 255 images)	Please contact the helpdesk to request access to these files.	TCIA Restricted

Collections Used in this Third Party Analysis

Below is a list of the Collections used in these analyses:

Source Data Type	Download all or Query/Filter	License
Corresponding Original Images from TCGA-LGG (DICOM, 8.5 GB, 108 Subjects)	Download (Requires NBIA Data Retriever)	TCIA Restricted

Please (for DICOM format files) request both Collections [TCGA-LGG](#) and [BraTS-TCGA-LGG](#) in your Agreement.

- [TCGA-LGG](#)

Detailed Description

Detailed Description

Data resulting from this experiment is available in the following formats:

- (source data in DICOM image format)
- Processed images with segmentations (NIFTI) and radiomic features (CSV):
 - TrainingProcessed images with segmentations and radiomic features - 65 subjects (NIFTI, zip, 536 MB)
 - BraTS Test Data Set - 43 subjects (NIFTI, zip, 366 MB)

Please contact help@cancerimagingarchive.net with any questions regarding usage.

Citations & Data Usage Policy

Citations & Data Usage Policy

Users must abide by the [TCIA Data Usage Policy and Restrictions](#). Attribution should include references to the following citations:



Data Citation

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Other Publications Using This Data

TCIA maintains [a list of publications](#) which leverage TCIA data. If you have a publications you'd like to add please [contact TCIA's Helpdesk](#).

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