

DICOM-SEG Conversions for TCGA-LGG and TCGA-GBM Segmentation Datasets

Description

This dataset contains DICOM-SEG (DSO) conversions of the [Segmentation Labels and Radiomic Features for the Pre-operative Scans of the TCGA-LGG collection](#) and [Segmentation Labels and Radiomic Features for the Pre-operative Scans of the TCGA-GBM collection](#) analysis datasets.

The MR volumes and segmentations provided in the original segmentation datasets (T1 pre-contrast, T1 post-contrast, T2, FLAIR) are in NIFTI format, co-registered to an atlas space, and re-sampled to 1mm isotropic resolution. This dataset contains DICOM-SEG versions of the same segmentations, transformed back into the original patient resolutions and orientations found in the TCIA's [TCGA-GBM](#) and [TCGA-LGG](#) datasets. This allows users to extract features from MR sequences without introducing interpolation artifacts from isotropic resampling.

The process for creating these DSO objects is as follows. Patient data from the original NIFTI datasets were registered and resampled from isotropic space to patient space and resolution using [3DSlicer's BRAINSFit module](#). The affine transformation files from these registrations are used to register and resample both the semi-automatic and automatic NIFTI segmentations into the spaces of each original MR DICOM dataset. These transformed NIFTI segmentations are then converted into DICOM-SEG datasets using the software package [dcmqi](#). Because each MR sequence has a unique patient space and resolution, the resulting dataset contains four DSO segmentations for each original NIFTI segmentation.

Included in this dataset are the converted DSO volumes, DSO metadata values used in the DSO conversion program [dcmqi](#), and affine transformation files from isotropic space to the original patient space saved in ITK format. Original patient DICOM volumes are also available for download below. A key is provided that maps individual DSO objects to their corresponding DICOM Series UID, to facilitate easier data analysis.

Data Access

Data Access

Click the **Download** button to save a ".tcia" manifest file to your computer, which you must open with the [NBIA Data Retriever](#)

Data Type	Download all or Query/Filter
TCGA-LGG images - 108 subjects (DICOM, 8.5 GB)	Download
TCGA-GBM images - 135 subjects (DICOM, 6 GB)	Download
Segmentations - 3,278 files (ZIP, 42.1 MB)	Download
TCGA key mapping (CSV)	Download

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

Detailed Description

Detailed Description

Citations & Data Usage Policy

Citations & Data Usage Policy

These collections are freely available to browse, download, and use for commercial, scientific and educational purposes as outlined in the [Creative Commons Attribution 3.0 Unported License](#). Questions may be directed to help@cancerimagingarchive.net. Please be sure to acknowledge both this data set and TCIA in publications by including the following citations in your work:



Data Citation

Andrew Beers, Elizabeth Gerstner, Bruce Rosen, David Clunie, Steve Pieper, Andrey Fedorov, Jayashree Kalpathy-Cramer. (2018) DICOM-SEG Conversions for TCGA-LGG and TCGA-GBM Segmentation Datasets. The Cancer Imaging Archive. <https://doi.org/10.7937/TCIA.2018.ow6ce3ml>



TCIA Citation

Clark K, Vendt B, Smith K, Freymann J, Kirby J, Koppel P, Moore S, Phillips S, Maffitt D, Pringle M, Tarbox L, Prior F. (2013) **The Cancer Imaging Archive (TCIA): Maintaining and Operating a Public Information Repository**, Journal of Digital Imaging, Volume 26, Number 6 pp 1045-1057. DOI: [10.1007/s10278-013-9622-7](https://doi.org/10.1007/s10278-013-9622-7)

In addition to the dataset citation above, please be sure to cite the following if you utilize these data in your research:

i Publication Citation

Spyridon Bakas, Hamed Akbari, Aristeidis Sotiras, Michel Bilello, Michel Rozycki, Justin S Kirby, John B Freymann, Keyvan Farahani, Christos Davatzikos. "Advancing The Cancer Genome Atlas glioma MRI collections with expert segmentation labels and radiomic features", Nature Scientific Data, 4:170117 doi: 10.1038/sdata.2017.117 (2017). <https://www.nature.com/articles/sdata2017117>

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Other Publications Using This Data

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

Versions

Version 1 (Current): 2018/11/20

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TCGA key mapping (CSV)	