

Stanford DRO Toolkit: Digital Reference Objects for Standardization of Radiomic Features (DRO-Toolkit)

Summary

Redirection Notice

This page will redirect to <https://www.cancerimagingarchive.net/collection/dro-toolkit/> in about 5 seconds.

This is a sample collection of synthetic 3D Digital Reference Objects (DROs) intended for standardization of quantitative imaging feature extraction pipelines. We have developed a [software toolkit](#) for the creation of DROs with customizable size, shape, intensity, texture, and margin sharpness values. Using user-supplied input parameters, these objects are defined mathematically as continuous functions, discretized, and then saved as DICOM objects. This collection includes objects with a range of values for the various feature categories and many combinations of these categories.

Acknowledgements

We would like to acknowledge the individuals and institutions that contributed to the development and creation of these digital reference objects:

- Stanford University School of Medicine, Stanford, California, USA - Akshay Jaggi B.S. and Sandy Napel PhD from the Department of Radiology
- University of California, Los Angeles School of Medicine, Los Angeles, California, USA - Michael McNitt-Gray PhD from the Department of Radiology
- The University of Western Ontario, Department of Medical Biophysics - Sarah Mattonen PhD
- The National Cancer Institute Quantitative Imaging Network (QIN)

Data Access

Data Access

Data Type	Download all or Query/Filter	Licence
Images and Segmentations (DICOM, 5.0 GB)	Download Search (Requires NBIA Data Retriever .)	CC BY 3.0
Images and Segmentations (*.nii, ZIP, 64 files, 84.21 MB)	Download	CC BY 3.0

Additional Resources for this Dataset

The following external resources have been made available by the data submitters. These are not hosted or supported by TCIA, but may be useful to researchers utilizing this collection.

- https://github.com/riipl/dro_cli (Software toolkit for the creation of Digital Reference Objects)

Additional Resources for this Dataset

The NCI Cancer Research Data Commons (CRDC) provides access to additional data and a cloud-based data science infrastructure that connects data sets with analytics tools to allow users to share, integrate, analyze, and visualize cancer research data.

- [Imaging Data Commons \(IDC\)](#) (Imaging Data)

Third Party Analyses of this Dataset

TCIA encourages the community to [publish your analyses of our datasets](#). Below is a list of such third party analyses published using this Collection:

- [Standardization in Quantitative Imaging: A Multi-center Comparison of Radiomic Feature Values](#)

Detailed Description

Detailed Description

Image Statistics	
Modalities	CT, SEG
Number of Participants	32
Number of Studies	32
Number of Series	64
Number of Images	9632
Images Size (GB)	5.0 GB

The detailed description table applies to the DICOM files only. The NIFTI data are an additional 64 files, 84.21 MB.

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

Jaggi, A., Mattonen, S. A., McNitt-Gray, M., & Napel, S. (2020). **Stanford DRO Toolkit: Digital Reference Objects for Standardization of Radiomic Features** (Version 1) [Data set]. The Cancer Imaging Archive. <https://doi.org/10.7937/T062-8262>

Publication Citation

Jaggi, A., Mattonen, S. A., McNitt-Gray, M., & Napel, S. (2020). **Stanford DRO Toolkit: Digital Reference Objects for Standardization of Radiomic Features**. In Tomography (Vol. 6, Issue 2, pp. 111–117). MDPI AG. <https://doi.org/10.18383/j.tom.2019.00030>

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. **The Cancer Imaging Archive (TCIA): Maintaining and Operating a Public Information Repository**, Journal of Digital Imaging, Volume 26, Number 6, December, 2013, pp 1045-1057. DOI: <https://doi.org/10.1007/s10278-013-9622-7>

Acknowledgement

- David Geffen School of Medicine at UCLA - U01CA181156
- Stanford University School of Medicine – U01CA187947 and U24CA180927
- University of Michigan - U01CA232931
- University of Washington – R50CA211270, U01CA148131
- University of South Florida - U24CA180927, U01CA200464
- Moffitt Cancer Center – U01CA143062, U01CA200464, P30CA076292
- UC San Francisco - U01CA225427
- BC Cancer Research Centre - NSERC Discovery Grant: RGPIN-2019-06467
- Columbia University- U01CA225431
- Center for Biomedical Image Computing and Analytics at the University of Pennsylvania - U24CA189523, R01NS042645
- Massachusetts General Hospital- U01CA154601, U24CA180927

Other Publications Using This Data

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

Versions

Version 1 (Current): Updated 2020/04/09

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Images (NIfTI, zip)	Download