Pancreas-CT

Summary

The National Institutes of Health Clinical Center performed 82 abdominal contrast enhanced 3D CT scans (~70 seconds after intravenous contrast injection in portal-venous) from 53 male and 27 female subjects. Seventeen of the subjects are healthy kidney donors scanned prior to nephrectomy. The remaining 65 patients were selected by a radiologist from patients who neither had major abdominal pathologies nor pancreatic cancer lesions. Subjects' ages range from 18 to 76 years with a mean age of 46.8 ± 16.7. The CT scans have resolutions of 512x512 pixels with varying pixel sizes and slice thickness between 1.5 2.5 mm, acquired on Philips and Siemens MDCT scanners (120 kVp tube voltage).

A medical student manually performed slice-by-slice segmentations of the pancreas as ground-truth and these were verified/modified by an experienced radiologist.

Data Access

Data Access

Data Type	Download all or Query/Filter	License
Images (DICOM, 9.3 GB)	*Download Search* (Download requires NBIA Data Retriever)	CC BY 3.0
Manual Annotations (zip, 975 kB)	*Download*	CC BY 3.0

Click the Versions tab for more info about data releases.

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)

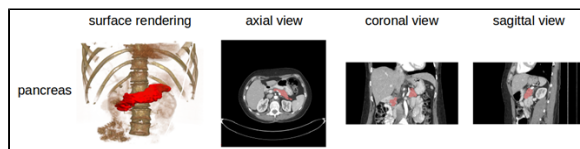Detailed Description

Detailed Description

Collection Statistics	

Modalities	CT
Number of Participants	80
Number of Studies	80
Number of Series	80
Number of Images	18,942
Image Size (GB)	9.3

Data Example

Note

The DICOM files were created from anonymized volumetric images (Analyze and NifTI) using this from ITK: *http://www.itk.org/Doxygen/html /Examples_2IO_2ImageReadDicomSeriesWrite_8cxx-example.html* .

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**
>
> Roth, H., Farag, A., Turkbey, E. B., Lu, L., Liu, J., & Summers, R. M. (2016). Data From Pancreas-CT (Version 2) [Data set]. The Cancer Imaging Archive. https://doi.org/10.7937/K9/TCIA.2016.tNB1kqBU

> ⓘ **Publication Citation**
>
> Roth HR, Lu L, Farag A, Shin H-C, Liu J, Turkbey EB, Summers RM. **DeepOrgan: Multi-level Deep Convolutional Networks for Automated Pancreas Segmentation**. N. Navab et al. (Eds.): MICCAI 2015, Part I, LNCS 9349, pp. 556–564, 2015. (arXiv link) https://doi.org/10.1007/978-3-319-24553-9_68

> **ⓘ 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

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. Below is a list of such publications using this Collection:

- Gibson, E., Giganti, F., Hu, Y., Bonmati, E., Bandula, S., Gurusamy, K., . . . Barratt, D. C. (2017). Towards Image-Guided Pancreas and Biliary Endoscopy: Automatic Multi-organ Segmentation on Abdominal CT with Dense Dilated Networks. Paper presented at the International Conference on Medical Image Computing and Computer-Assisted Intervention.
- Greenspan, H., van Ginneken, B., & Summers, R. M. (2016). Guest Editorial Deep Learning in Medical Imaging: Overview and Future Promise of an Exciting New Technique. IEEE Transactions on Medical Imaging, 35(5), 1153-1159. doi:10.1109/TMI.2016.2553401
- Shi, H., Lu, L., Yin, M., Zhong, C., & Yang, F. (2023). Joint few-shot registration and segmentation self-training of 3D medical images. Biomedical Signal Processing and Control, 80. doi:https://doi.org/10.1016/j.bspc.2022.104294

Versions

Version 2 (Current): Updated 2020/09/10

Data Type	Download all or Query/Filter
Images (DICOM, 9.3 GB)	*Download Search* (Download requires the NBIA Data Retriever)
Manual Annotations	*Download*

Note: Previously posted cases #25 and #70 were found to be from the same scan as case #2, just cropped slightly differently, and were removed from this version of the dataset.

Version 1 : Updated 2015/12/29

Data Type	Download all or Query/Filter
Images (DICOM, 10.2 GB)	not available, see version 2

Manual Annotations	*Download*