Credence Cartridge Radiomics Phantom CT Scans with Controlled Scanning Approach (CC-Radiomics-Phantom-2)

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Summary

This collection consists of 251 CT scans of Credence Cartridge Radiomic (CCR) phantom. This texture phantom was developed to investigate the feature robustness in the emerging field of radiomics. This phantom dataset was acquired on 4-8 CT scanners using a set of imaging parameters (e.g., reconstruction Field of View, Slice thickness, reconstruction kernels, mAs, and Pitch). A controlled scanning approach was employed to assess the variability in radiomic features due to each imaging parameter. This dataset will be useful to radiomic research community to identify a subset of robust radiomic features and for establishing the ground truths for future clinical investigations.

This Phantom dataset can be used for Feature variability assessment due to CT imaging parameters. These phantom scans can be used to identify a subset of robust radiomic features for future clinical investigations. Using this dataset, the numerical values of radiomic features can be cross-validated by other research groups using their own feature extraction tools.

Acknowledgements

This dataset was submitted by Dr. Eduardo G. Moros and Dr. M Shafiq ul Hassan, USF. Special thanks to Moffitt Cancer Center where data were acquired.

Data Access

Data Access

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Images (DICOM, 30.5GB)	*Download* *Search* (Download requires the NBIA Data Retriever)	CC BY 3.0

Additional Resources for this Dataset

- Related article describing this project Hassan et al; 2019. PDF

Detailed Description

Detailed Description

Image Statistics	Radiology Image Statistics
Modalities	CT
Number of Patients	251
Number of Studies	251
Number of Series	251
Number of Images	57,839
Images Size (GB)	30.5

Citations & Data Usage Policy

Citations & Data Usage Policy

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

Data Citation

Shafiq ul Hassan M, Zhang G, Latifi K, Ullah G, Gillies R, Moros E. **Credence Cartridge Radiomics Phantom CT Scans with Controlled Scanning Approach**. 2018. DOI: http://doi.org/10.7937/TCIA.2019.4l24tz5g

Publication Citation

Muhammad Shafiq ul Hassan, Geoffrey Zhang, Kujtim Latifi, Ghanim Ullah, Robert Gillies, Eduardo G. Moros. (2019) **Computed Tomography Texture Phantom Dataset for Evaluating the Impact of CT Imaging Parameters on Radiomic Features**. (link to attached PDF)

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: 10.1007/s10278-013-9622-7

Additional Publication Resources:

The Collection authors suggest the below will give context to this dataset:

- Shafiq ul Hassan M, Latifi K, Zhang G, Ullah G, Gillies R and Moros E. (2018) **Voxel size and gray level normalization of CT radiomic features in lung cancer patients.** Scientific Reports.
- Shafiq ul Hassan M, Zhang G, Hunt D, Latifi K, Ullah G, Gillies R and Moros E, '**Accounting for reconstruction kernel-induced variability in CT radiomic features using noise power spectra**', J. Med. Imag. 5(1), 011013 (2017). DOI: 10.1117/1.JMI.5.1.011013
- Shafiq ul Hassan M, Zhang G, Latifi K, Ullah G, Hunt D, Balagurunathan Y, Abdullah M, Schabath M, Goldgof D, Mackin D, Court L, Gillies R and Moros E. (2017) **Intrinsic dependencies of CT radiomic features on voxel size and number of gray levels.** Med. Phys. 44(3), p-1050-1062 .
- Paul R, Shafiq ul Hassan M, Moros E, Gillies R, Hall L, Goldgof D. (2018) **Stability of deep features across CT scanners and Field Of View (FOV) using a physical phantom**. Proc SPIE Medical Imaging Conference, February 2018, Texas, USA

Other Publications Using This Data

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Versions

Version 1 (Current): 2019/02/27

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