MRQy quality measures for TCIA MRI datasets (MRQy-Quality-Measures)

Summary

Magnetic Resonance Imaging (MRI) quality assessment measures were generated for

1. T1-weighted post-contrast axial MRI sequences from 133 The Cancer Genome Atlas Glioblastoma Multiforme Collection (TCGA-GBM) subjects
2. T1-weighted post-contrast axial MRI sequences from 46 The Clinical Proteomic Tumor Analysis Consortium Glioblastoma Multiforme Collection (CPTAC-GBM) subjects
3. Both T1- and T2-weighted axial MRI sequences from 54 The Cancer Genome Atlas Cervical Squamous Cell Carcinoma and Endocervical Adenocarcinoma Collection (TCGA-CESC) subjects

All MRI scans for each cohort were downloaded as DICOM files from TCIA and then processed via MRQy to compute quality measures for (a) interrogating the presence of site- or equipment-specific variations within a cohort, and (b) quantifying the impact of MRI artifacts to determine what pre-analytical corrections are needed. The MRQy output can be easily interrogated via the associated HTML5 based front-end, allowing for real-time filtering and visualization. MRQy is available for download at: http://github.com/ccipd/MRQy. Manifest files to download the DICOM images these results were derived from are available on the Detailed Description page.

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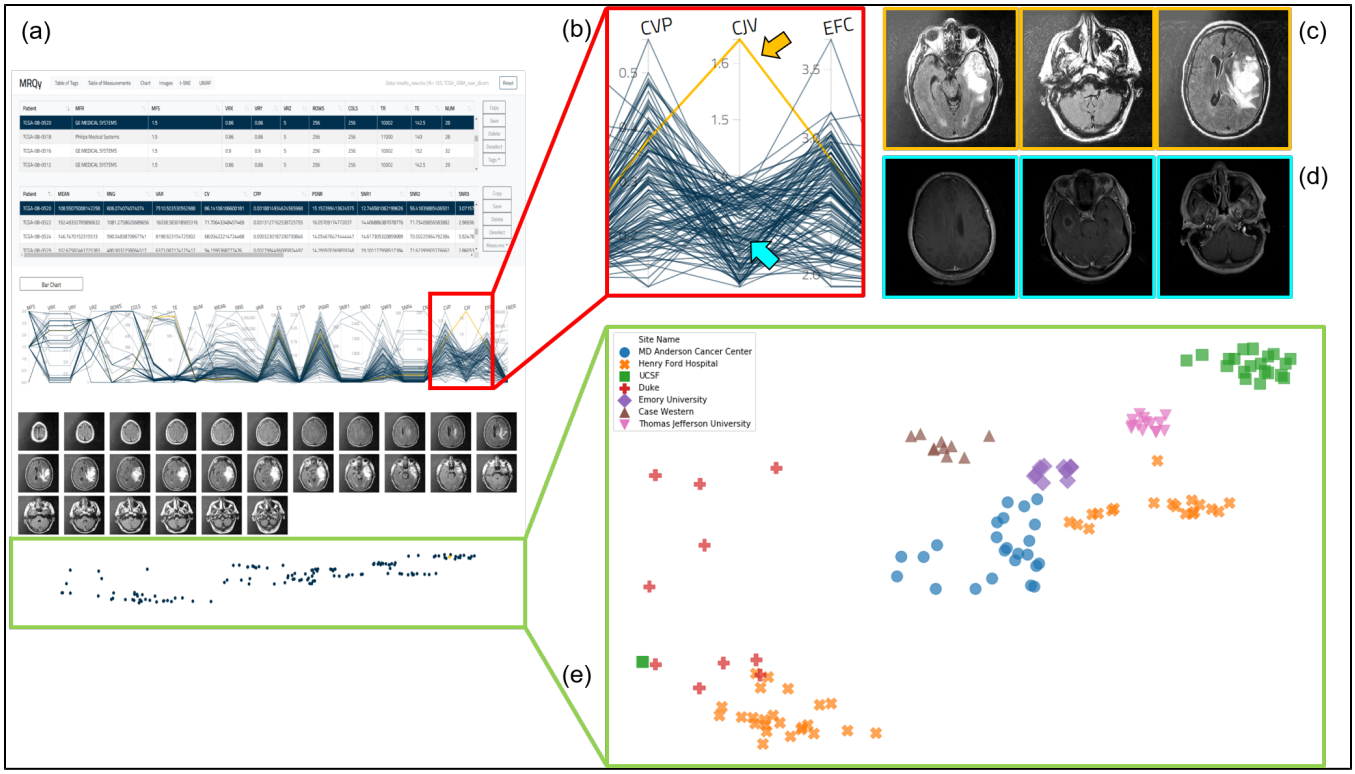

(a) MRQy front-end interface for interrogating TCGA-GBM cohort. (b) Outlier dataset identified on the parallel coordinate chart for the CJV quality measure found to exhibit shading artifacts on (c) representative images, especially when compared to (d) a different dataset without this artifact. (e) t-SNE scatter plot of quality measures revealing presence of site-specific batch effects (colors correspond to different sites, note presence of site-specific clusters).

Data Access

Data Access

Data Type	Download all or Query/Filter	License
TCGA-GBM MRQy results (49 kb, XLSX)	*Download*	CC BY 3.0
TCGA-CESC MRQy results (49 kb, XLSX)	*Download*	CC BY 3.0
CPTAC-GBM MRQy results (21 kb, XLSX)	*Download*	CC BY 3.0

Click the Versions tab for more info about data releases.

Additional Resources for this Dataset

- Source code is available on GitHub at: http://github.com/ccipd/MRQy.

Collections Used in this Third Party Analysis

Below is a list of the Collections used in these analyses:
Some data in this collection contains images that could potentially be used to reconstruct a human face. To safeguard the privacy of participants, users must sign and submit a TCIA Restricted License Agreement to help@cancerimagingarchive.net before accessing the data.

Source Data Type	Download	License
Corresponding Original MR Images from TCGA-GBM (1.37GB) and CPTAC-GBM (DICOM, 0.4 GB)	*Download* (Download requires the NBIA Data Retriever and permission)	TCIA Restricted

Corresponding Original MR Images from TCGA-CESC (DICOM, 2.72 GB)	*Download* (Download requires the NBIA Data Retriever)	CC BY 3.0

- The Cancer Genome Atlas Glioblastoma Multiforme Collection (TCGA-GBM)
- The Clinical Proteomic Tumor Analysis Consortium Glioblastoma Multiforme Collection (CPTAC-GBM)
- The Cancer Genome Atlas Cervical Squamous Cell Carcinoma and Endocervical Adenocarcinoma Collection (TCGA-CESC)

Detailed Description

Detailed Description

The *spreadsheets* provided are derived analyses from subsets of images from the The Cancer Genome Atlas Glioblastoma Multiforme Collection (TCGA-GBM), The Clinical Proteomic Tumor Analysis Consortium Glioblastoma Multiforme Collection (CPTAC-GBM), and The Cancer Genome Atlas Cervical Squamous Cell Carcinoma and Endocervical Adenocarcinoma Collection (TCGA-CESC) collections. To download the *original corresponding images* for your own analysis please see the "Source Data Type" table.

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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TCIA Citation

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TCIA maintains a list of publications which leverage our data. If you have a manuscript you'd like to add please contact TCIA's Helpdesk.

Versions

Version 1 (Current): Updated 2020/07/16

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CPTAC-GBM MRQy results (21 kb, XLSX)	*Download*	CC BY 3.0