

Dear MriStudio users,

Thank you for using our MriStudio software that includes DtiStudio, DiffeoMap, and RoiEditor. Today, we are pleased to announce a beta-release of our new image analysis platform, MriCloud. This new platform has several advanced features including;

1) Fully automated cloud service for brain parcellation of MPRAGE images based on Multiple-Atlas Likelihood Fusion (MALF) algorithm¹, JHU multi-atlas inventories with 286 defined structures, and our Ontology Level Control (OLC) technology².

2) Fully automated cloud service for DTI tensor calculation and extensive quantitative reports for quality control³.

The unique features include;

Feature 1: The program is entirely web-based. It is platform independent and there is no software distribution, implementation, and maintenance including upgrades. Chrome is recommended for the browser.

Feature 2: The SaaS uses cloud computation supported by the NSF XSEDE www.xsede.org at the User Computational Anatomy Portal <https://portal.xsede.org/#/guest>. All advanced computation is taking place in the service which is instantiated on publicly available super computing resources in a transparent manner based on the Extreme Science and Engineering Discovery Environment (XSEDE), which is supported by National Science Foundation grant number ACI-1053575.

Feature 3: It is fully automated. You only need to upload your data and download the results.

Feature 4: For T1-weighted images, brain segmentation is based on state-of-the-art multi-atlas segmentation with adult and pediatric (8-18 years old) atlas sets.

Feature 5: The DTI processing is based on advanced quality control tools.

The tools are available at www.mricloud.org. The tutorial materials are also available at www.mricloud.org/

We would like to encourage your participation to the testing of the pipelines and user feedback. Please feel free to contact us for any questions. I hope you will enjoy this advanced new platform for MR image analysis.

Sincerely,

MriStudio/MriCloud developers.

1) Tang, X., Oishi, K., Faria, A.V., Hillis, A.E., Albert, M.S., Mori, S., Miller, M.I., 2013. Bayesian Parameter Estimation and Segmentation in the Multi-Atlas Random Orbit Model. PLOS ONE 8,e65591

2) Djamanakova, A., Tang, X., Li, X., Faria, A.V., Ceritoglu, C., Oishi, K., Hillis, A.E., Albert, M., Lyketsos, C., Miller, M.I., Mori, S., 2014. Tools for multiple granularity analysis of brain MRI data for individualized image analysis. NeuroImage, 101, 168-76

3) Li, Y., Shea, S.M., Lorenz, C.H., Jiang, H, Chou, M-C, Mori, S. "Image Corruption Detection in Diffusion Tensor Imaging for Post-Processing and Real-Time Monitoring". PLoS ONE 8(10): e49764. doi:10.1371/journal.pone.0049764