



Little reminder for Narval

```
/lustre06/project/6093672/shared_codes/scripts/bashrc/
▼ Name
 ..
 correct_permissions_for_current_user.sh
```

sbatch /lustre06/project/6093672/shared_codes/scripts/bashrc/correct_permissions_for_current_user.sh

ctb-sbouix

```
[bverre@narval2 6093672]$ ls -la
total 2965
drwxrws---. 13 sbouix ctb-sbouix 25600 Aug 19 11:15 .
drwxr-xr-x. 9369 root root 2720768 Sep 9 09:33 ..
drwx--S---. 3 ahmedrek ctb-sbouix 25600 Sep 8 01:55 ahmedrek
drwxr-s---. 7 sadaf ctb-sbouix 25600 Aug 9 16:53 'AMP_results'
drwxrws---. 2 bverre ctb-sbouix 25600 Aug 20 13:57 bverre
drwx--S---. 3 cbriout ctb-sbouix 25600 Aug 1 07:48 cbriout
drwxr-s---. 3 cbriout ctb-sbouix 25600 Jun 25 15:32 data
drwxrws---. 5 bverre ctb-sbouix 25600 Jul 26 16:41 datasets
drwxr-s---. 8 ghazal ctb-sbouix 33792 Aug 19 16:56 ghazal
drwx--S---. 2 kavehets ctb-sbouix 25600 Jun 5 15:31 kavehets
drwx--S---. 2 sadaf ctb-sbouix 25600 Jun 5 15:31 sadaf
drwx--S---. 2 sbouix ctb-sbouix 25600 Jun 5 11:31 sbouix
drwxrws---. 6 bverre ctb-sbouix 25600 Aug 16 15:55 shared_codes
```

def-sbouix

```
[bverre@narval2 6074560]$ ls -la
total 2957
drwxrws---. 13 sbouix def-sbouix 25600 Aug 16 15:53 .
drwxr-xr-x. 9369 root root 2720768 Sep 9 09:33 ..
drwx--S---. 10 ahmedrek def-sbouix 25600 Aug 31 19:31 ahmedrek
drwxrws---. 5 bverre def-sbouix 25600 May 27 14:34 bverre
drwx--S---. 4 cbriout def-sbouix 25600 Jun 5 18:54 cbriout
drwxrws---. 15 sbouix def-sbouix 25600 Jun 9 09:23 data
drwx--S---. 3 ghazal def-sbouix 25600 Jun 12 18:24 ghazal
drwx--S---. 2 kavehets def-sbouix 25600 Sep 14 2023 kavehets
drwxrws---. 6 sadaf def-sbouix 25600 May 7 11:25 sadaf
drwx--S---. 3 sbouix def-sbouix 25600 Aug 24 2023 sbouix
drwxrws---. 7 bverre def-sbouix 25600 May 30 14:24 shared_codes
drwxrws---. 10 bverre def-sbouix 25600 Jan 18 2024 software
drwxrws---+ 4 ghazal def-sbouix 25600 Aug 1 15:11 Unest-result-segmenta
```

```
[bverre@narval2 6074560]$ diskusage_report
Description Space # of files
/home (project bverre) 11G/50G 70k/500k
/scratch (project bverre) 146k/20T 5/1000k
/project (project ctb-sbouix) 4360G/185T 1015k/1500k
/project (project def-sbouix) 3904G/10T 488k/500k
/nearline (project ctb-sbouix) 196k/1000G 8/5000
/nearline (project def-sbouix) 196k/1000G 8/5000
```



brainlife.io: a decentralized and open-source cloud platform to support neuroscience research

Soichi Hayashi, Bradley A. Caron, Anibal Sólón Heinsfeld , Sophia Vinci-Booher, Brent McPherson, et al.

DOI: 10.1038/s41592-024-02237-2

Review article

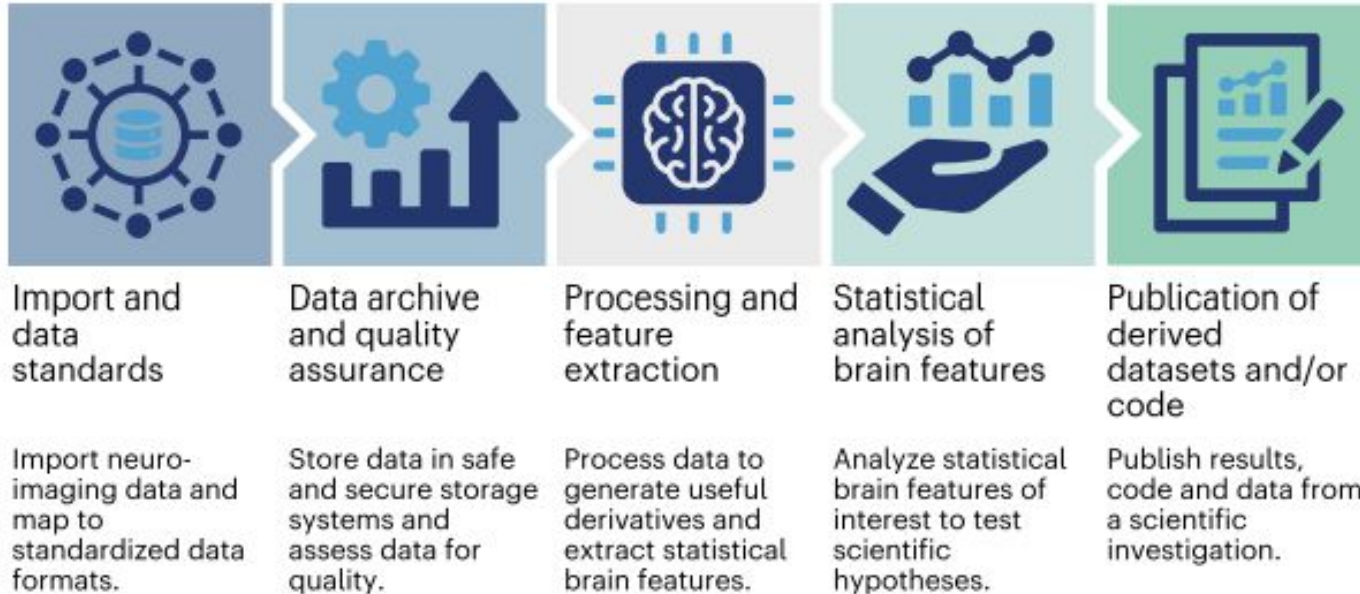
Nature Methods

Published: April 2024

<https://github.com/brainlife>

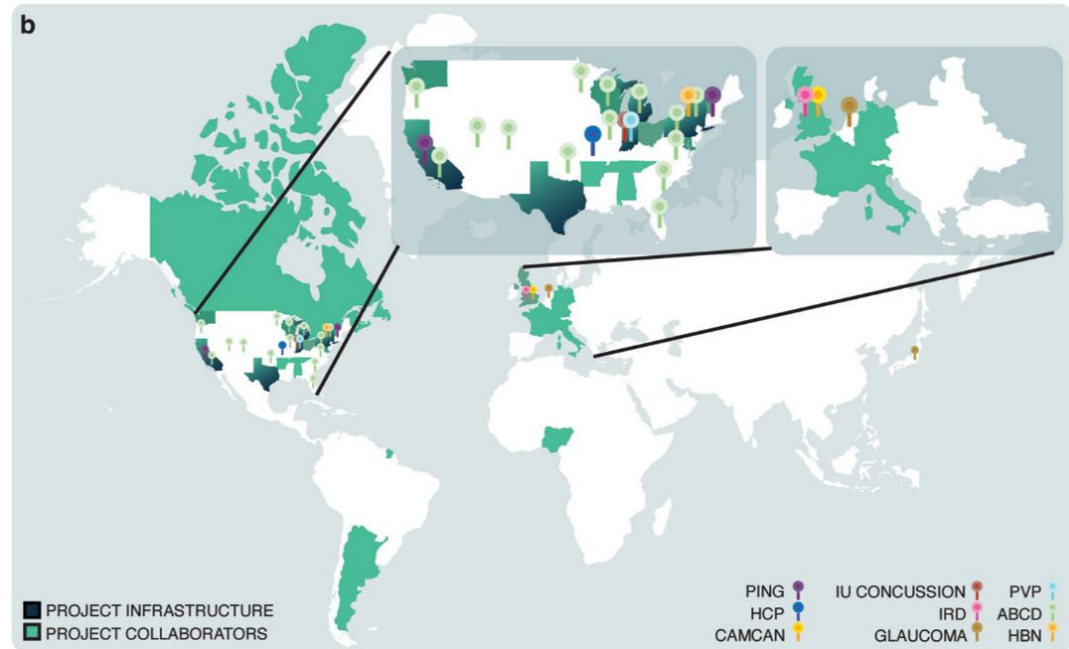
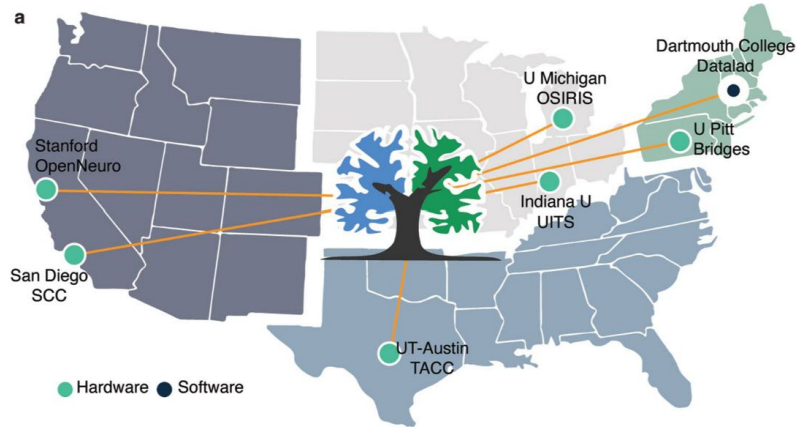
What brainlife.io is made for ?

- Online and open source platform for:



- Goal:** support simplicity, efficiency, transparency and equity in big data neuroscience research

Brainlife.io with critical hubs and critical facets

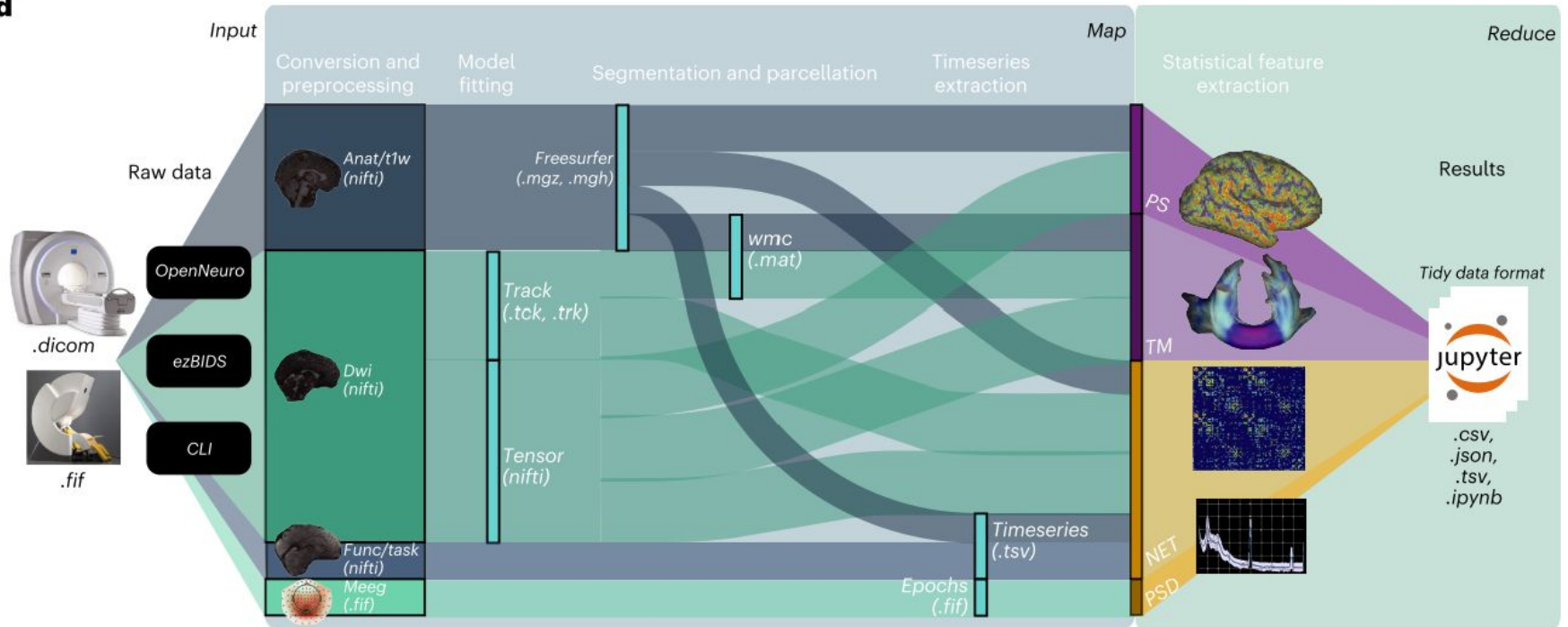


Brainlife.io microservices

Service	Description	GitHub Repos
UI	Platform entrypoint, providing an user interface that integrates the diverse services in <u>Brainlife</u>	https://github.com/brainlife/warehouse/tree/master/ui
Warehouse	Data storage and management	https://github.com/brainlife/warehouse/
Amaretti	Automated scheduling service identifying appropriate compute resources and staging and archiving data	https://github.com/brainlife/amaretti/
ezBIDS	DICOM to BIDS conversion	https://github.com/brainlife/ezbids/
Vis	Services available for running visualizations within the platform	https://github.com/brainlife/brainlife/tree/master/vis
Event	Event-driven integrator, to provide real-time feedback for users	https://github.com/brainlife/event/
Service Monitoring	Monitors individual actions performed by the site	https://github.com/brainlife/servicemonitor
CLI	Command-line interface for performing data manipulations and data scrubbing	https://github.com/brainlife/cli
Auth	Centralized authentication for the multiple <u>Brainlife</u> services	https://github.com/brainlife/auth

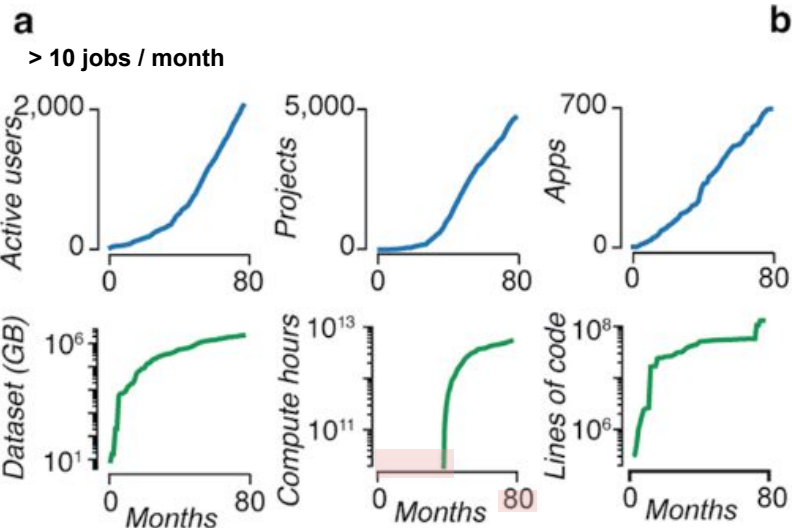
Brainlife.io map and reduction process

d

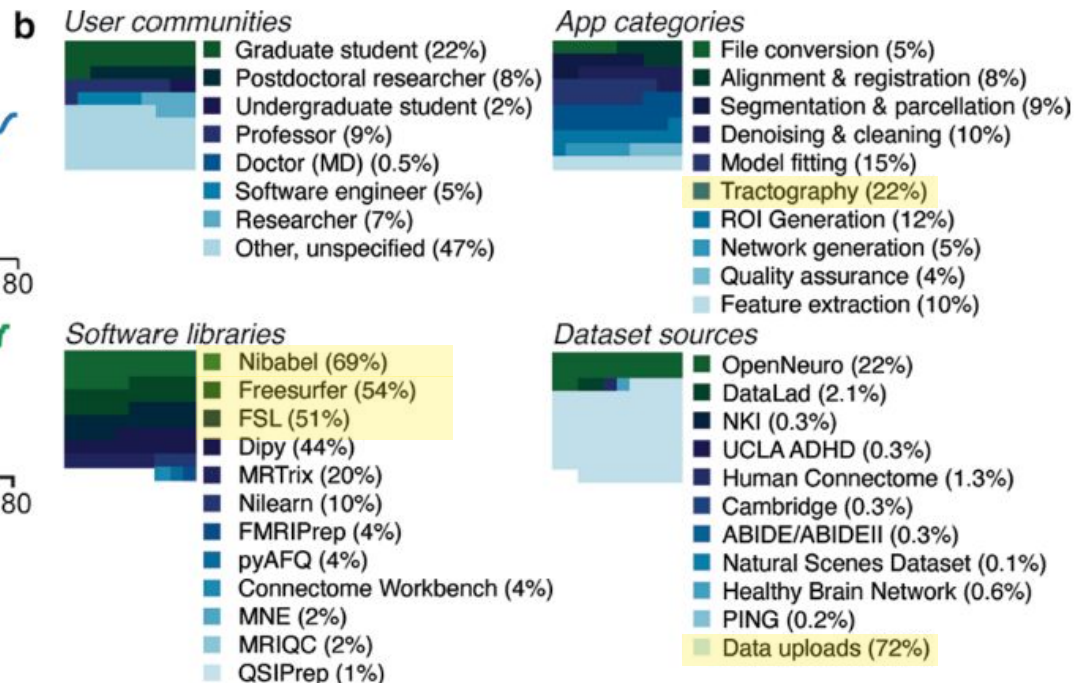


PS = parc-stats datatype; TM = tractmeasures datatype;
NET = network datatype; CLI = common line interface

Brainlife.io usage

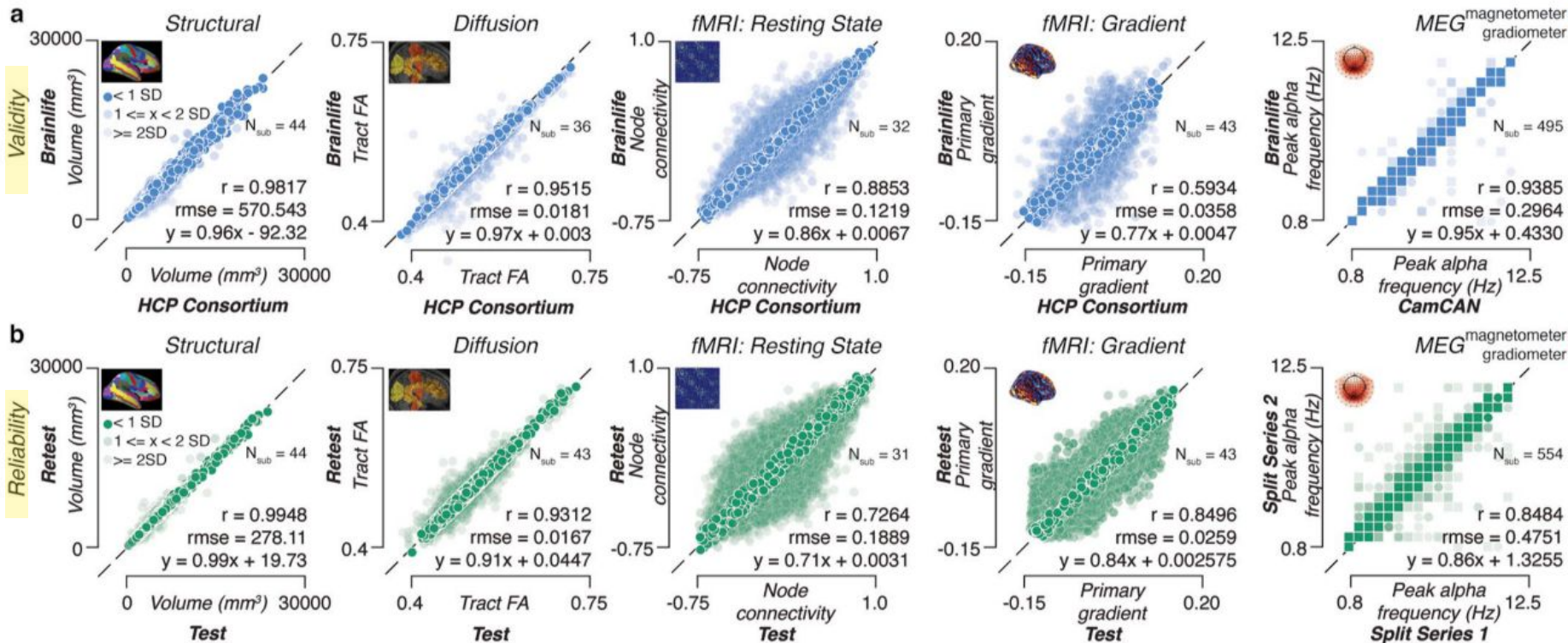


(Data available only
after 6 months)



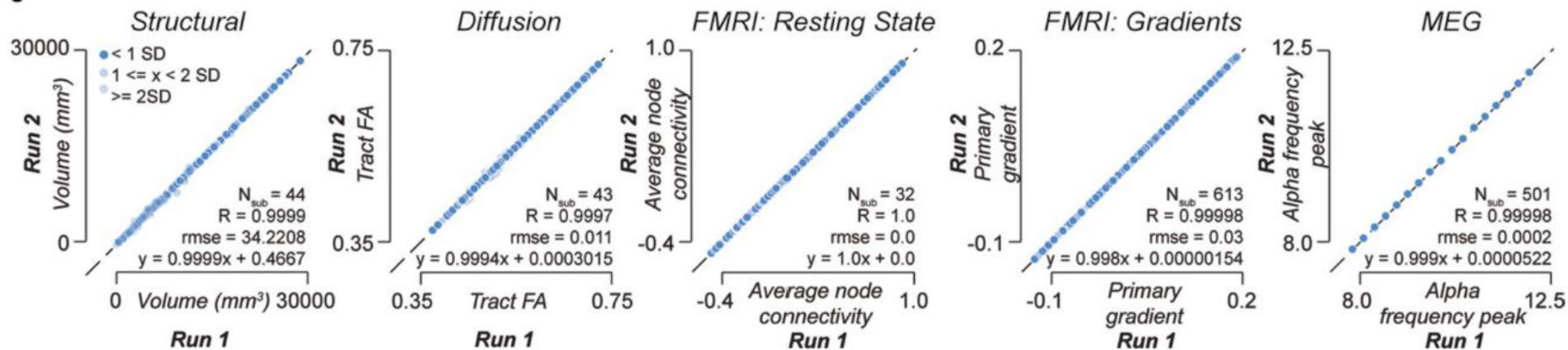
Dipy = diffusion imaging in python using CLI

Brainlife.io validity and reliability (test-retest)



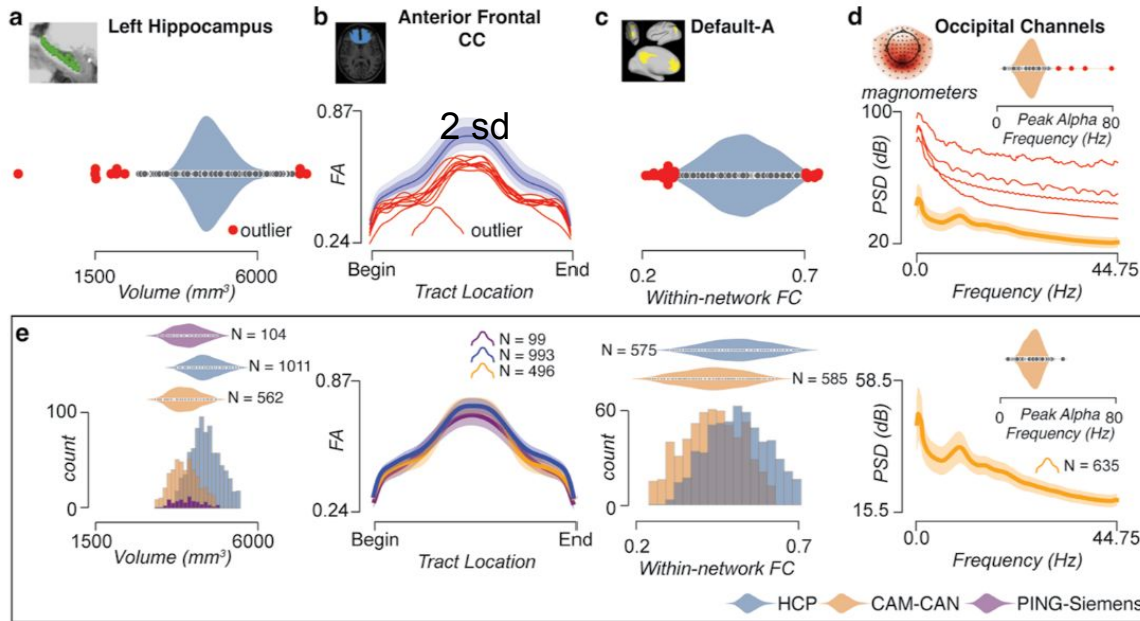
Dark colors represent data within ± 1 standard deviation (50% opacity \rightarrow [1;2] sd; 25% opacity \rightarrow > 2 sd)
magnetometer sensors (squares), gradiometer sensors (circles)

Rerun test



Repeating runs of brainlife.io Apps using the HCP-TR dataset and the CAN dataset.

Quality assurance



- a. sMRI: Cortical volumes of the left hippocampus,
- b. dMRI: Average fractional anisotropy (FA) profiles,
- c. fMRI-rs: Within-network functional connectivity for the nodes within the Default-A network using the Yeo17 atlas.
- d. MEG: Average PSD (power spectral density) from occipital channels using magnetometer sensors
- e. Previous graphs without outliers (in red)

How does brainlife.io look like ?

The screenshot displays the brainlife.io web application interface. On the left is a blue sidebar with navigation links: DATASETS, PROJECTS, APPS (highlighted), PUBLICATIONS, DATATYPES, RESOURCES, ORGANIZATIONS, SETTINGS, SLACK / CHAT, REPORT ISSUES, and DOCUMENTATION. At the top of the main content area is a search bar labeled "Search Apps" and a toggle for "Show Depreciated Apps". Below the search bar, a description of the ANALYSIS section is shown: "Create plots of diffusion metrics (i.e. FA, MD, RD, AD) for e... ANALYSIS d tracts from AFQ, known as Tract Profiles. Obtains streamline positions from segmented". A list of apps follows, starting with "Freesurfer 7.3.2" (brainlife/app-freesurfer 7.3.2) which includes input/output details and a brain image. Below it is "TractSeg from peaks" (brainlife/app-tractseg 2.7) with its own input/output details and a brain image. A green "Register App" button is positioned below the TractSeg app. To the right of the app list is a "CATEGORIES" sidebar with a "NEW APPS" section and a list of categories including AFNI 2, ALIGNMENT 4, ANALYSIS 24 (highlighted), ANATOMY 1, ANATOMY-PREPROCESSING 17, BRAINLIFE 1, BRAINLIFEIO 1, CONVERT 4, DIFFUSION-DENOISING 2, DIFFUSION-MRI 29, DIFFUSION-PREPROCESSING 4, DIFFUSION-RECONSTRUCTION 1, EEG 6, FMRI 2, MEEG 12, MEG 2, and MISCELLANEOUS 336. On the far right is a "brainlife Documentation" panel with a search icon, containing a "Getting Started with brainlife.io" tutorial link and a list of steps: Sign up for brainlife.io, Create new projects, Upload data, Launch visualizations, Run processes on data, and Archive results. Below this is a "Sign Up" section with the text: "To begin using brainlife.io, you need first make sure you are registered on the site (you can do".

brainlife < Search Apps ☐ Show Depreciated Apps > brainlife Documentation

Create plots of diffusion metrics (i.e. FA, MD, RD, AD) for e... **ANALYSIS** d tracts from AFQ, known as Tract Profiles. Obtains streamline positions from segmented

▶ 25,949 80 5 - 10 min 72.3%

Freesurfer 7.3.2
brainlife/app-freesurfer 7.3.2
In anat/t1w anat/t2w opt
Out freesurfer
● parcellation/volume aparc
● parcellation/volume aparc.a2009s
● parcellation/volume aparc.DKTatlas

Freesurfer segments the t1w anatomical data into functionally different parts of the brain. Segmentation/

▶ 510,517 605 5.6 - 8.4 hour 1 70%

TractSeg from peaks
brainlife/app-tractseg 2.7
In peaks
Out track/tck wmc tractseg
● tractmasks tract_segmentations
● tractmasks ending_segmentations ● tractseg
● tractmeasures tractseg_tractometry peak_length

Brainlife App for MIC-DKFZ/TractSeg. A tool for fast and accurate white matter bundle segmentation from

▶ 26,363 86 9 - 21 min 66.4%

CATEGORIES

NEW APPS

AFNI 2
ALIGNMENT 4
ANALYSIS 24
ANATOMY 1
ANATOMY-PREPROCESSING 17
BRAINLIFE 1
BRAINLIFEIO 1
CONVERT 4
DIFFUSION-DENOISING 2
DIFFUSION-MRI 29
DIFFUSION-PREPROCESSING 4
DIFFUSION-RECONSTRUCTION 1
EEG 6
FMRI 2
MEEG 12
MEG 2
MISCELLANEOUS 336

Getting Started with brainlife.io

Now, let's learning how to use brainlife.io! This "Getting Started" tutorial will give you a quick overview of how to:

- Sign up for brainlife.io
- Create new projects
- Upload data
- Launch visualizations
- Run processes on data
- Archive results

We will cover some of these topics more in-depth in other sections of the documentation.

Sign Up

To begin using brainlife.io, you need first make sure you are registered on the site (you can do

Register App

Updates on the Github of Brainlife ?

The screenshot shows the GitHub interface for the Brainlife organization. The top navigation bar includes links for Overview, Repositories (331), Discussions, Projects, Packages, and People (1). The left sidebar lists repository filters: All, Public, Sources, Forks, Archived, and Templates. The main content area is titled 'All' and features a search bar. Below the search bar, it displays '331 repositories' with a sort dropdown set to 'Last pushed'. Three repositories are listed:

- amaretti** (Public): Lightweight task orchestration service for ABCD-specification compatible apps. Technologies: JavaScript, MIT License. Stats: 4 forks, 5 stars, 18 commits, 10 issues. Updated last week.
- docs** (Public): Brainlife.io Documentation. Technologies: documentation, neuroscience, educational, neuroimaging, brainlife. Stats: 25 forks, 10 stars, 13 commits, 1 issue. Updated last week.
- ezbids** (Public): A web service for semi-automated conversion of raw imaging data to BIDS. Technologies: web, dicom, interoperability, mri, neuroimaging, bids, nifti, brain-imaging, data-curation, bids-converter. Stats: 11 forks, 25 stars, 5 commits, 5 issues. Updated 2 weeks ago.

Thank you for your attention !