

Brain Imaging Data Structure



Meet Prof. Smith



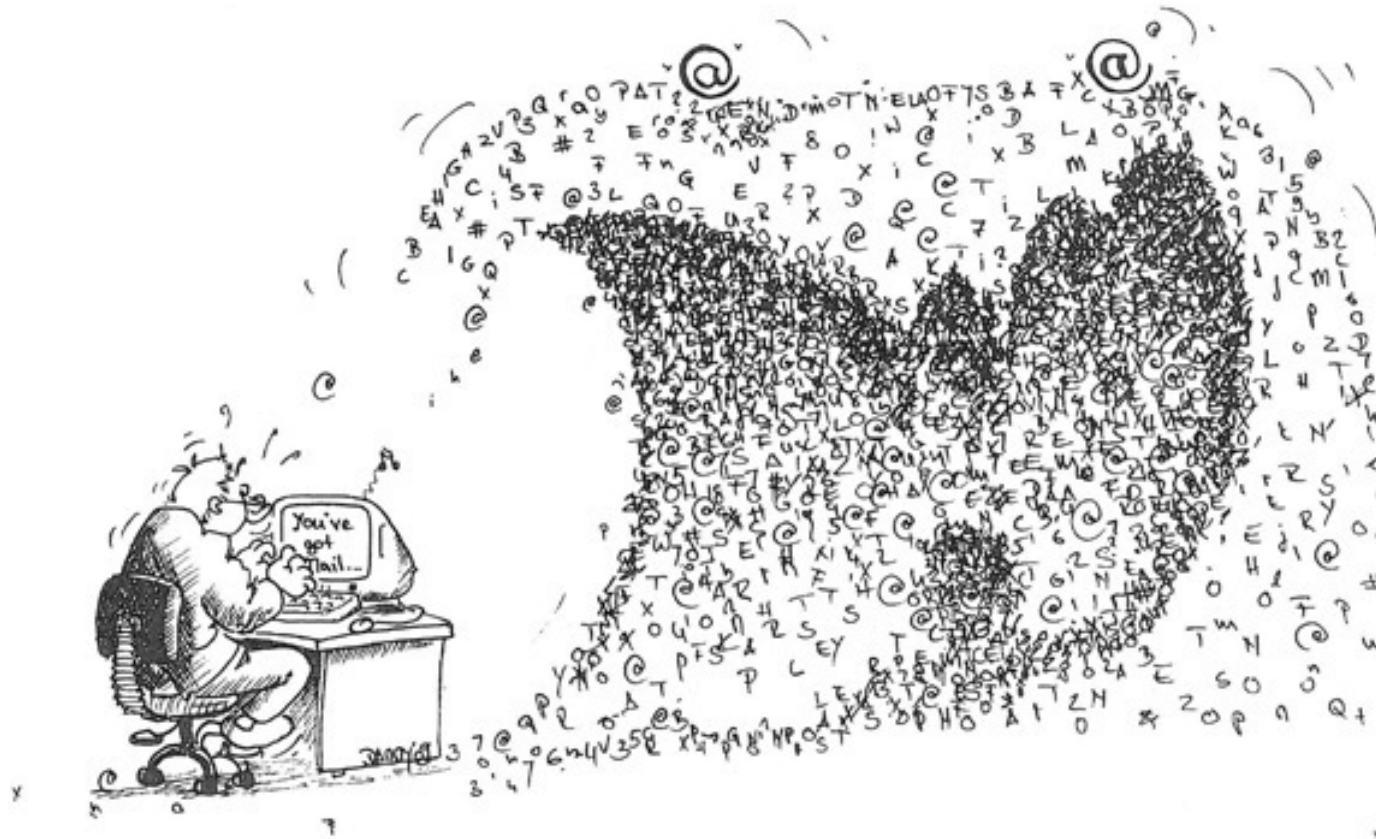
Meet Mike

A Data Scientist is...



A Business Analyst that lives in California.

Getting lost in your data

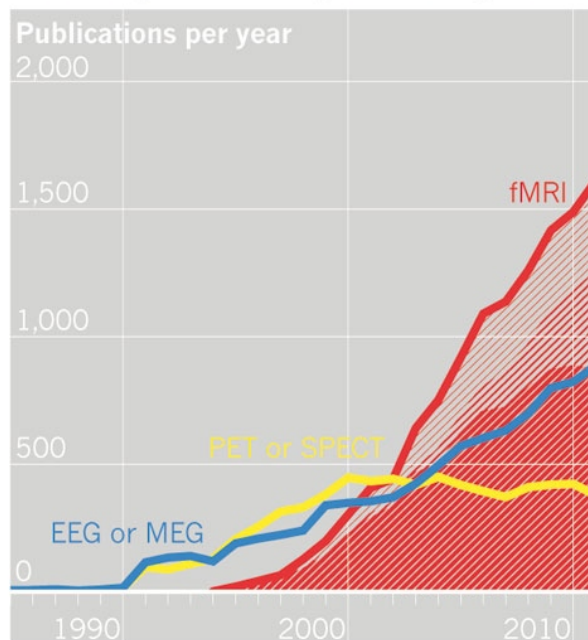


Getting lost in your data

Heterogeneity in data description practices causes:

- problems in sharing data,
- unnecessary manual metadata input,
- no way to automatically validate datasets.

Getting lost in your data



- MRI has been used to study the human brain for over 20 years.
- Despite similarities in experimental designs and data types each researcher tends to organize and describe their data in their own way.

<http://www.nature.com/news/brain-imaging-fmri-2-0-1.10365>

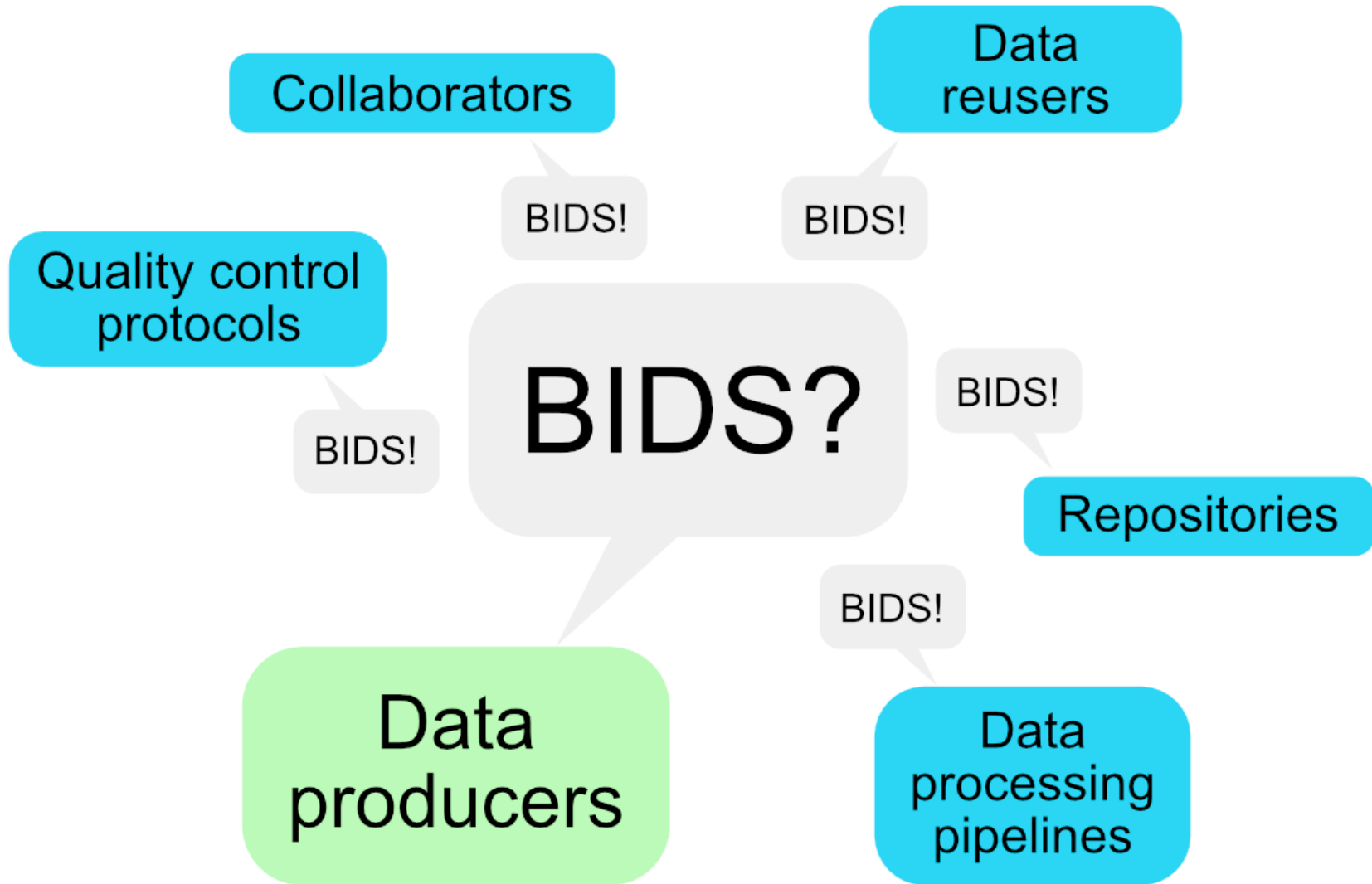
Brain Imaging Data Structure

a new standard for organizing
human neuroimaging datasets

Who is it for?

1. Lab PIs. It will make handing over one dataset from one student/postdoc to another easy.
2. Workflow developers. It's easier to write pipelines expecting a particular file organization.
3. Database curators. Accepting one dataset format will make curation easier.

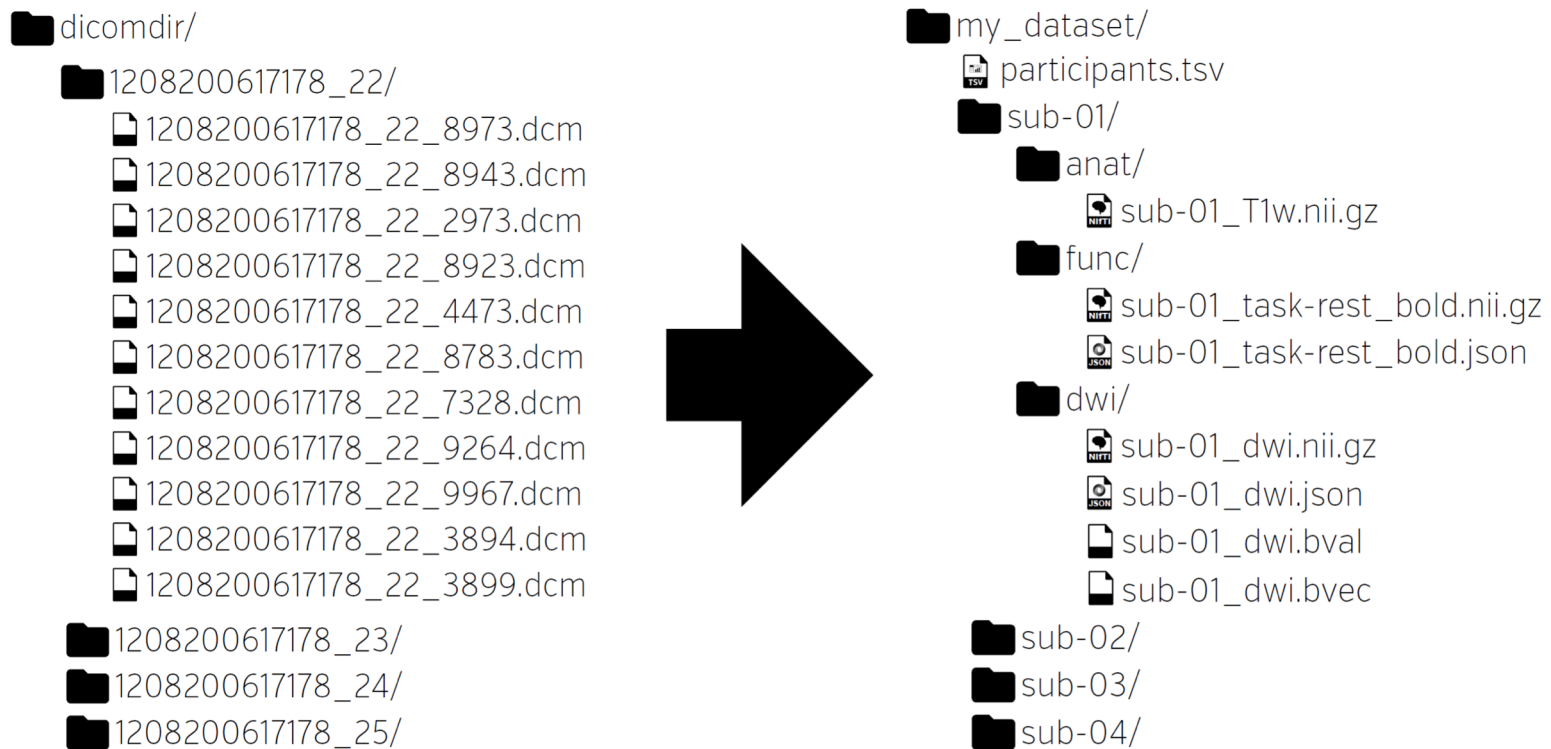
The language of data



Principles behind BIDS

1. Adoption is crucial.
2. Don't reinvent the wheel.
3. 80/20 rule.

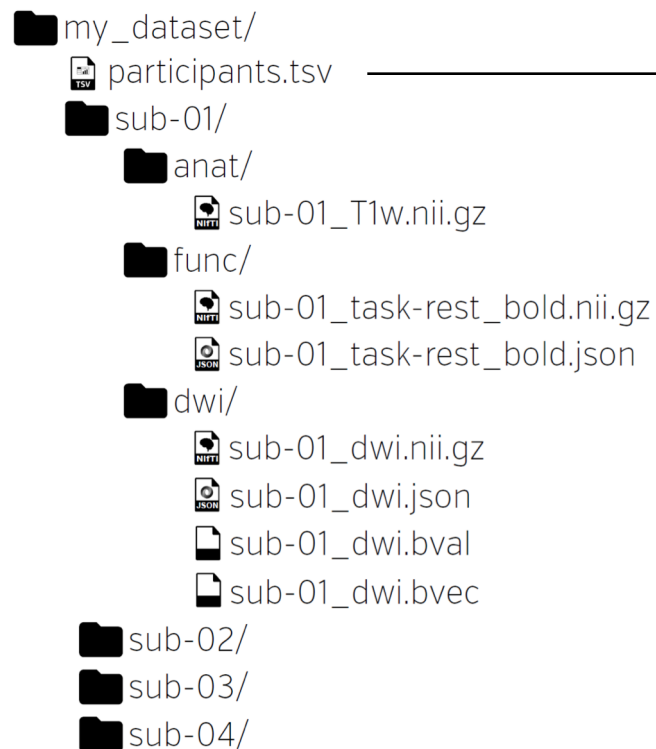
Folder organization



Folder organization

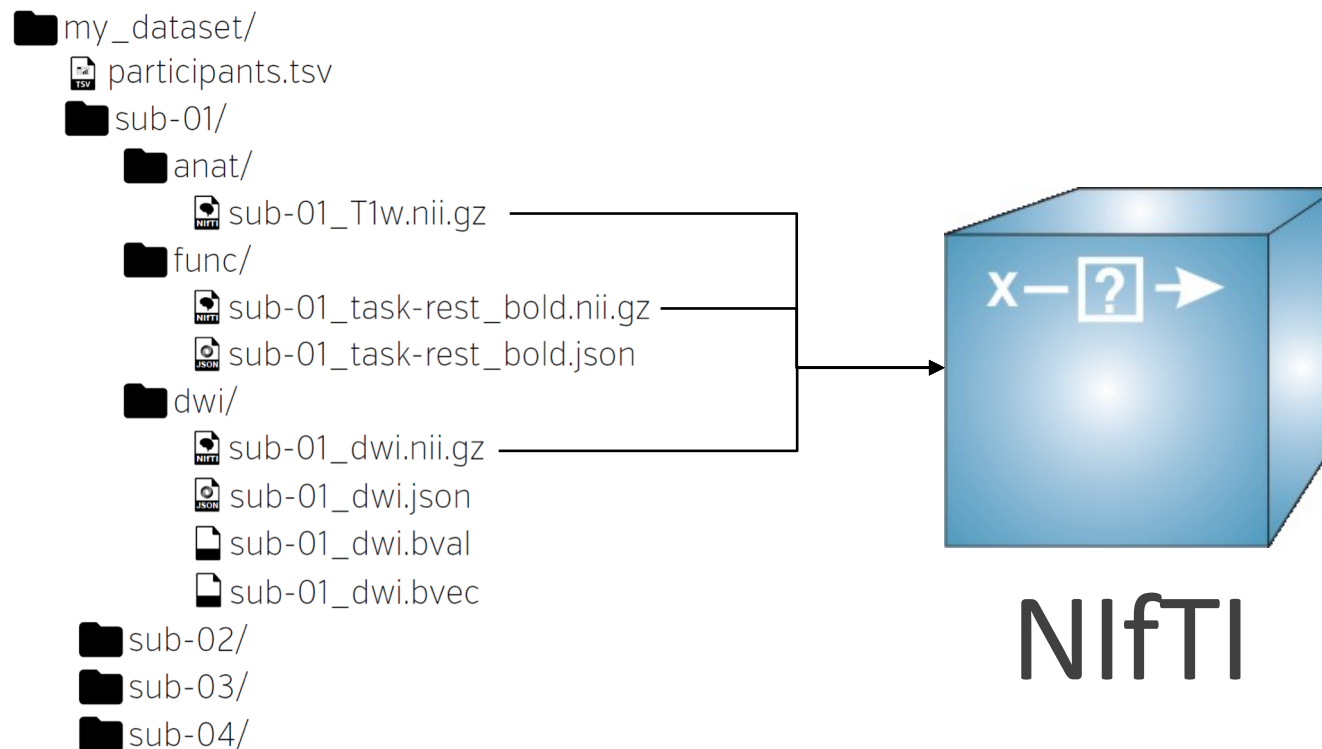
- my_dataset/
 - participants.tsv
 - sub-01/
 - anat/
 - sub-01_T1w.nii.gz
 - func/
 - sub-01_task-rest_bold.nii.gz
 - sub-01_task-rest_bold.json
 - dwi/
 - sub-01_dwi.nii.gz
 - sub-01_dwi.json
 - sub-01_dwi.bval
 - sub-01_dwi.bvec
 - sub-02/
 - sub-03/
 - sub-04/

Folder organization

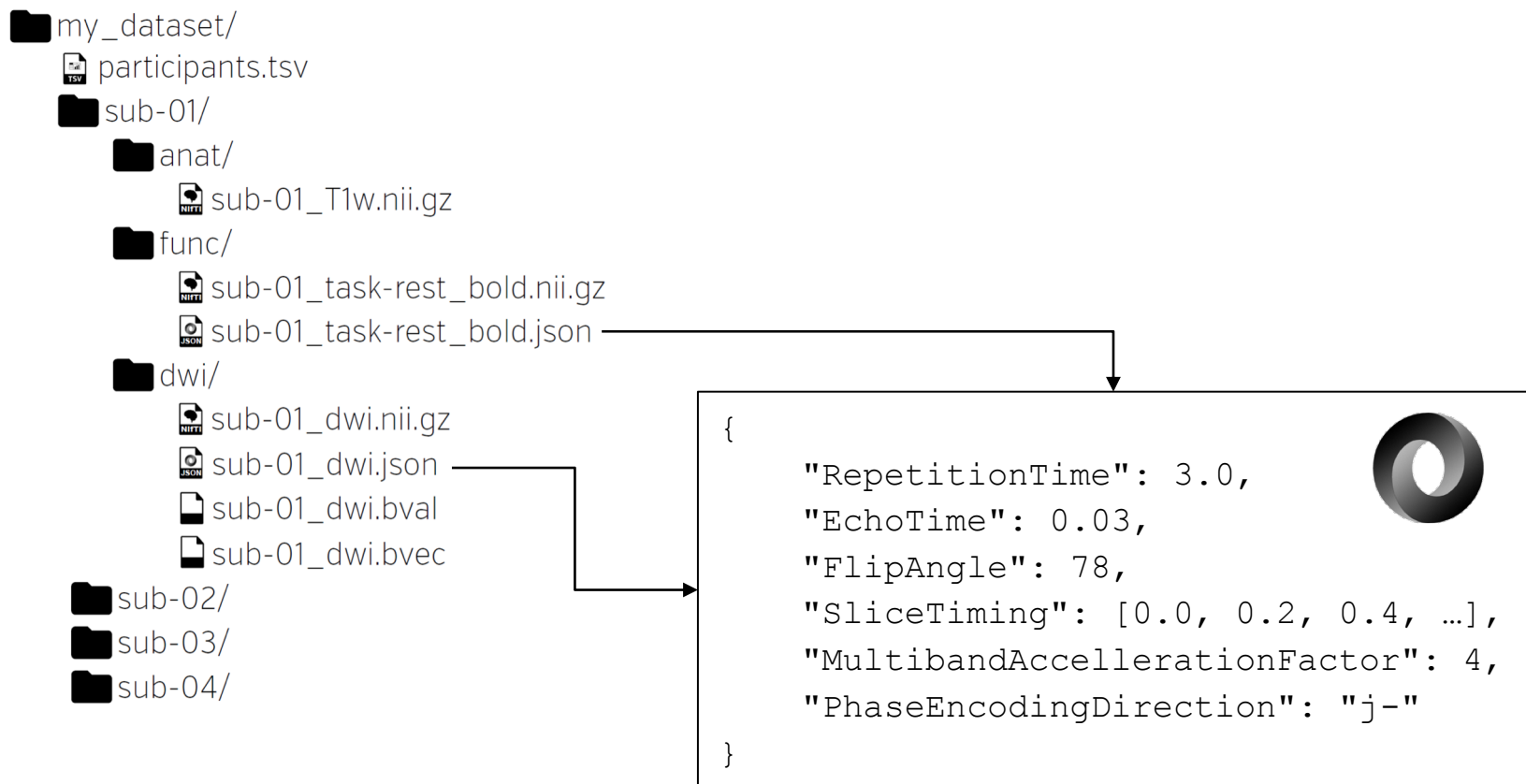


participant_id	age	sex
sub-001	34	M
sub-002	12	F
sub-003	33	F

Folder organization



Folder organization



The Validator

incf.github.io/bids-validator

Summary

- 40 Files, 18.42kB
- 13 - Subjects
- 1 - Session

Available Tasks

- rhyme judgment

Available Modalities

- bold
- T1w

Your dataset is not a valid BIDS dataset.

view 1 error in 23 files

view 1 warning in 4 files

Prof. Smith (2030)



GETTING STARTED

Read the Starter Kit

[BIDS STARTER KIT](#)

Learn from examples

[FULL DATASETS IN OPENNEURO.ORG](#)

[STRIPPED DOWN DATASETS ON GITHUB.ORG](#)

Confused? Need help?

[POST A QUESTION ON NEUROSTARS.ORG](#)

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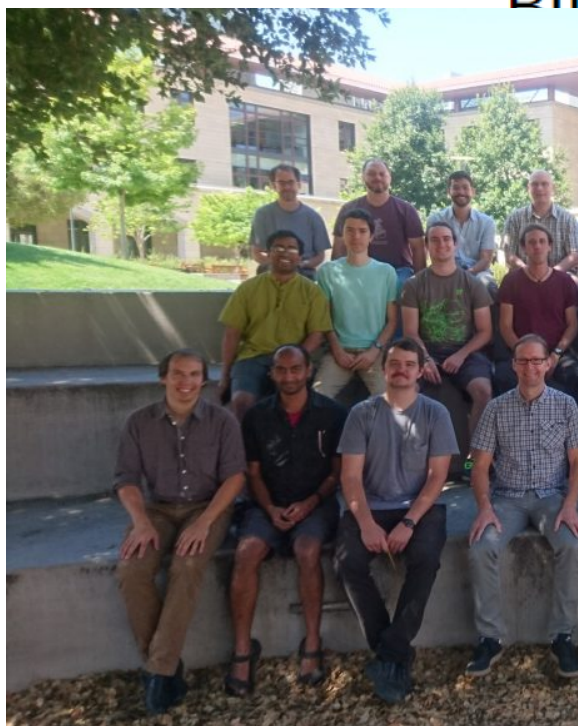
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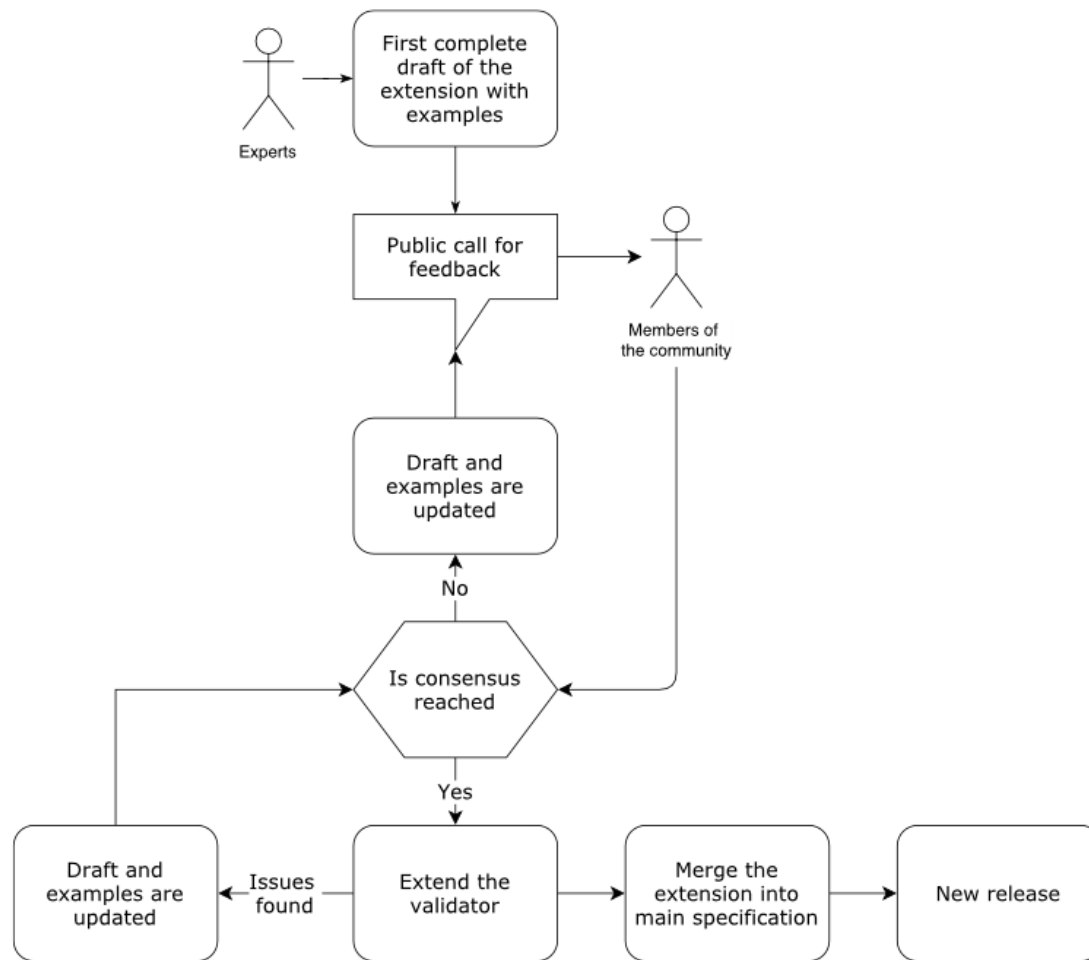
BIDS Community



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You can
contribute
an extension
too!

Welcome to the BIDS Starter Kit



How to get started with the Brain Imaging Data Structure

A community-curated collection of tutorials, wikis, and templates to get you started with creating BIDS compliant datasets.

[BIDS Homepage](#) | [Wiki](#) | [Standard](#) | [Tutorials](#) | [Chat](#) | [Forum](#)

Click to view the intro video!



<https://github.com/INCF/bids-starter-kit>

Adoption

- ❑ Used in over 60 labs around the world
- ❑ Adopted by: FCP-INDI, Developing Human Connectome, SchizConnect and Donders Data repository.
- ❑ Part of the automatic data ingestion workflow for OpenNeuro.
- ❑ Anonymized data from over 20,000 participants formatted in BIDS are publicly available.

bids.neuroimaging.io

(SPECIFICATION, EXAMPLES, DISCUSSION FORUM)