

Flywheel to Oak

About

After we end a subject's session at the CNI, their data is uploaded to a data warehouse called Flywheel. We'll perform a few operations on the data in the Flywheel ecosystem before exporting to our storage space on Oak. See below for more details.

Flywheel

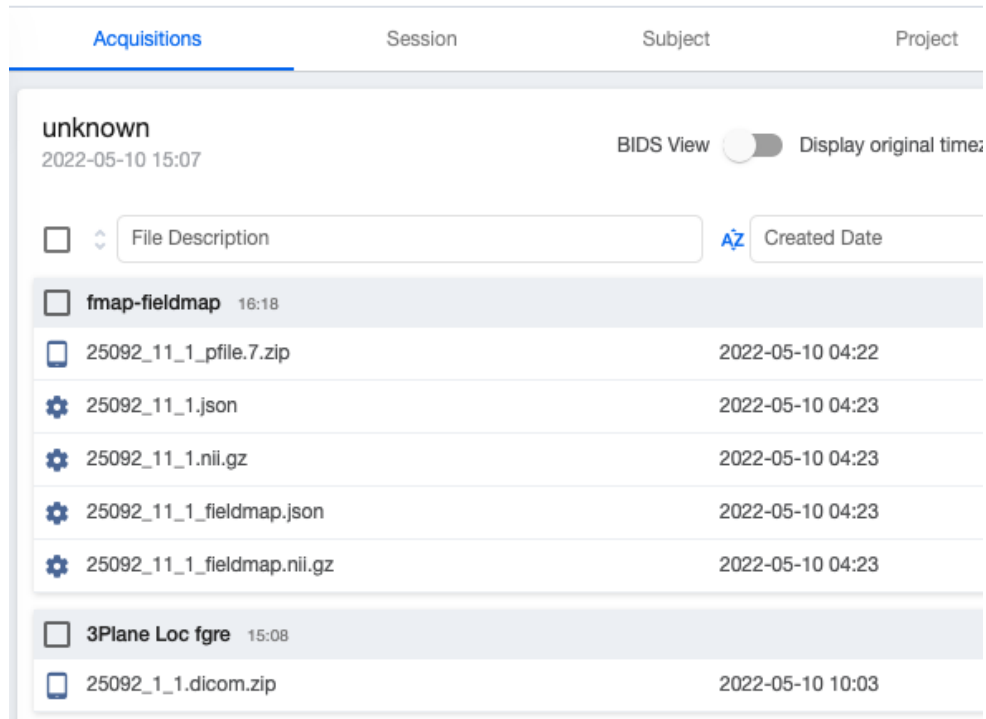
- In a Google Chrome browser, log in to Flywheel at cni.flywheel.io
- You should see a list of your projects on the home screen, hit

Zaki_SocialNetworks_2022

Zaki_SocialNetworks_2022  JZAKI (fw://jzaki/Zaki_SocialNetworks_2022)

Description	Sessions	Information	Analyses	Data Views	⋮
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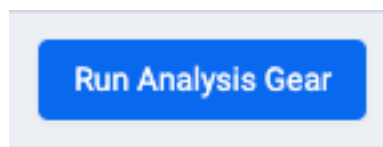
- Each individual subject is listed under the Sessions tab
- The default view is “non-BIDS” ... that’s presented in the order that we scanned for each participant (localizers, functional runs, T1’s, etc.)



- Our goal here is to programmatically update each subject's data structure to be in BIDS format
 - See <https://bids.neuroimaging.io/>

Perform the following steps:

- Tab over to Analyses
- Click "Run Analysis Gear"



- Select "BIDS Pre-Curation" with **no inputs**
 - I recommend you tab over to Configuration and un-select "Suggest"

Run Analysis Gear

Select an Analysis Gear:

BIDS Pre-Curation

0.3.1

Prepare project for BIDS Curation. BIDS Pre-Curate offers a simple way to modify labels and classifications of project data to be compatible with the BIDS-spec. Running pre-curate on a given project (as a project-level analysis) will generate CSV files that will be populated with a unique list of container labels, as well as slots for the information needed for BIDS curation (classification, task, etc.). These CSV files can be downloaded and modified (outside of Flywheel) to provide missing or corrected information. The completed CSV file is then uploaded to the project (as an attachment) and provided as input to a run of this same gear to do on-the-fly mappings and metadata updates. For more information, please see the [readme in the source repository](#).

Inputs

Configuration

Information

This gear will act on your behalf with a dedicated API key.

Select Inputs

acquisition_table

No input chosen (Optional)

session_table

No input chosen (Optional)

subject_table

No input chosen (Optional)

Analysis Label

bids-pre-curate 05/11/2022 08:16:05

Job Tags

Add none

Close

Run Gear

Run Analysis Gear

Select an Analysis Gear:

BIDS Pre-Curation

0.3.1

Prepare project for BIDS Curation. BIDS Pre-Curate offers a simple way to modify labels and classifications of project data to be compatible with the BIDS-spec. Running pre-curate on a given project (as a project-level analysis) will generate CSV files that will be populated with a unique list of container labels, as well as slots for the information needed for BIDS curation (classification, task, etc.). These CSV files can be downloaded and modified (outside of Flywheel) to provide missing or corrected information. The completed CSV file is then uploaded to the project (as an attachment) and provided as input to a run of this same gear to do on-the-fly mappings and metadata updates. For more information, please see the [readme in the source repository](#).

Inputs

Configuration

Information

Modify Configuration

allows

_

dry_run

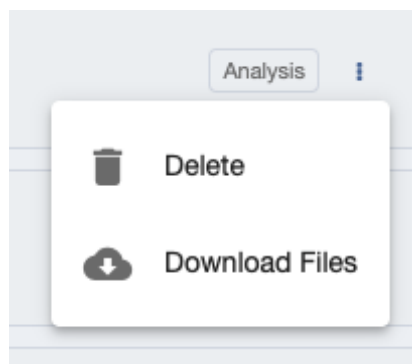
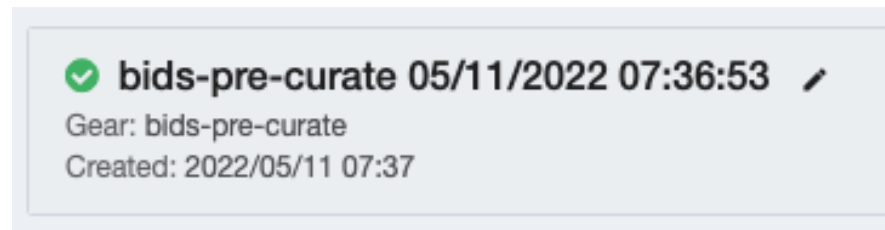
suggest

Close

Run Gear

- Click **Run Gear**

- Assuming you have no issues, click on the three dots to the far-right of the screen and download the files locally



- Use the **populate.py** script in this repo to fill in the acquisition labels
 - NOTE: This is hard coded for the present study, and should be updated before being used on other projects

```
Ian @ BIDS $ p3 populate.py ./bids-pre-curate\ 05/11/2022\ 07:31:03/output/acquisition_labels_Zaki_SocialNetworks_2022.csv
```

```
Ian @ BIDS $ p3 populate.py ./bids-pre-curate\ 05/11/2022\ 07:31:03/output/acquisition_labels_Zaki_SocialNetworks_2022.csv
31it [00:00, 11672.81it/s]

** Acquisition table saved **

Ian @ BIDS $
```

- You may need to fill in any missing entries, you can do this manually

existing_acquisition_label	new_acquisition_label
fmap-fieldmap	fmap-fieldmap
3PlaneLocfgr	
anat-T1w_acq-9mmBRAVO	anat-T1w_acq-9mmBRAVO
GEHOSFOV24	
GEHOSFOV24_1	
func-bold_task-socialeval_run-1	func-bold_task-socialeval_run-1
func-bold_task-socialeval_run-2	func-bold_task-socialeval_run-2
func-bold_task-stressbuffer_run-1	func-bold_task-stressbuffer_run-1
func-bold_task-stressbuffer_run-2	func-bold_task-stressbuffer_run-2
func-bold_task-faces_run-1	func-bold_task-faces_run-1
func-bold_task-rest_run-1	func-bold_task-rest_run-1
fmap-fieldmap_ignore-BIDS	
3Plane Loc fgr	
GE HOS FOV24	
GE HOS FOV24_1	
func-bold_task-rest_run-2	func-bold_task-rest_run-2
GE HOS FOV24_2	
func-bold_task-socialeval_run-1_ignore-BIDS	
func-bold_task-stressbuffer_run-1_ignore-BIDS	
func-bold_task-stressbuffer_run-2_ignore-BIDS	
spiral fieldmap	fmap-fieldmap
fMRI social eval run1 HB4	func-bold_task-socialeval_run-1
fMRI social eval run2 HB4	func-bold_task-socialeval_run-2
T1w .9mm BRAVO	anat-T1w_acq-9mmBRAVO
fMRI stress buff run1 HB4	func-bold_task-stressbuffer_run-1
fMRI stress buff run2 HB4	func-bold_task-stressbuffer_run-2
fMRI faces run1 HB4	func-bold_task-faces_run-1
fMRI faces run1 HB4_1	
fMRI rest run1 HB4	func-bold_task-rest_run-1
fMRI faces run1 HB4_2	
fMRI rest run2 HB4	func-bold_task-rest_run-2

- Once the acquisition table is updated, re-upload these to Flywheel under the Information tab

Description
Sessions
Information
Analyses
Data Views

Custom Information
+ Save Cancel

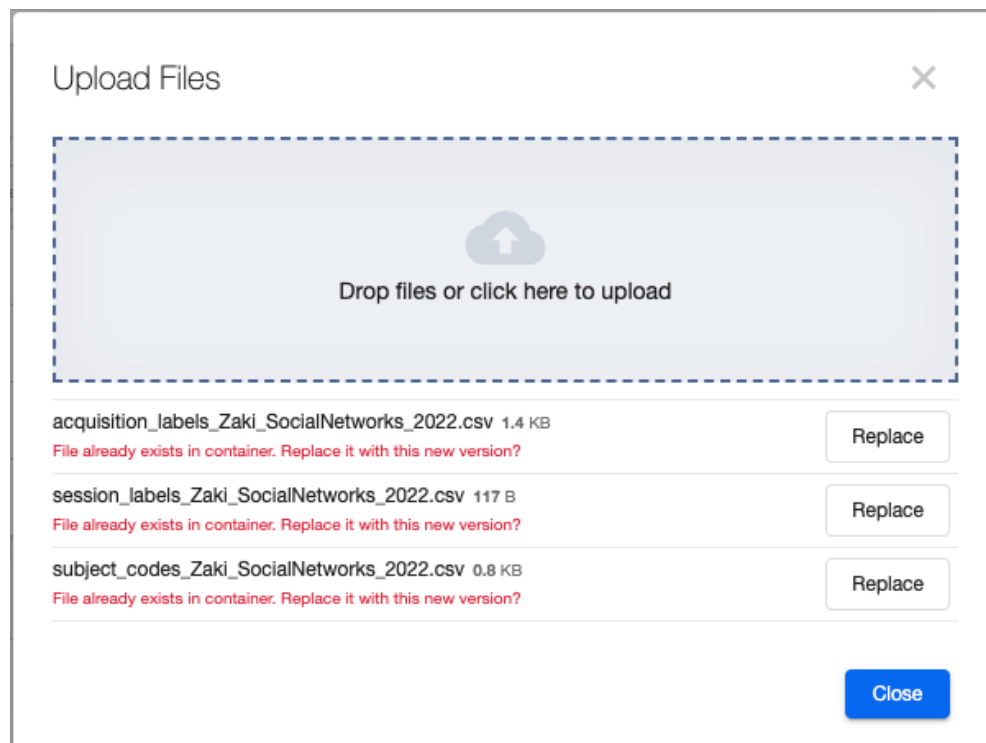
^ BIDS

Attachments
Create Upload

^ File Name
Classification
Type
ACTIONS

acquisition_labels_Zaki_SocialNetworks_2022.csv 11	N/A	tabular data
reproin_mod.json	N/A	source code
session_labels_Zaki_SocialNetworks_2022.csv 11	N/A	tabular data
subject_codes_Zaki_SocialNetworks_2022.csv 11	N/A	tabular data

- It will prompt you to replace any existing files – that’s cool, go ahead and replace them



- Re-run the BIDS Pre-Curation with these tables as input (again, I would un-select the “Suggest” field but it’s not clear if this has any effect at this stage)

Run Analysis Gear



Select an Analysis Gear:

BIDS Pre-Curation

0.3.1

Prepare project for BIDS Curation. BIDS Pre-Curate offers a simple way to modify labels and classifications of project data to be compatible with the BIDS-spec. Running pre-curate on a given project (as a project-level analysis) will generate CSV files that will be populated with a unique list of container labels, as well as slots for the information needed for BIDS curation (classification, task, etc.). These CSV files can be downloaded and modified (outside of Flywheel) to provide missing or corrected information. The completed CSV file is then uploaded to the project (as an attachment) and provided as input to a run of this same gear to do on-the-fly mappings and metadata updates. For more information, please see the [readme in the source repository](#).

Inputs

Configuration

Information

⚠ This gear will act on your behalf with a dedicated API key.

Select Inputs

acquisition_table



acquisition_labels_Zaki_SocialNetworks_2022.csv



session_table



session_labels_Zaki_SocialNetworks_2022.csv



subject_table



subject_codes_Zaki_SocialNetworks_2022.csv



Analysis Label



bids-pre-curate 05/11/2022 08:26:17

Job Tags

Add tags

Close

Run Gear

- Assuming this runs successfully, run the BIDS Curation gear with the reproin_mod.json file included as input
 - Tab over and check the “Reset” box as well

Run Analysis Gear

Select an Analysis Gear:

BIDS Curation

2.1.3_1.0.7

Use this gear to initialize BIDS filenames and attributes on all files within a given project.

Inputs

Configuration

Information

⚠ This gear will act on your behalf with a dedicated API key.

Select Inputs

template

reproin_mod.json

×

Analysis Label

curate-bids 05/11/2022 08:28:21

Job Tags

Add tags

Close

Run Gear

Run Analysis Gear

Select an Analysis Gear:

BIDS Curation

2.1.3_1.0.7

Use this gear to initialize BIDS filenames and attributes on all files within a given project.

Inputs

Configuration

Information

Modify Configuration ↻

base_template

ReproIn

▼

intendedfor_regexes

reset

✓

use_or_save_config

▼

verbosity

INFO

▼

Close

Run Gear

- You will get errors if you have duplicate runs here, you can manually rename these prior to BIDS Curation by clicking “Information” under a subject’s duplicated container

func-bold_task-partial-faces_run-3 10:17					
<input type="checkbox"/>	25088_11_1.dicom.zip	2022-05-10 01:01	MR: Functional, T2*, cni_epl	dicom	Information Download Acquisition Files Delete Acquisition Upload Data to Acquisition Create New File Notes
<input checked="" type="checkbox"/>	25088_11_1_Zaki_SocialNetworks_2022_20220510091144_11.json	2022-05-10 01:02	MR: Functional, T2*, cni_epl	source code	
<input checked="" type="checkbox"/>	25088_11_1_Zaki_SocialNetworks_2022_20220510091144_11.nii.gz	2022-05-10 01:02	MR: Functional, T2*, cni_epl	nifti	
<input checked="" type="checkbox"/>	25088_11_1_Zaki_SocialNetworks_2022_20220510091144...qa.json	2022-05-10 01:04	MR: Functional, T2*, cni_epl	qa	
<input checked="" type="checkbox"/>	25088_11_1_Zaki_SocialNetworks_2022_2022051009114... 1.qa.png	2022-05-10 01:04	MR: Functional, T2*, cni_epl	qa	
func-bold_task-rest_run-2 10:24					
<input type="checkbox"/>	25088_13_1.dicom.zip	2022-05-10 01:19	MR: Functional, T2*, cni_epl	dicom	
<input checked="" type="checkbox"/>	25088_13_1_Zaki_SocialNetworks_2022_20220510091144_13.json	2022-05-10 01:20	MR: Functional, T2*, cni_epl	source code	
<input checked="" type="checkbox"/>	25088_13_1_Zaki_SocialNetworks_2022_20220510091144_13.nii.gz	2022-05-10 01:20	MR: Functional, T2*, cni_epl	nifti	
<input type="checkbox"/>	25088_13_1_physio.gephysio.zip	2022-05-10 01:21	N/A	gephysio	

Acquisition: func-bold_task-partial-faces_run-3

Acquisition Label

func-bold_task-partial-faces_run-

Oak

- First, check with Ian to make sure you have access to Sherlock and Oak ... otherwise none of this information will be helpful!
- At the command line, log in to Sherlock

```
ssh [[ SUNet@login.sherlock.stanford.edu ]]
```

- Navigate to our BIDS project on Oak

```
cd /oak/stanford/groups/jzaki/scp_2022
```

- If you don't have it installed already, install the Flywheel command line interface (CLI) ... you can find it at the link below

- <https://docs.flywheel.io/hc/en-us/articles/360008162214-Installing-the-Flywheel-Command-Line-Interface-CLI->

- You can export BIDS data at the project- or subject-level with the following command

```
fw export bids -p "Zaki_SocialNetworks_2022" ./bids/ [[ --subject 12345 ]]
```

- Once a subject's data is exported, you should run the scripts that I've included to do the following:
 - Remove the session subdirectories for every subject

- Update the fieldmap “IntendedFor” fields ... this will throw an error during BIDS Validation if it’s not done correctly

```
[irf823@sh02-ln01 login /oak/stanford/groups/jzaki/scp_2022]$ tree ./scripts/utility/  
./scripts/utility/  
├── directory_hierarchy.py  
└── session_cleanup.py
```

- I’ll eventually wrap these in a shell script