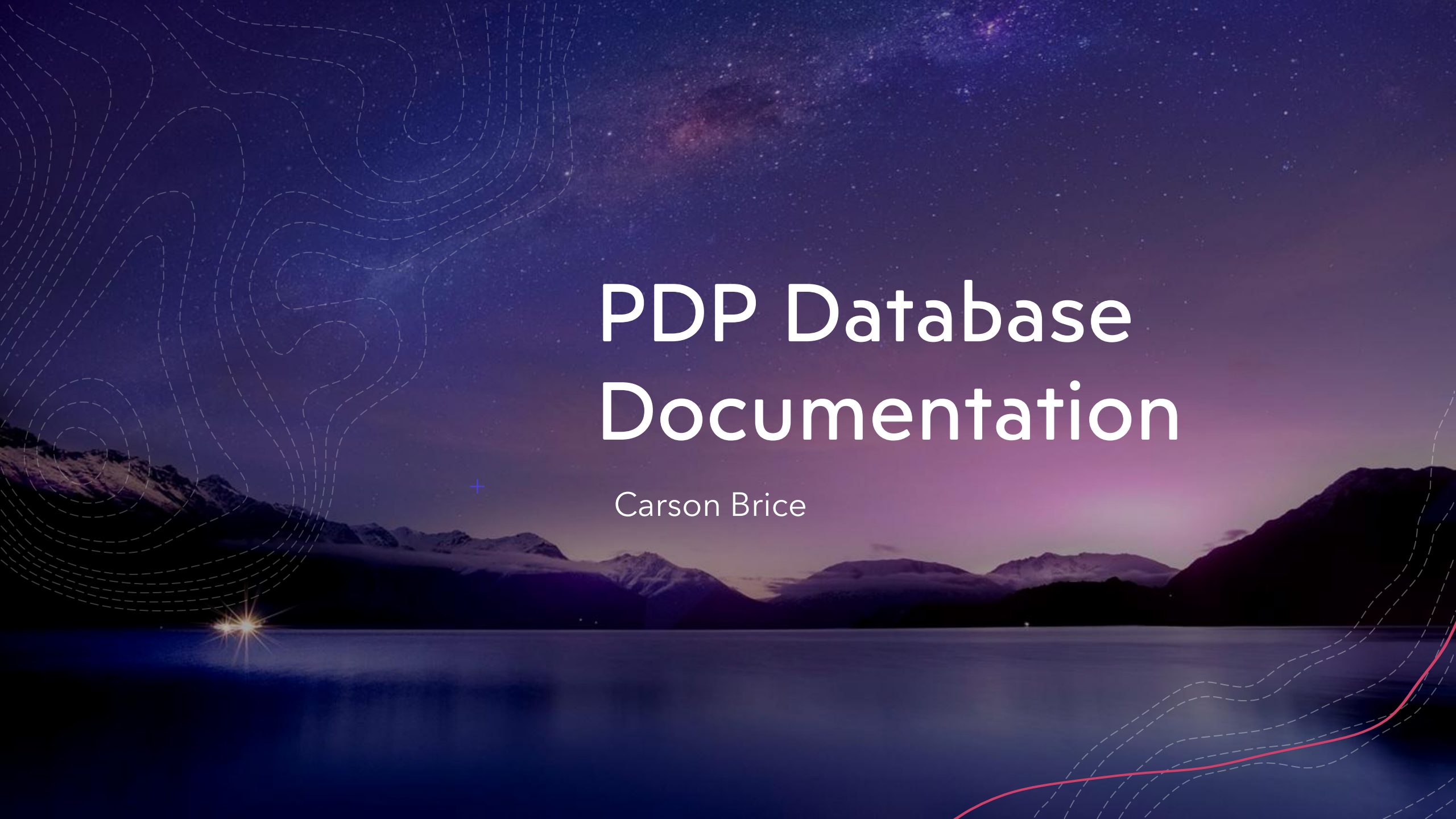
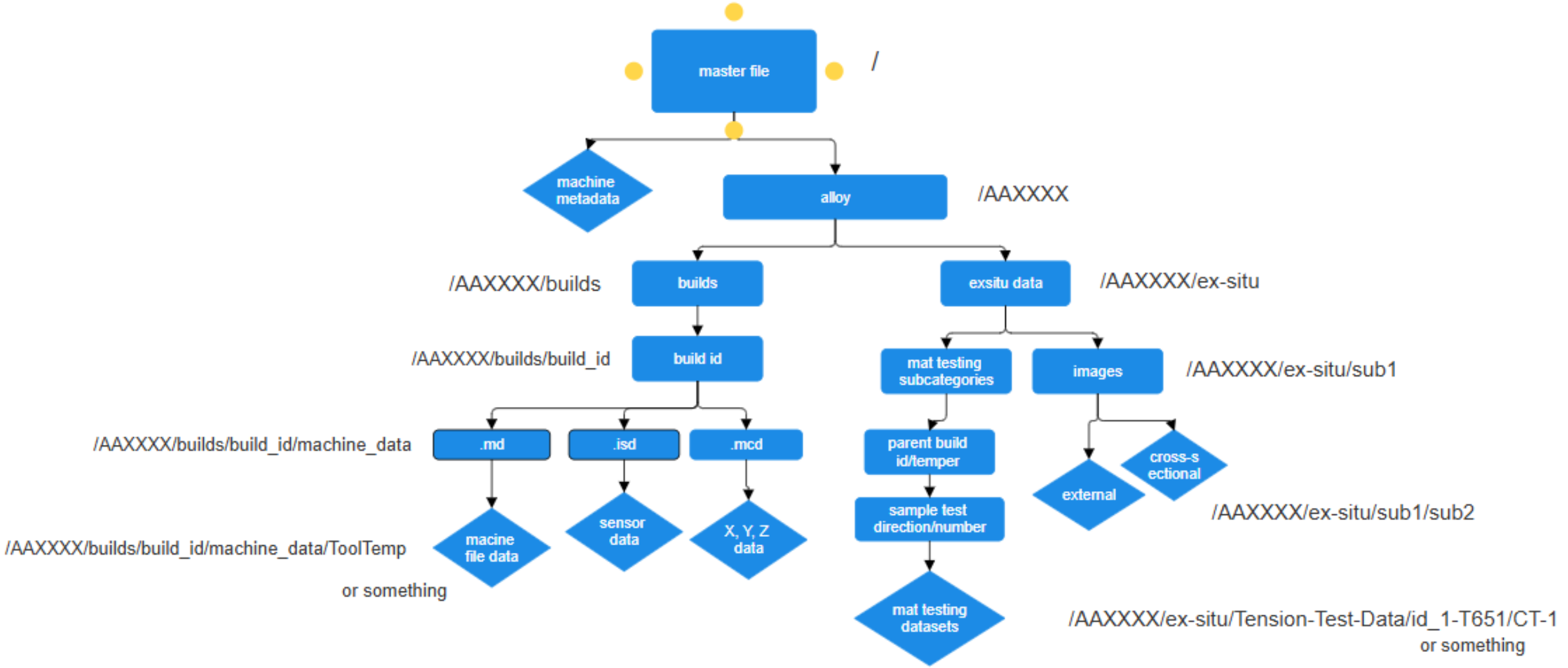

PDP Database Documentation
Carson Brice

Workflow and structure

Hardcoded structure with addresses

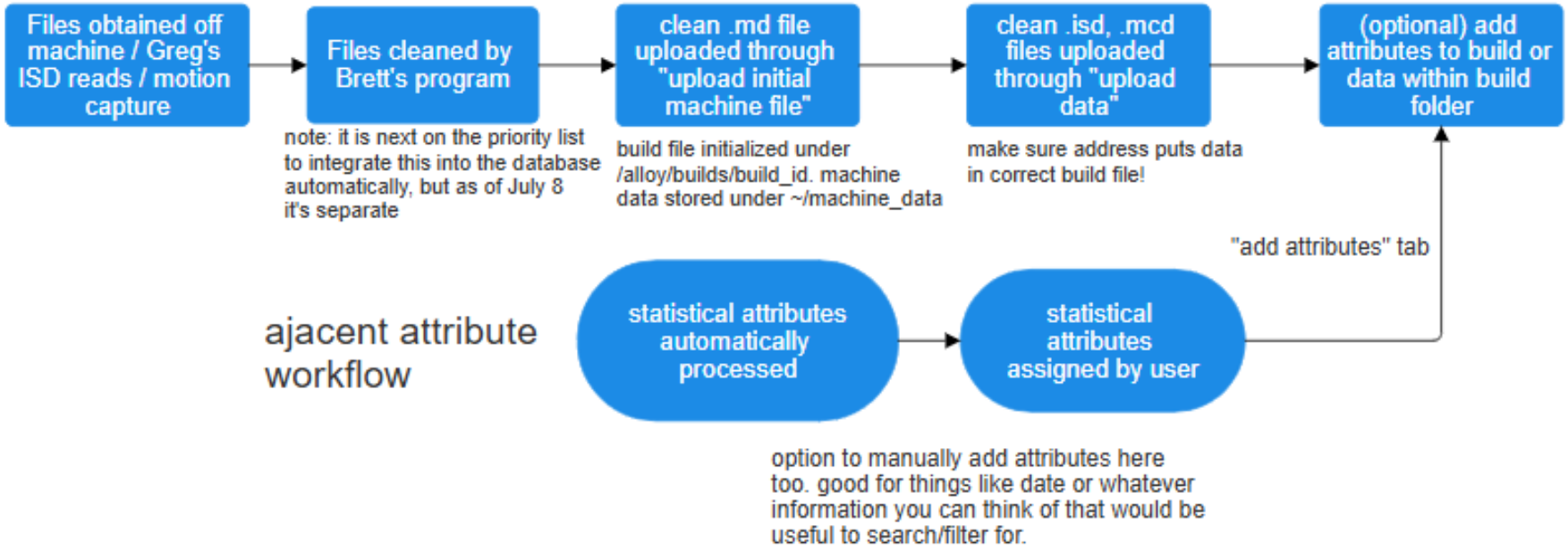


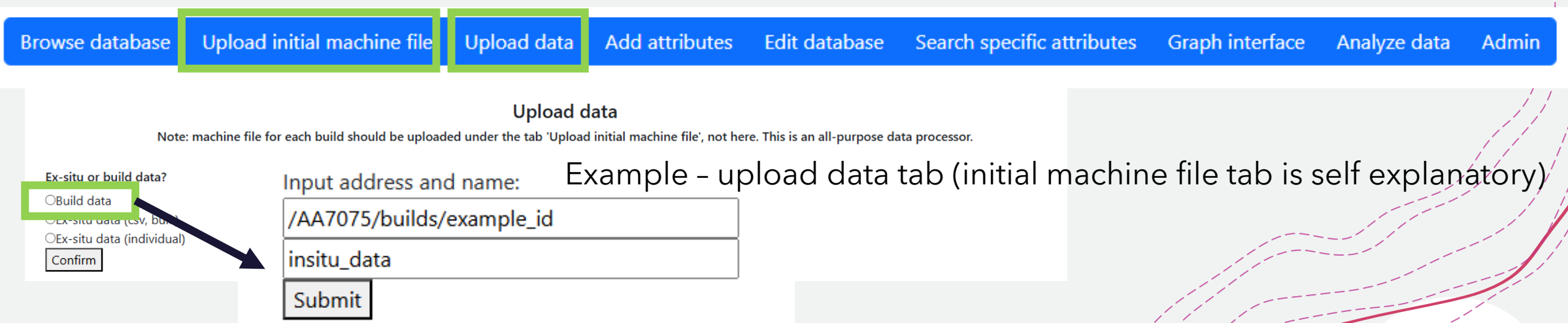
This structure is as flexible as you want it to be – this is just what I've hardcoded and what you're guaranteed to see. Any file can be moved or stored anywhere you can imagine, but convention is super important to make sure things are still searchable.

Addresses are formatted how you see in the examples. Anything outside of this formatting will break!

Never use a forward slash in a name of a group or dataset.

Example Worfklow (build upload)

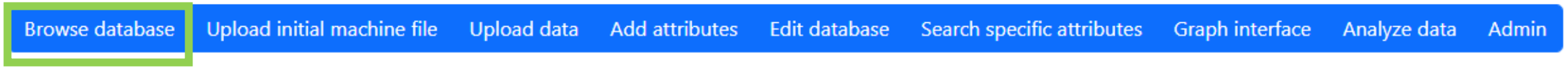




Example – upload data tab (initial machine file tab is self explanatory)

General considerations

+ Use “Browse database” section to get addresses if you need to type something in a box. This will help you not make typos. Click through dropdown menus as they appear and use green copy button to get addresses.



+ Buttons you click don’t have built-in feedback, only messages which pop up when clicked. Please don’t spam click the buttons, click them once and wait for a message or response from the program. Especially in the case of the graphing interface you will have to be patient (until I optimize the logic to make it faster).
+ The database is protected behind Microsoft Azure’s authentication system – without an @astroa.org email, nobody can access the contents of the database without a guest link (slide 17).

Function guides

Ex-situ data upload

Upload data

Note: machine file for each build should be uploaded under the tab 'Upload initial machine file', not here. This is an all-purpose data processor.

Ex-situ or build data?

- ○ Build data
- ◉ Ex-situ data (csv, bulk)
- ○ Ex-situ data (individual)

Confirm

Upload ex-situ CSV

Note: Attributes and location for this data will be automatically processed. Make sure file formatting is standardized.

Upload data from computer:

Select Files

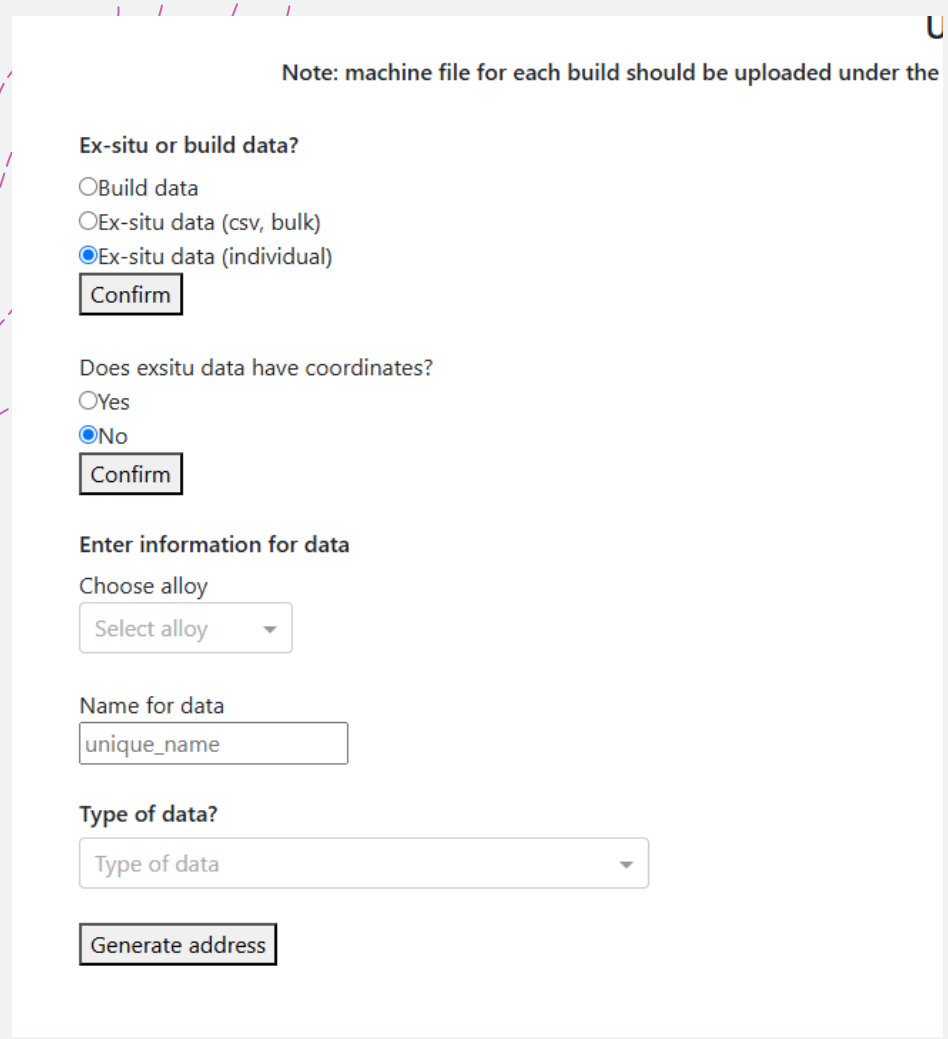
Upload

Bulk csv data upload – hardcoded for ex-situ testing table CSV doc formatting pictured Below. Creates a dataset for each row of each table

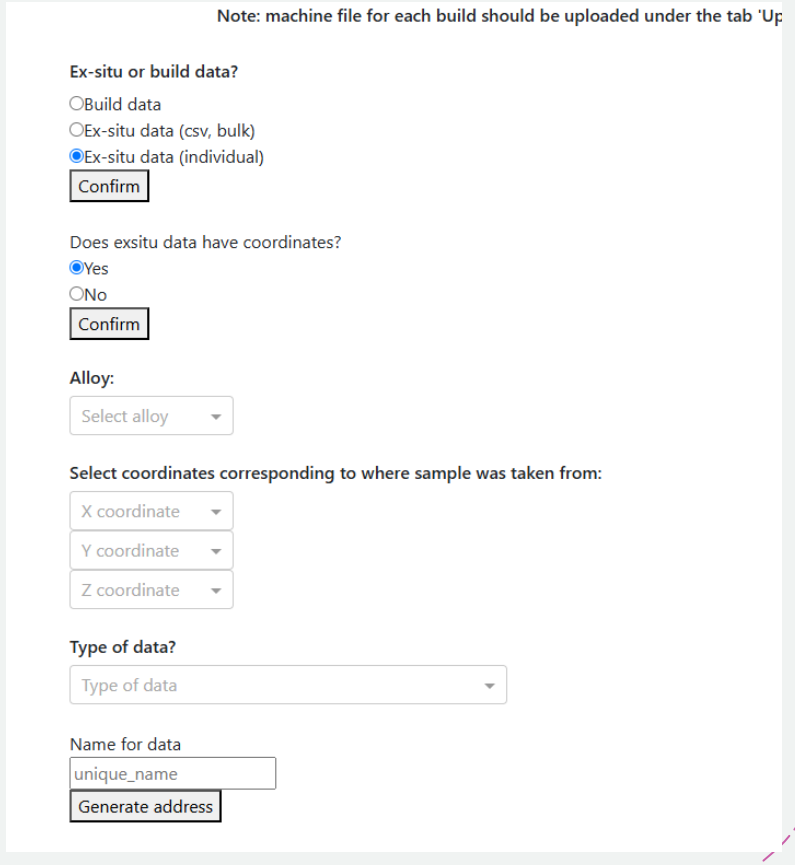
1	Header									
2										
3	Build ID	Name_1								
4	Build Alloy	7050								
5	Build Temp	T651								
6	Test Tempe	T62								
7										
8	Tension Test Data									
9	X coordina	Y coordina	Z coordina	Test directi	test numbe	UTS (KSI)	TYS (KSI)	Elongation	UTS (Mpa)	TYS (Mpa)
10	2	1	2	BD	1	73.624	64.864	7	508	447
11	3	1	3	BD	2	69.657	64.4	5	480	444
12	4	1	4	BD	3	59.718	59.656	2	412	411
13	5	1	5	CT	4	74.092	66.025	6	511	455
14	1	2	1	CT	5	56.432	54.605	1	389	376
15	2	2	2	CT	6	64.195	63.969	1	443	441
16	1	0	1	LT	7	73.498	63.024	7	507	435
17	0	2	0	LT	8	79.206	66.188	14	546	456
18	1	0	0	L	9	75.161	66.084	5	518	456
19	0	0	3	ST	10	73.216	66.82	5	505	461
20	0	4	0	ST	11	65.417	64.382	1	451	444
21	5	0	0	TD	12	60.56	59.266	1	418	409
22										
23	Fracture Toughness Results									
24	X coordina	Y coordina	Z coordina	Test directi	Test numb	Fracture toughness				
25	2	1	2	L-T	1	78				
26	3	1	3	T-L	1	100				
27	4	1	4	S-L	1	35				
28										
29	Smooth Fatigue Results									
30	X coordina	Y coordina	Z coordina	Test directi	Test numb	Cycles to failure				
31	0	4	0	CT	1	87000				
32	5	0	0	CT	2	125000				
33	2	1	2	CT	3	200000				

No formatting on my screenshot but some formatting within this structure is fine. Structure of tables, etc is what matters

Ex-situ data upload – other data

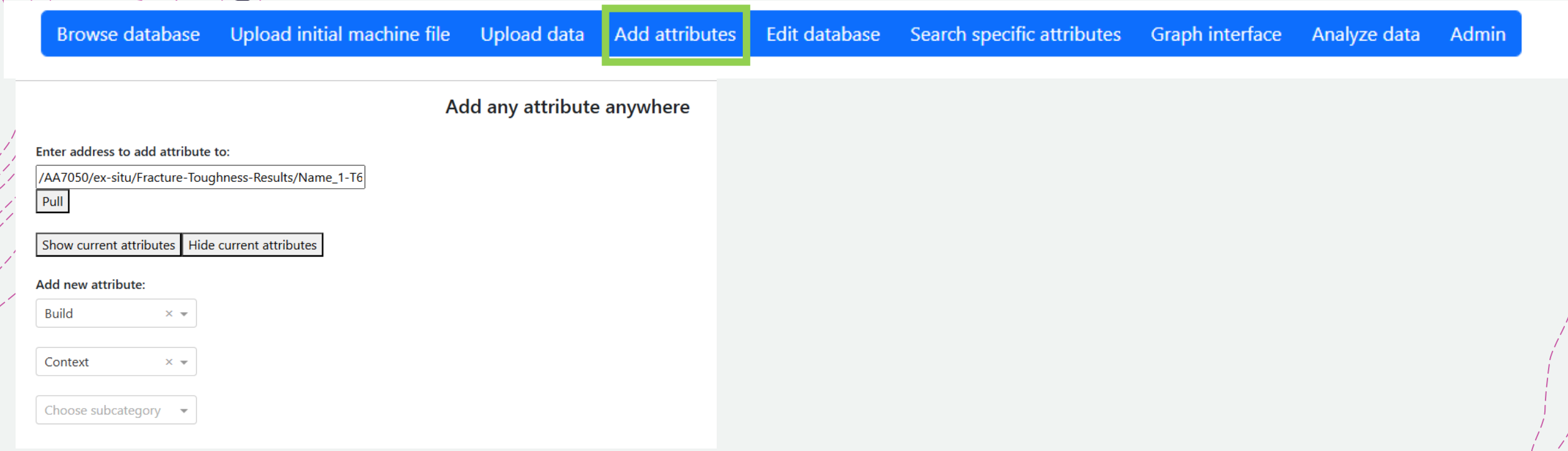


This section is usable and what I recommend for any individual ex-situ upload



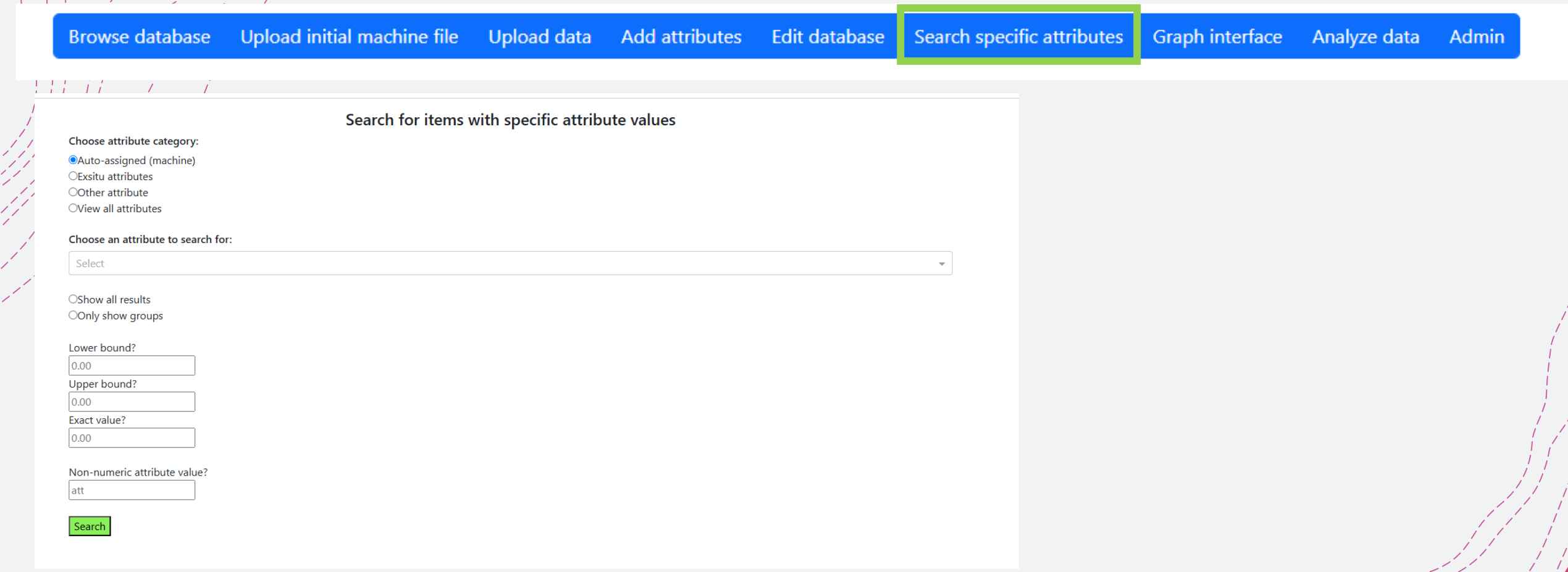
The “coordinates” section was me going in a slightly misguided direction, but I’m leaving it for now. You probably shouldn’t use it honestly

Adding attributes



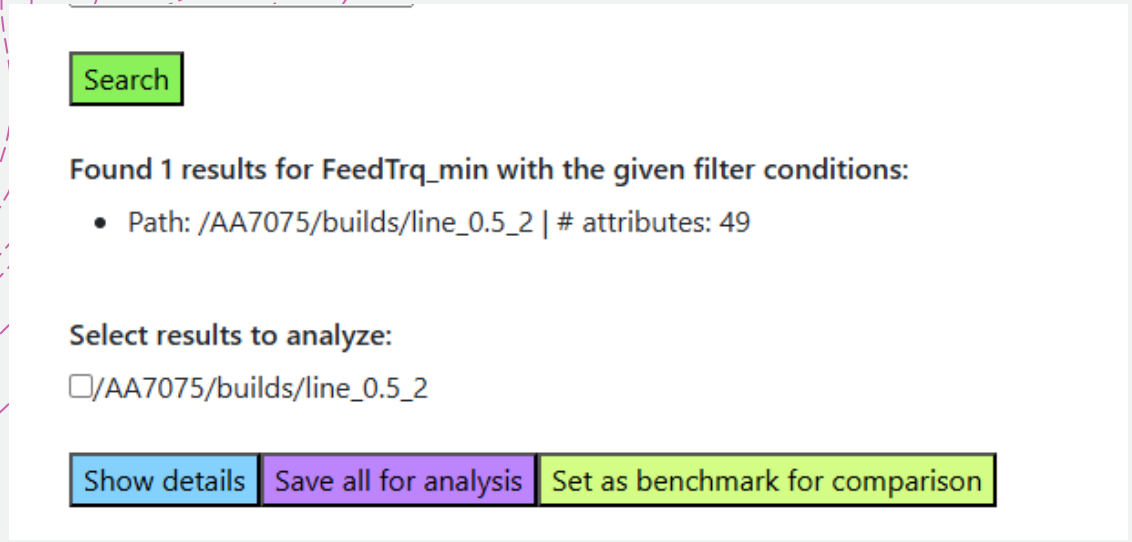
Use the dropdown categories to select which attribute you want to add/edit so that you don't make typos.
If the attribute you want to add isn't in the categories, just select "Manually add" from the first dropdown

Attribute search (1)



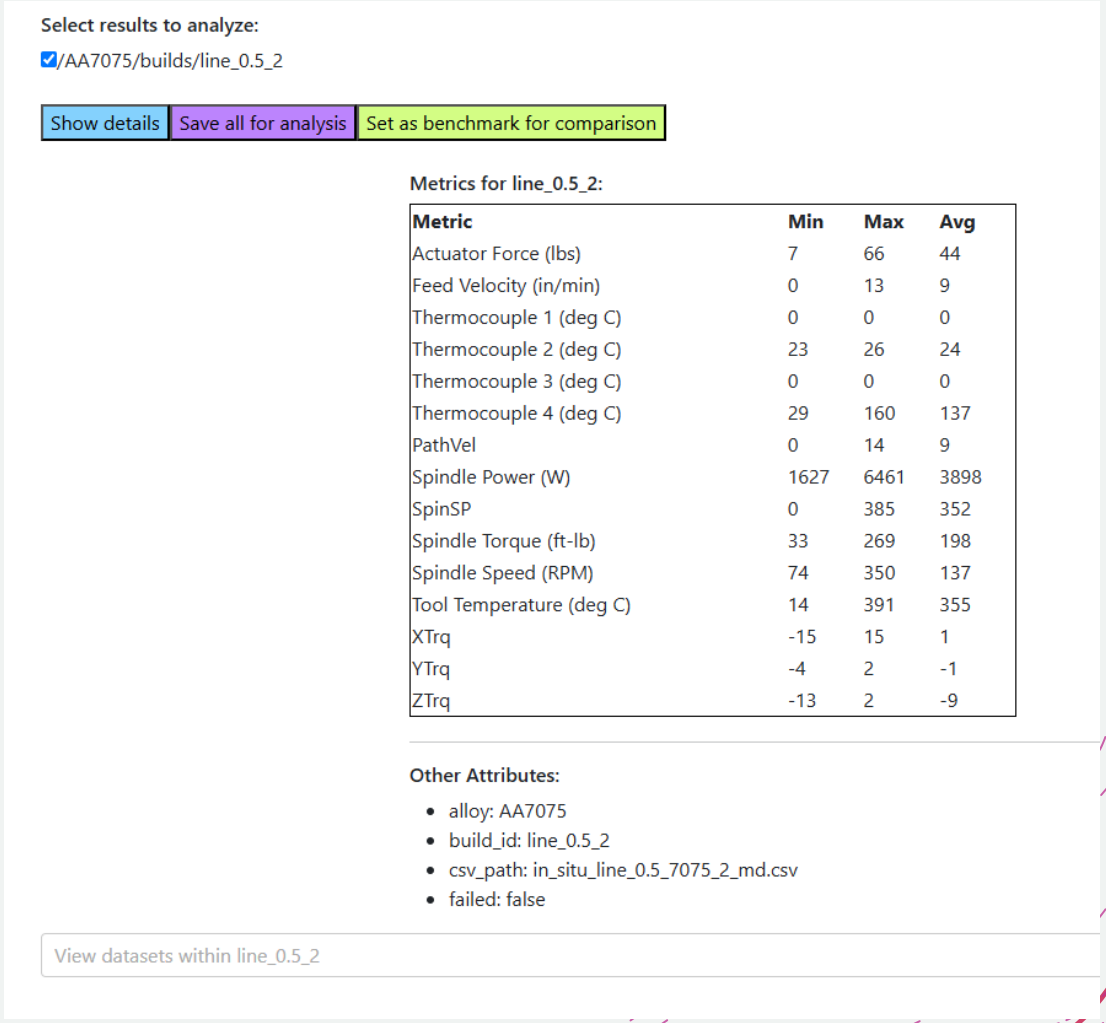
"Choose attribute category" lets you scroll through dropdown menus of attributes that theoretically exist. You can search for others if you don't want to scroll/can't find one. Lower/Upper/Exact value are for numerical attributes.

Attribute search (2)



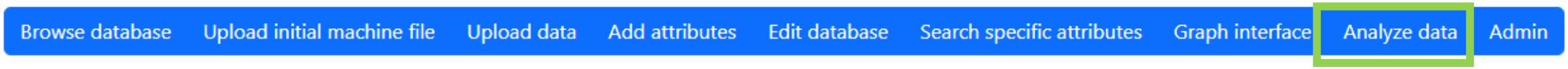
See which datasets match your filter results.

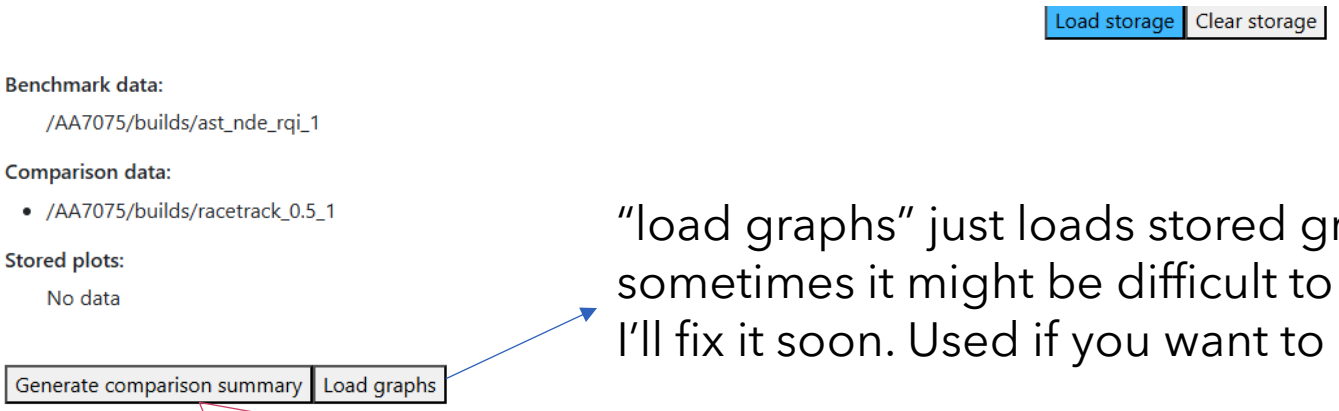
“Set as benchmark” lets you do conformance comparisons with whole builds. Can only send one result here
“Save all for analysis” lets you store as many builds as you want to compare to the benchmark you set
These comparisons are done in “Analyze data” tab



Output of “show details.” If you select a dataset from the dropdown you’ll see a line graph and table.

Analyze data





"load graphs" just loads stored graphs and displays. Labeling is broken so sometimes it might be difficult to tell the difference between graphs but I'll fix it soon. Used if you want to look at graphs from different builds

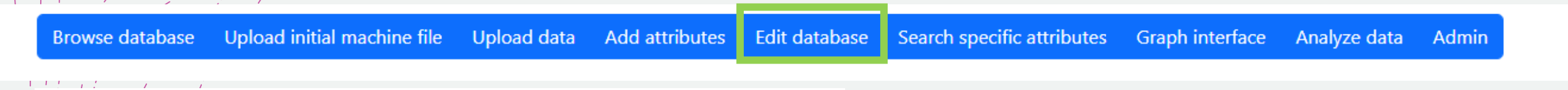
Output of "generate comparison summary" – shows % difference and overall difference at the bottom. Also shows non-numerical atts as either "different" or "same"

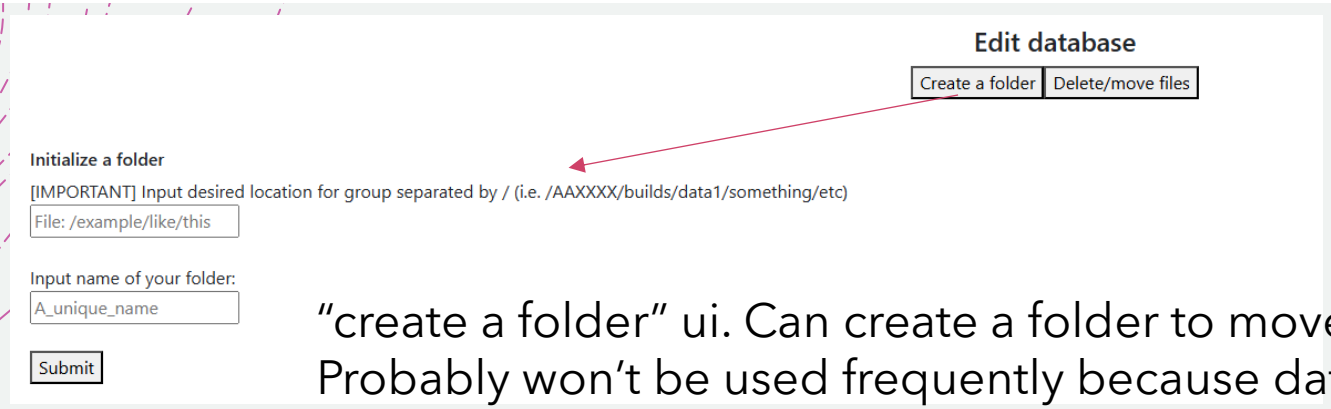
[ast_nde_rqi_1] vs [racetrack_0.5_1]

Metric	% Difference
FeedTrq_avg	-40.4
FeedTrq_max	-7.1
FeedTrq_min	-36.3
FeedVel_avg	-69.8
FeedVel_max	-61.5
FeedVel_min	0
Ktype1_avg	0
Ktype1_max	0
Ktype1_min	0
Ktype2_avg	-48.8
Ktype2_max	-66
Ktype2_min	18.6
Ktype3_avg	100

alloy	Same
csv_path	Different
failed	Same
id	Different
Normalized difference:	**92.3**

Edit database

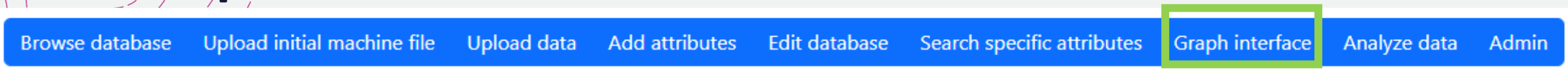


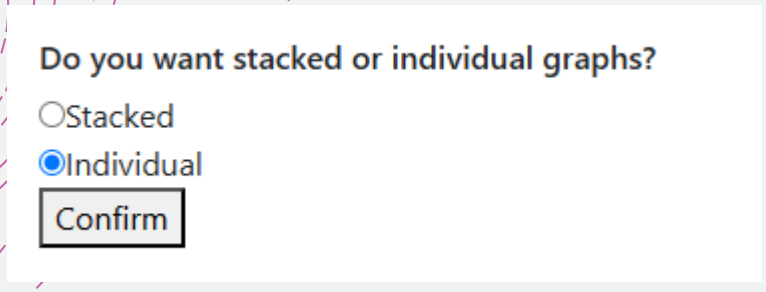


"create a folder" ui. Can create a folder to move something into. Probably won't be used frequently because data upload auto-generates folders.

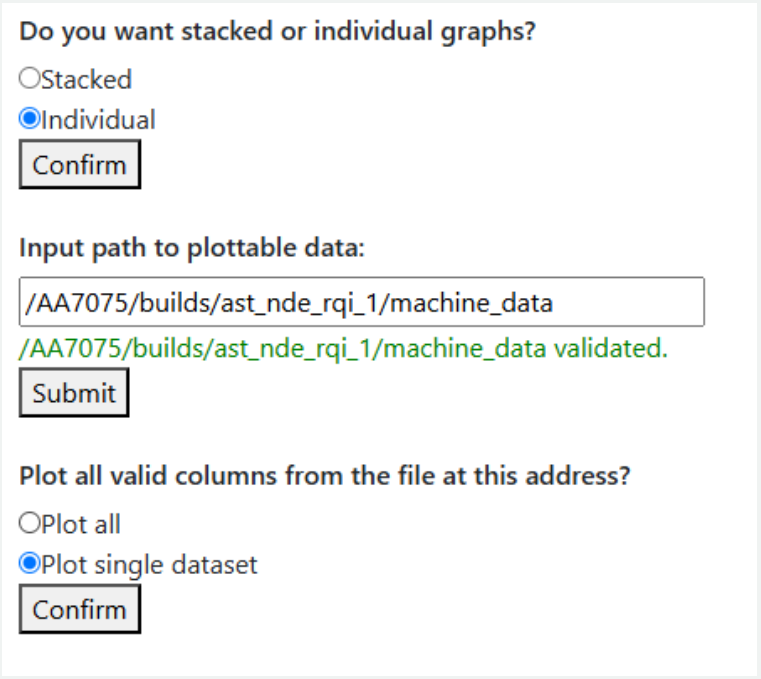
Can input address to edit a dataset or folder. Be careful with spelling – use browse database to get addresses

Graph interface (1)



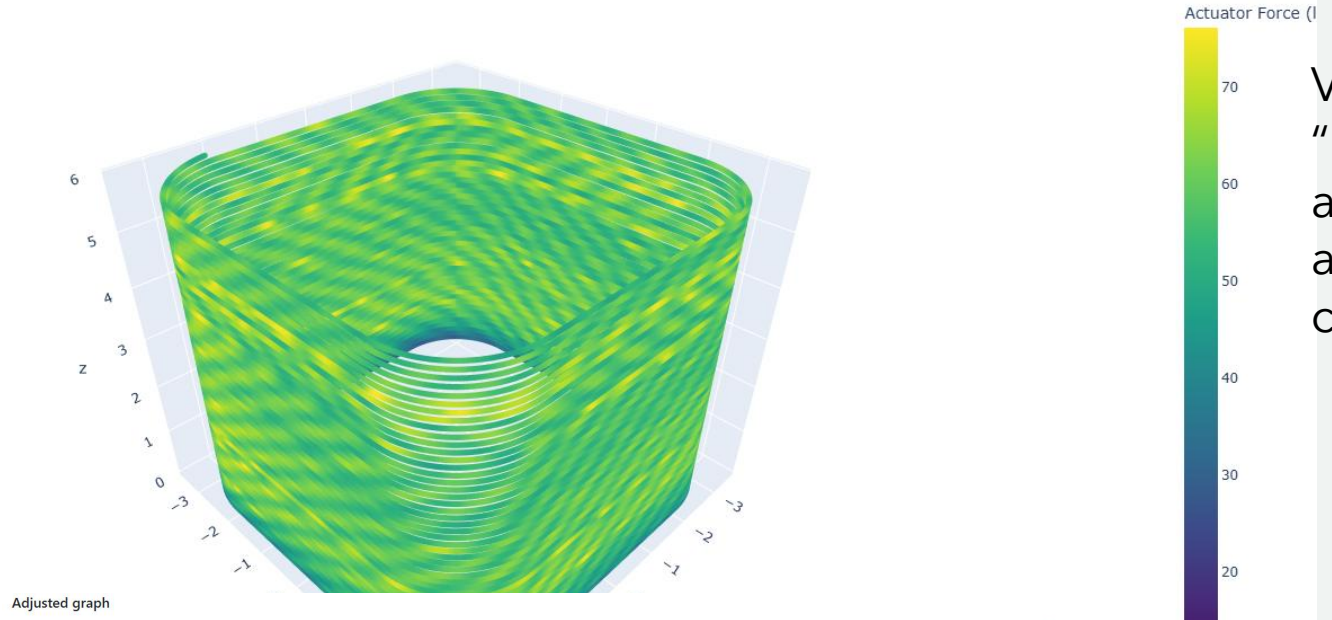


"Stacked" means you'll be generating multiple 2D (metric vs. time) line plots on the same figure. Individual generates one graph per figure (but you have the option to generate many from the same dataset).

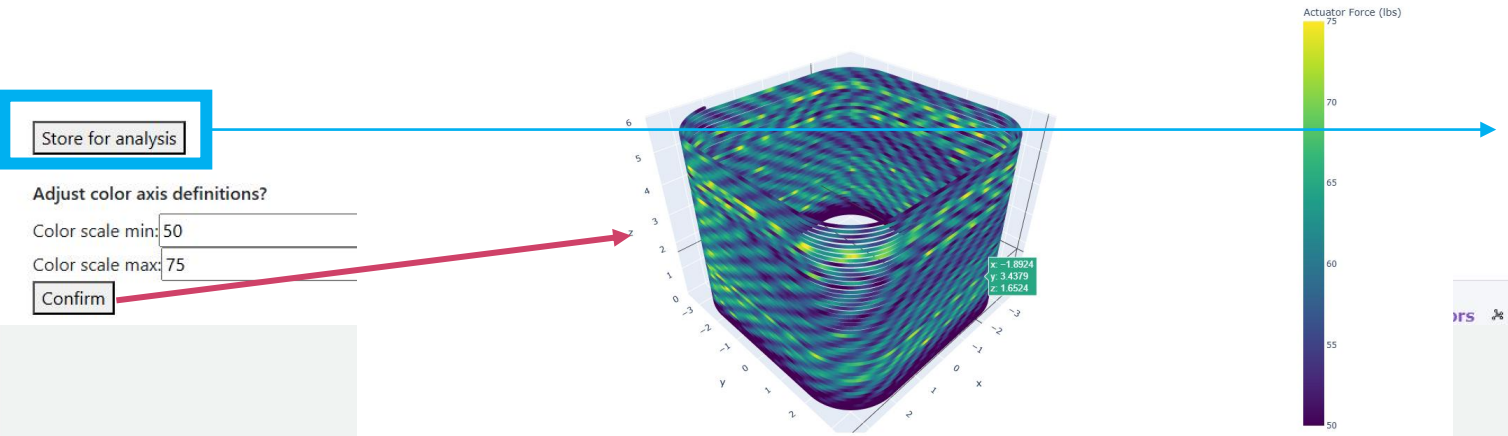


Here you choose single dataset or everything. "Plot all" generates all plots at once and gives you the option to select from checkboxes which ones to view at once (this is SLOW – don't spam the button, just give the website a second!). "Plot single dataset" just does one at a time – for 3D plots (positional) this gives you more functionality because you can adjust the color scale.

Graph interface (2)



Visualization of the 3D plot adjustor in “plot single dataset.” If more detail is in a certain section of the gradient, you can adjust it and see more precise values at certain locations.



This “store for analysis” button lets you cache any graph you want and load it later in “Analyze data.” For example, if you want to see a 3D plot of FeedTrq from 5 different builds, you can go through the graph interface and store each one, then load them all at once in the analysis tab.

Graph interface (3)

Do you want stacked or individual graphs?

(•) Stacked
( ) Individual

[Confirm]

Stacked graph generator

Addresses?

/AA7075/builds/racetrack_0.5_1/machine_data/SpinTrq

[Confirm] [Clear selections]

/AA7075/builds/racetrack_0.5_1/machine_data/SpinTrq validated.

Stored addresses:

['SpinTrq']

[Show graph]

Stacked graph generating menu. Pretty self explanatory – you can just change one thing about the address you entered (i.e. build ID) and store datasets which will be loaded onto the same plot. “Clear selections” resets stored addresses.

Addresses?

/AA7075/builds/ast_nde_rqi_1/machine_data/SpinTrq

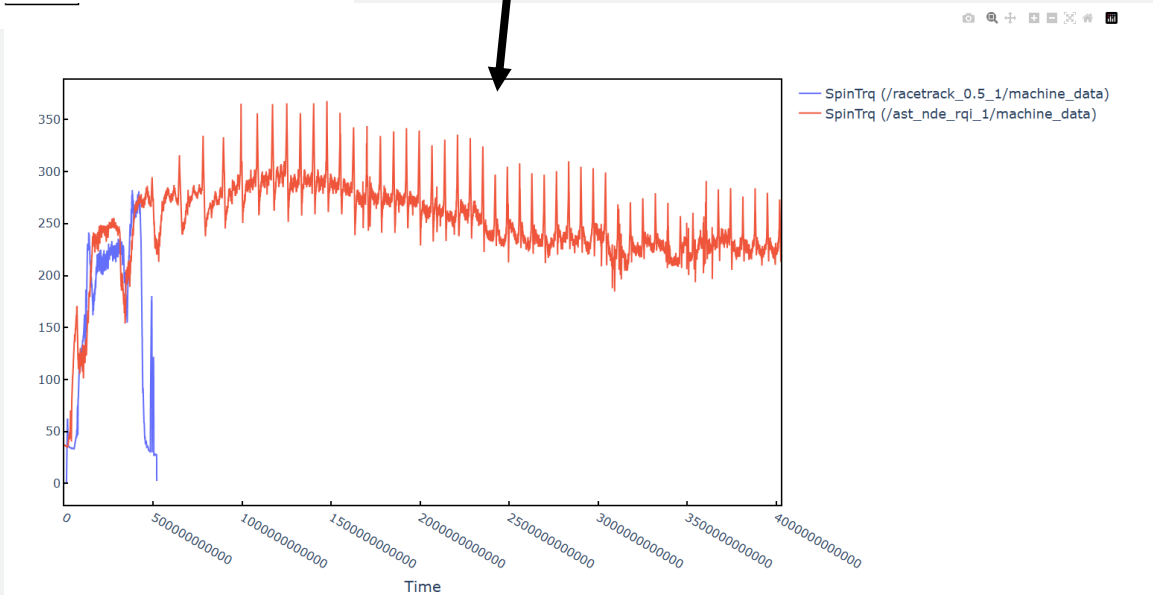
[Confirm] [Clear selections]

/AA7075/builds/ast_nde_rqi_1/machine_data/SpinTrq validated.

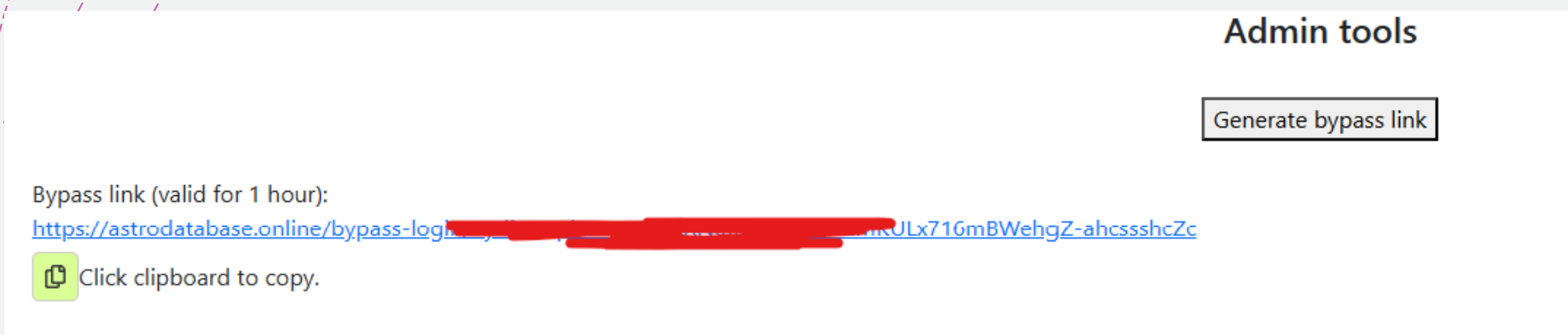
Stored addresses:

['SpinTrq', 'SpinTrq']

[Show graph]



Admin function – guest link



Only non-guest users can use this tab. The link itself is clickable for one hour, but the guest's session is not limited, so be careful with who you give access to because as long as they don't refresh the tab they have access to the database. Each time the tab containing astrodatabase.online is refreshed a new login token is requested, though, and if an official @astroa.org one isn't cached a guest user either has to click on the link again or get a new one.

This should have covered everything – let me know if you have any questions, suggestions, or if you broke something!