

# vfb\_datasets\_output

August 25, 2024

```
[1]: !pip install -r requirements.txt --quiet
!pip install vfb_connect --quiet
```

## 1 VFBTerm DataSet Methods

This notebook demonstrates the usage of the `vfb.term` and `vfb.terms` methods for accessing VFB term information. We'll explore how to create `VFBTerm` objects, access related terms, images, and use advanced features like lazy loading of parents and manipulating collections of terms with `VFBTerms`.

```
[2]: # Import the VFBConnect class
from vfb_connect import vfb
```

Welcome to the [Virtual Fly Brain](https://virtualflybrain.org) API

See the documentation at: <https://virtualflybrain.org/docs/tutorials/apis/>

Establishing connections to <https://VirtualFlyBrain.org> services...

Session Established!

Type `vfb.` and press `tab` to see available queries. You  
can run `help` against any query e.g. `help(vfb.get_TermInfo)`

### 1.1 Creating and Exploring VFBTerm DataSet Objects

We'll start by creating a `VFBTerm` object using the `vfb.term` method.

```
[3]: # Example of creating a VFBTerm object using a term name
vfb_dataset = vfb.term('EM FAFB Engert et al. 2022')
vfb_dataset
```

```
[3]: VFBTerm(term=Term(term=MinimalEntityInfo(name=EM FAFB Engert et al. 2022,
short_form=Engert2022), link=https://n2t.net/vfb:Engert2022))
```

```
[4]: vfb_dataset.summary
```

```
[4]:      ID      Name \
0  Engert2022  EM FAFB Engert et al. 2022
```

	Description \
0	FAFB EM reconstructed neurons from Engert et a...

	URL	Counts \
0	<a href="https://n2t.net/vfb:Engert2022">https://n2t.net/vfb:Engert2022</a>	{'images': 144, 'types': 5}

	Publications	License \
0	[Engert et al., 2022, eLife 11: e78110]	CC-BY_4.0

	Cross References
0	[ <a href="https://fafb.catmaid.virtualflybrain.org/?pid...">https://fafb.catmaid.virtualflybrain.org/?pid...</a>

[5]: vfb\_dataset.publications

[5]: [Publication(pub=MinimalEntityInfo(name=Engert et al., 2022, eLife 11: e78110, short\_form=FBBrf0253662), link=http://flybase.org/reports/FBBrf0253662)]

[6]: vfb\_dataset.license

[6]: Term(term=MinimalEntityInfo(name=CC-BY\_4.0, short\_form=VFBlicense\_CC\_BY\_4\_0), link=https://creativecommons.org/licenses/by/4.0/legalcode)

[7]: vfb\_dataset.counts

[7]: {'images': 144, 'types': 5}

[8]: vfb\_dataset.xrefs

[8]: [Xref(link\_text=EM FAFB Engert et al. 2022 on VFB CATMAID Adult Brain (FAFB), link=https://fafb.catmaid.virtualflybrain.org/?pid=1&tool=tracingtool&sid0=1&s0=2&active\_skeleton\_id=17682008, accession=17682008)]

[9]: vfb\_dataset.instances

Loading instances for the first time...

Loading 144 instances for dataset: EM FAFB Engert et al. 2022...

Loading terms:	0%	0/144 [00:00<?, ?it/s]
Loading terms:	1%	1/144 [00:00<00:23, 5.97it/s]
Loading terms:	1%	2/144 [00:00<00:23, 5.96it/s]
Loading terms:	2%	3/144 [00:00<00:23, 5.95it/s]
Loading terms:	3%	4/144 [00:00<00:23, 5.95it/s]
Loading terms:	3%	5/144 [00:00<00:23, 5.95it/s]
Loading terms:	4%	6/144 [00:01<00:23, 5.94it/s]

Loading terms:	5%	7/144 [00:01<00:23, 5.93it/s]
Loading terms:	6%	8/144 [00:01<00:22, 5.94it/s]
Loading terms:	6%	9/144 [00:01<00:22, 5.94it/s]
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Loading terms:	16%	23/144 [00:03<00:20, 5.78it/s]
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[10]: vfb_dataset.instances.get_summaries()
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2    VFB_001029ic      GRN R4#6 (FAFB:7471728)  GRN R4#6, FBbt:00058156
3    VFB_001029kj  GRN R6#17 (FAFB:11559900)  GRN R6#17, FBbt:00100042
4    VFB_001029ly  GRN L4#15 (FAFB:16149178)  GRN L4#15, FBbt:00110887
..      ...
139  VFB_001029k9  GRN R1#9 (FAFB:11559796)  GRN R1#9, FBbt:00048152
140  VFB_001029lc  GRN L4#6 (FAFB:16149035)  GRN L4#6, FBbt:00110887
141  VFB_001029il      GRN R4#9 (FAFB:7723218)  GRN R4#9, FBbt:00058156
142  VFB_001029lt  GRN L2#7 (FAFB:16149144)  GRN L2#7, FBbt:00048152
143  VFB_001029i6      GRN R4#2 (FAFB:7349285)  GRN R4#2, FBbt:00058156

      URL \
0    https://n2t.net/vfb:VFB_001029ja
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2    https://n2t.net/vfb:VFB_001029ic
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Parents License \
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1 [sugar-sensing neuron of labellar taste bristle] CC-BY_4.0
2 [sugar-sensing neuron of labellar taste bristle] CC-BY_4.0
3 [water-sensing neuron of labellar taste bristle] CC-BY_4.0
4 [gustatory receptor neuron of the labellum] CC-BY_4.0
..
139 [bitter-sensing neuron of labellar taste bristle] CC-BY_4.0
140 [gustatory receptor neuron of the labellum] CC-BY_4.0
141 [sugar-sensing neuron of labellar taste bristle] CC-BY_4.0
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143 [sugar-sensing neuron of labellar taste bristle] CC-BY_4.0

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#### Datasets

```

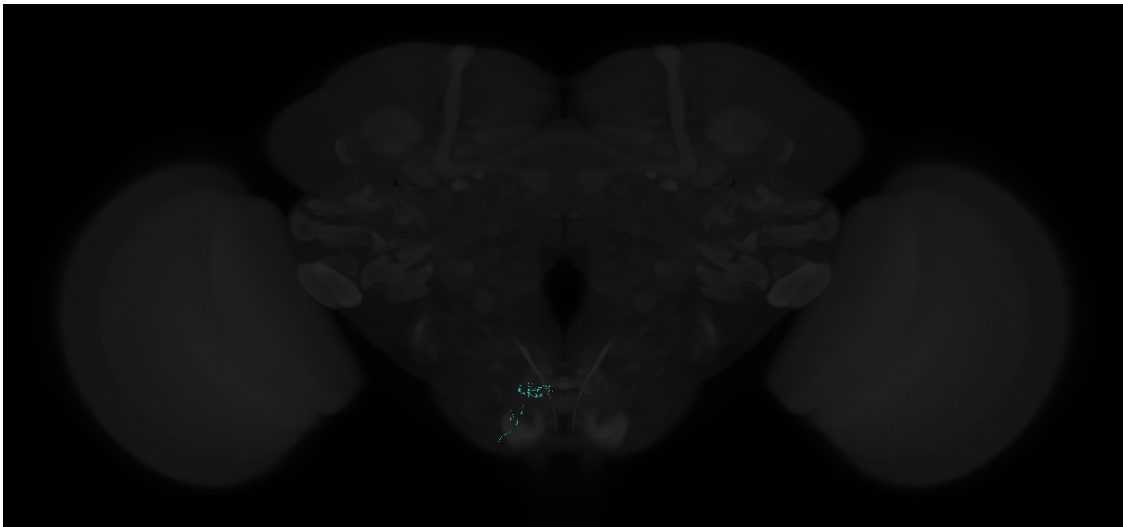
0    [EM FAFB Engert et al. 2022]
1    [EM FAFB Engert et al. 2022]
2    [EM FAFB Engert et al. 2022]
3    [EM FAFB Engert et al. 2022]
4    [EM FAFB Engert et al. 2022]
..
139  [EM FAFB Engert et al. 2022]
140  [EM FAFB Engert et al. 2022]
141  [EM FAFB Engert et al. 2022]
142  [EM FAFB Engert et al. 2022]
143  [EM FAFB Engert et al. 2022]

```

[144 rows x 9 columns]

```
[11]: vfb_dataset.show()
```

Loading thumbnail for GRN L4#1 (FAFB:10154803)



```
[12]: vfb_dataset.open(verbose=True)
```

Opening <https://n2t.net/vfb:Engert2022>

```

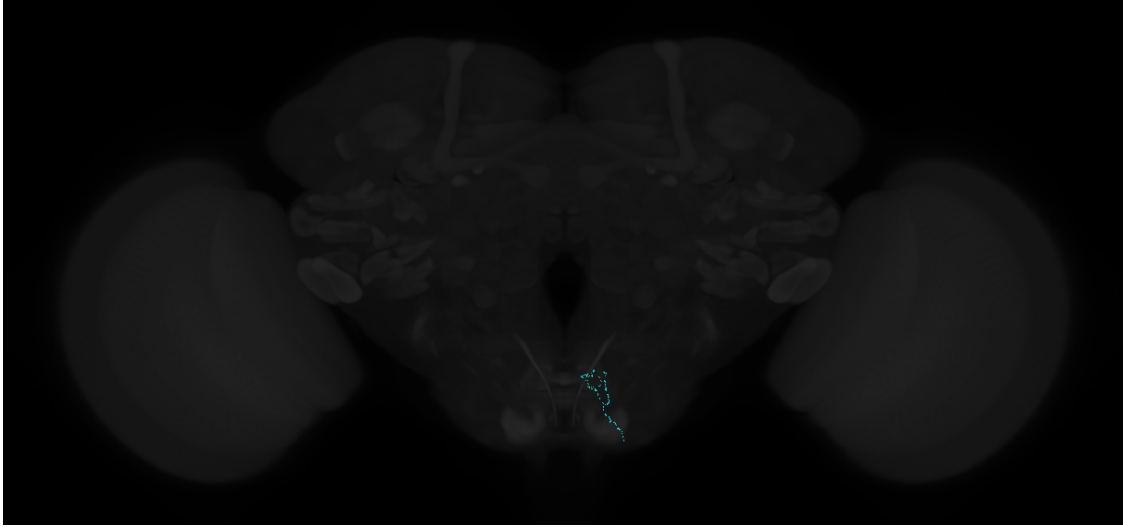
[13]: a=vfb_dataset.instances[50]

print(a.name)

a.channel_images[0].image.show()

```

GRN R6#22 (FAFB:14947952)



```
[14]: vfb_dataset.plot3d()
```

```
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```

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```

Enforcing the display template space as JRC2018Unisex from the first skeleton found. Specify a template to avoid this.

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Plotting 3D representation of 144 items

Please see [VFBTerm Notebook](#) for examples of how to load specific sets of terms and display neurons in context