

Resource Summary Report

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CATMAID

RRID:SCR_006278

Type: Tool

Proper Citation

CATMAID (RRID:SCR_006278)

Resource Information

URL: <http://catmaid.org/>

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Description: A toolkit designed to navigate, share and collaboratively annotate massive image data sets of biological specimens. The interface enables synchronized navigation through multiple registered datasets even at vastly different scales such as in comparisons between optical and electron microscopy. The interface is inspired by GoogleMaps, with which it shares basic navigation concepts, enhanced to allow the exploration of 3D biological image data acquired by optical or physical sectioning microscopy techniques. The interface enables seamless sharing of regions of interest through bookmarks and synchronized navigation through multiple registered data sets. With massive biological image data sets it is unrealistic to create a sustainable centralized repository. A unique feature of CATMAID is its partially decentralized architecture where the presented image data can reside on any Internet accessible server and yet can be easily cross-referenced in the central database. In this way no image data are duplicated and the data producers retain full control over their images. CATMAID is intended to serve as data sharing platform for biologists using high-resolution imaging techniques to probe large specimens. Any high-throughput, high-content imaging project such as gene expression pattern screens would benefit from the interface for data sharing and annotation. Features: * Fast terabyte-scale image data browsing * Collaborative microcircuit reconstruction and annotation * Flexible hierarchical semantic annotation * Multiple linked image stack display * Neuron Catalog * SVG and WebGL-based neuronal morphology viewer * Open source software

Abbreviations: CATMAID

Synonyms: Collaborative Annotation Toolkit for Massive Amounts of Image Data

Resource Type: source code, software application, software resource

Defining Citation: [PMID:19376822](#)

Keywords: microscopy, image, data sharing, platform, annotation, 3d image, electron microscopy, light microscopy, neural circuit, reconstruction, serial section, alignment, tracing, neuron, FASEB list

Funding: INCF Swiss Node ;
Swiss National Science Foundation

Availability: Open unspecified license; AGPL license

Resource Name: CATMAID

Resource ID: SCR_006278

Alternate IDs: nlx_151922

Alternate URLs: <http://fly.mpi-cbg.de/~saalfeld/catmaid/>

Record Creation Time: 20220129T080235+0000

Record Last Update: 20260801T190950+0000

Ratings and Alerts

No rating or validation information has been found for CATMAID.

No alerts have been found for CATMAID.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 86 mentions in open access literature.

Listed below are recent publications. The full list is available at [PRECISE-TBI](#) .

Verasztó C, et al. (2025) Whole-body connectome of a segmented annelid larva. eLife, 13.

Erginkaya M, et al. (2025) A competitive disinhibitory network for robust optic flow processing in Drosophila. Nature neuroscience, 28(6), 1241.

Zhao A, et al. (2025) Eye structure shapes neuron function in Drosophila motion vision. Nature, 646(8083), 135.

Gruber L, et al. (2025) The unique synaptic circuitry of specialized olfactory glomeruli in Drosophila melanogaster. eLife, 12.

Zhu J, et al. (2024) Feedback inhibition by a descending GABAergic neuron regulates timing of escape behavior in Drosophila larvae. eLife, 13.

Schlegel P, et al. (2024) Whole-brain annotation and multi-connectome cell typing of *Drosophila*. *Nature*, 634(8032), 139.

Ott CM, et al. (2024) Ultrastructural differences impact cilia shape and external exposure across cell classes in the visual cortex. *Current biology : CB*, 34(11), 2418.

Eckstein N, et al. (2024) Neurotransmitter classification from electron microscopy images at synaptic sites in *Drosophila melanogaster*. *Cell*, 187(10), 2574.

Jonaitis J, et al. (2024) STEERING FROM THE REAR: COORDINATION OF CENTRAL PATTERN GENERATORS UNDERLYING NAVIGATION BY ASCENDING INTERNEURONS. *bioRxiv : the preprint server for biology*.

Christenson MP, et al. (2024) Hue selectivity from recurrent circuitry in *Drosophila*. *Nature neuroscience*, 27(6), 1137.

Ott CM, et al. (2024) Permanent deconstruction of intracellular primary cilia in differentiating granule cell neurons. *The Journal of cell biology*, 223(10).

Bezares Calderón LA, et al. (2024) Mechanism of barotaxis in marine zooplankton. *eLife*, 13.

Schoofs A, et al. (2024) Serotonergic modulation of swallowing in a complete fly vagus nerve connectome. *Current biology : CB*, 34(19), 4495.

Hall ET, et al. (2024) Cytoneme signaling provides essential contributions to mammalian tissue patterning. *Cell*, 187(2), 276.

Syed DS, et al. (2024) Inhibitory circuits generate rhythms for leg movements during *Drosophila* grooming. *bioRxiv : the preprint server for biology*.

Gonz Lez-Segarra AJ, et al. (2023) Hunger- and thirst-sensing neurons modulate a neuroendocrine network to coordinate sugar and water ingestion. *bioRxiv : the preprint server for biology*.

Zhao A, et al. (2023) A comprehensive neuroanatomical survey of the *Drosophila* Lobula Plate Tangential Neurons with predictions for their optic flow sensitivity. *bioRxiv : the preprint server for biology*.

Liu Y, et al. (2023) Synchronous multi-segmental activity between metachronal waves controls locomotion speed in *Drosophila* larvae. *eLife*, 12.

Laturney M, et al. (2023) Mating activates neuroendocrine pathways signaling hunger in *Drosophila* females. *eLife*, 12.

Ott CM, et al. (2023) Nanometer-scale views of visual cortex reveal anatomical features of primary cilia poised to detect synaptic spillover. *bioRxiv : the preprint server for biology*.