Calcium Imaging data Analysis

RRID:SCR_021533
Type: Tool

Proper Citation

Calcium Imaging data Analysis (RRID:SCR_021533)

Resource Information

URL: https://github.com/flatironinstitute/CaImAn

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Description: Open source software tool for scalable calcium imaging data analysis. Used for large scale calcium imaging analysis, including movie handling, motion correction, source extraction, spike deconvolution and result visualization.

Abbreviations: CaImAn

Resource Type: data processing software, software toolkit, image analysis software, software library, software resource, software application

Defining Citation: DOI:10.7554/elife.38173

Keywords: calcium imaging analysis, movie handling, motion correction, source extraction, spike deconvolution, result visualization, OpenBehavior

Funding:

Availability: Free, Available for download, Freely Available

Resource Name: Calcium Imaging data Analysis

Resource ID: SCR_021533

Alternate URLs: https://edspace.american.edu/openbehavior/project/caiman/

License: GNU General Public License

Record Creation Time: 20220129T080356+0000

Record Last Update: 20250412T060345+0000

Ratings and Alerts

No rating or validation information has been found for Calcium Imaging data Analysis.

No alerts have been found for Calcium Imaging data Analysis.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 28 mentions in open access literature.

Listed below are recent publications. The full list is available at RRID.

Zhu MY, et al. (2025) A Neural Circuit For Bergamot Essential Oil-Induced Anxiolytic Effects. Advanced science (Weinheim, Baden-Wurttemberg, Germany), 12(1), e2406766.

Bao Y, et al. (2024) Accurate neuron segmentation method for one-photon calcium imaging videos combining convolutional neural networks and clustering. Communications biology, 7(1), 970.

Reising JP, et al. (2024) Astrocytic Calcium Signaling Toolkit (astroCaST): efficient analysis of dynamic astrocytic calcium events. Frontiers in cellular neuroscience, 18, 1408607.

Benezra SE, et al. (2024) Learning enhances behaviorally relevant representations in apical dendrites. eLife, 13.

Zhao P, et al. (2024) MiniXL: An open-source, large field-of-view epifluorescence miniature microscope for mice capable of single-cell resolution and multi-brain region imaging. bioRxiv : the preprint server for biology.

Baker CM, et al. (2024) A Semi-supervised Pipeline for Accurate Neuron Segmentation with Fewer Ground Truth Labels. eNeuro, 11(2).

Stempel AV, et al. (2024) Tonically active GABAergic neurons in the dorsal periaqueductal gray control instinctive escape in mice. Current biology : CB, 34(13), 3031.

de Malmazet D, et al. (2024) Retinal origin of orientation but not direction selective maps in the superior colliculus. Current biology : CB, 34(6), 1222.

Obara K, et al. (2023) Change detection in the primate auditory cortex through feedback of prediction error signals. Nature communications, 14(1), 6981.

Petzold A, et al. (2023) Complementary lateral hypothalamic populations resist hunger pressure to balance nutritional and social needs. Cell metabolism, 35(3), 456.

Li C, et al. (2023) Pathway-specific inputs to the superior colliculus support flexible responses to visual threat. Science advances, 9(35), eade3874.

Petter EA, et al. (2023) Elucidating a locus coeruleus-dentate gyrus dopamine pathway for operant reinforcement. eLife, 12.

Eom M, et al. (2023) Statistically unbiased prediction enables accurate denoising of voltage imaging data. Nature methods, 20(10), 1581.

Yang JY, et al. (2023) Restructuring of olfactory representations in the fly brain around odor relationships in natural sources. bioRxiv : the preprint server for biology.

Lloyd E, et al. (2023) A protocol for whole-brain Ca2+ imaging in Astyanax mexicanus, a model of comparative evolution. STAR protocols, 4(4), 102517.

Chambers AR, et al. (2022) Cell-type-specific silence in thalamocortical circuits precedes hippocampal sharp-wave ripples. Cell reports, 40(4), 111132.

Zhang Y, et al. (2022) Detailed mapping of behavior reveals the formation of prelimbic neural ensembles across operant learning. Neuron, 110(4), 674.

Jarzebowski P, et al. (2022) Different encoding of reward location in dorsal and intermediate hippocampus. Current biology : CB, 32(4), 834.

Hattori R, et al. (2022) PatchWarp: Corrections of non-uniform image distortions in two-photon calcium imaging data by patchwork affine transformations. Cell reports methods, 2(5), 100205.

Zhuang J, et al. (2021) Laminar distribution and arbor density of two functional classes of thalamic inputs to primary visual cortex. Cell reports, 37(2), 109826.