Resource Summary Report

Generated by NIF on Apr 9, 2025

TREES toolbox

RRID:SCR_010457
Type: Tool

Proper Citation

TREES toolbox (RRID:SCR_010457)

Resource Information

URL: http://treestoolbox.org/

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Description: Software package, written in Matlab (Mathworks, Natick, MA), providing tools to automatically reconstruct neuronal branching from microscopy image stacks and to generate synthetic axonal and dendritic trees. It provides the basic tools to edit, visualize and analyze dendritic and axonal trees, methods for quantitatively comparing branching structures between neurons, and tools for exploring how dendritic and axonal branching depends on local optimization of total wiring and conduction distance.

Abbreviations: TREES toolbox

Synonyms: treestoolbox - A Matlab toolbox to generate edit visualize and analyze neuronal structure

Resource Type: software resource

Defining Citation: PMID:20700495

Keywords: neuronal branching, microscopy, neuron, matlab, visualization, rendering, reconstruction, analysis, modeling, morphology, dendrite, axon, computational neuroanatomy, tree

Funding: Max Planck Society ;
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Gatsby Charitable Foundation ;
Alexander von Humboldt-Stiftung ;
European Research Council

Availability: GNU General Public License v3, Creative Commons Attribution-NonCommercial-ShareAlike License v3, The community can contribute to this resource

Resource Name: TREES toolbox

Resource ID: SCR_010457

Alternate IDs: nlx_157723

Alternate URLs: http://www.nitrc.org/projects/treestoolbox

Record Creation Time: 20220129T080258+0000

Record Last Update: 20250214T183157+0000

Ratings and Alerts

No rating or validation information has been found for TREES toolbox.

No alerts have been found for TREES toolbox.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 26 mentions in open access literature.

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

Luo F, et al. (2024) Comparative physiology and morphology of BLA-projecting NBM/SI cholinergic neurons in mouse and macaque. Research square.

Groden M, et al. (2024) A biologically inspired repair mechanism for neuronal reconstructions with a focus on human dendrites. PLoS computational biology, 20(2), e1011267.

Luo F, et al. (2024) Comparative Physiology and Morphology of BLA-Projecting NBM/SI Cholinergic Neurons in Mouse and Macaque. The Journal of comparative neurology, 532(11), e70001.

Tecuatl C, et al. (2024) Accelerating the continuous community sharing of digital neuromorphology data. FASEB bioAdvances, 6(7), 207.

Schneider M, et al. (2023) Biological complexity facilitates tuning of the neuronal parameter space. PLoS computational biology, 19(7), e1011212.

Stürner T, et al. (2022) The branching code: A model of actin-driven dendrite arborization. Cell reports, 39(4), 110746.

Guo S, et al. (2022) Smart imaging to empower brain-wide neuroscience at single-cell levels. Brain informatics, 9(1), 10.

Rochon PL, et al. (2021) The cell adhesion molecule Sdk1 shapes assembly of a retinal circuit that detects localized edges. eLife, 10.

Hjorth JJJ, et al. (2021) Predicting Synaptic Connectivity for Large-Scale Microcircuit Simulations Using Snudda. Neuroinformatics, 19(4), 685.

, et al. (2021) 30th Annual Computational Neuroscience Meeting: CNS*2021-Meeting Abstracts. Journal of computational neuroscience, 49(Suppl 1), 3.

Baltruschat L, et al. (2021) Circuit reorganization in the Drosophila mushroom body calyx accompanies memory consolidation. Cell reports, 34(11), 108871.

Kirchner JH, et al. (2021) Emergence of local and global synaptic organization on cortical dendrites. Nature communications, 12(1), 4005.

Nanda S, et al. (2021) An imaging analysis protocol to trace, quantify, and model multi-signal neuron morphology. STAR protocols, 2(2), 100567.

Cuntz H, et al. (2021) A general principle of dendritic constancy: A neuron's size- and shape-invariant excitability. Neuron, 109(22), 3647.

Wu J, et al. (2021) Parallel Synaptic Acetylcholine Signals Facilitate Large Monopolar Cell Repolarization and Modulate Visual Behavior in Drosophila. The Journal of neuroscience : the official journal of the Society for Neuroscience, 41(10), 2164.

Ferreira Castro A, et al. (2020) Achieving functional neuronal dendrite structure through sequential stochastic growth and retraction. eLife, 9.

Palombo M, et al. (2019) A generative model of realistic brain cells with application to numerical simulation of the diffusion-weighted MR signal. NeuroImage, 188, 391.

Fernandez A, et al. (2019) Mitochondrial Dysfunction Leads to Cortical Under-Connectivity and Cognitive Impairment. Neuron, 102(6), 1127.

Bird AD, et al. (2019) Dissecting Sholl Analysis into Its Functional Components. Cell reports, 27(10), 3081.

Morrie RD, et al. (2018) A Dense Starburst Plexus Is Critical for Generating Direction Selectivity. Current biology : CB, 28(8), 1204.