

Resource Summary Report

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Computational Morphometry Toolkit

RRID:SCR_002234

Type: Tool

Proper Citation

Computational Morphometry Toolkit (RRID:SCR_002234)

Resource Information

URL: <http://neuro.debian.net/pkgs/cmtk.html>

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Description: A software toolkit for computational morphometry of biomedical images, CMTK comprises a set of command line tools and a back-end general-purpose library for processing and I/O. The command line tools primarily provide the following functionality: registration (affine and nonrigid; single and multi-channel; pairwise and groupwise), image correction (MR bias field estimation; interleaved image artifact correction; EPI unwarping), processing (filters; combination of segmentations via voting and STAPLE; shape-based averaging), statistics (t-tests; general linear model). CMTK is implemented in C++ with parallel processing using POSIX Threads (SMP), OpenMP (SMP), Grand Central Dispatch (SMP), and CUDA (GPU). Supported file formats include Analyze (r/w), NIFTI (r/w), Nrrd (r/w), DICOM (read), BioRad (read). Data exchange with other toolkits, such as ITK, FSL, AFNI, SPM, etc. is thus easily accomplished.

Abbreviations: CMTK

Synonyms: Computational Morphometry Toolkit (CMTK)

Resource Type: software application, software resource, software toolkit

Keywords: reusable library, analyze, anatomic, artifact removal, atlas application, c, c++, console (text based), cygwin, dicom, domain independent, format conversion, image display, image reconstruction, image-to-image, labeling, linear, linux, macos, microsoft, magnetic resonance, nifti-1, nrrd, posix/unix-like, principal component analysis, region of interest, registration, regression, resampling, segmentation, sh/bash, spatial transformation, statistical operation, sunos/solaris, two dimensional display, unix shell, visualization, warping, win32 (ms windows), windows, workflow

Availability: Free, Available for download, Freely available

Resource Name: Computational Morphometry Toolkit

Resource ID: SCR_002234

Alternate IDs: nlx_155536

Alternate URLs: <http://www.nitrc.org/projects/cmtk>, <https://sources.debian.org/src/cmtk/>

License: GNU General Public License

Record Creation Time: 20220129T080212+0000

Record Last Update: 20260829T183040+0000

Ratings and Alerts

No rating or validation information has been found for Computational Morphometry Toolkit.

No alerts have been found for Computational Morphometry Toolkit.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 38 mentions in open access literature.

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

Allen AM, et al. (2026) Differential neuronal survival defines a novel axis of sexual dimorphism in the Drosophila brain. *Cell genomics*, 101125.

Dogra D, et al. (2025) Modulation of NMDA receptor signaling and zinc chelation prevent seizure-like events in a zebrafish model of SLC13A5 epilepsy. *PLoS biology*, 23(4), e3002499.

Jones JM, et al. (2025) Ascending nociceptive pathways drive rapid escape and sustained avoidance in adult Drosophila. *bioRxiv : the preprint server for biology*.

Berg S, et al. (2025) Sexual dimorphism in the complete connectome of the Drosophila male central nervous system. *bioRxiv : the preprint server for biology*.

Allen AM, et al. (2025) A high-resolution atlas of the brain predicts lineage and birth order underlying neuronal identity. *Cell genomics*, 101103.

Yun M, et al. (2024) Male cuticular pheromones stimulate removal of the mating plug and promote re-mating through pC1 neurons in Drosophila females. *eLife*, 13.

Clements J, et al. (2024) NeuronBridge: an intuitive web application for neuronal morphology search across large data sets. *BMC bioinformatics*, 25(1), 114.

Palieri V, et al. (2024) The preoptic area and dorsal habenula jointly support homeostatic navigation in larval zebrafish. *Current biology : CB*, 34(3), 489.

Merchant A, et al. (2024) Caste-biased patterns of brain investment in the subterranean termite *Reticulitermes flavipes*. *iScience*, 27(6), 110052.

Wang X, et al. (2023) Excitatory nucleo-olivary pathway shapes cerebellar outputs for motor control. *Nature neuroscience*, 26(8), 1394.

Campbell PD, et al. (2023) Mitochondrial proteins encoded by the 22q11.2 neurodevelopmental locus regulate neural stem and progenitor cell proliferation. *Molecular psychiatry*, 28(9), 3769.

Coleman RT, et al. (2023) A modular circuit architecture coordinates the diversification of courtship strategies in *Drosophila*. *bioRxiv : the preprint server for biology*.

Feierstein CE, et al. (2023) Dimensionality reduction reveals separate translation and rotation populations in the zebrafish hindbrain. *Current biology : CB*, 33(18), 3911.

Li J, et al. (2022) Neuroanatomical basis of sexual dimorphism in the mosquito brain. *iScience*, 25(11), 105255.

Zarei M, et al. (2022) High activity and high functional connectivity are mutually exclusive in resting state zebrafish and human brains. *BMC biology*, 20(1), 84.

Engert S, et al. (2022) *Drosophila* gustatory projections are segregated by taste modality and connectivity. *eLife*, 11.

Kaiser A, et al. (2022) A three-dimensional atlas of the honeybee central complex, associated neuropils and peptidergic layers of the central body. *The Journal of comparative neurology*, 530(14), 2416.

Sterne GR, et al. (2021) Classification and genetic targeting of cell types in the primary taste and premotor center of the adult *Drosophila* brain. *eLife*, 10.

Devignes Q, et al. (2021) Posterior Cortical Cognitive Deficits Are Associated With Structural Brain Alterations in Mild Cognitive Impairment in Parkinson's Disease. *Frontiers in aging neuroscience*, 13, 668559.

McKellar CE, et al. (2020) Controlling motor neurons of every muscle for fly proboscis reaching. *eLife*, 9.