[BrainSuite](#)

RRID:SCR_006623
Type: Tool

Proper Citation

BrainSuite (RRID:SCR_006623)

Resource Information

URL: http://users.loni.ucla.edu/~shattuck/brainsuite/

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Description: Suite of image analysis tools designed to process magnetic resonance images (MRI) of the human head. BrainSuite provides an automatic sequence to extract genus-zero cortical surface mesh models from the MRI. It also provides a set of viewing tools for exploring image and surface data. The latest release includes graphical user interface and command line versions of the tools. BrainSuite was specifically designed to guide its users through the process of cortical surface extraction. NITRC has written the software to require minimal user interaction and with the goal of completing the entire process of extracting a topologically spherical cortical surface from a raw MR volume within several minutes on a modern workstation. The individual components of BrainSuite may also be used for soft tissue, skull and scalp segmentation and for surface analysis and visualization. BrainSuite was written in Microsoft Visual C using the Microsoft Foundation Classes for its graphical user interface and the OpenGL library for rendering. BrainSuite runs under the Windows 2000 and Windows XP Professional operating systems. BrainSuite features include: * Sophisticated visualization tools, such as MRI visualization in 3 orthogonal views (either separately or in 3D view), and overlayed surface visualization of cortex, skull, and scalp * Cortical surface extraction, using a multi-stage user friendly approach. * Tools including brain surface extraction, bias field correction, voxel classification, cerebellum removal, and surface generation * Topological correction of cortical surfaces, which uses a graph-based approach to remove topological defects (handles and holes) and ensure a tessellation with spherical topology * Parameterization of generated cortical surfaces, minimizing a harmonic energy functional in the p-norm * Skull and scalp surface extraction

Abbreviations: BrainSuite

Synonyms: Brain Suite

Resource Type: image analysis software, data processing software, software application, software resource, data visualization software

Defining Citation: PMID:12045000

Keywords: brain, magnetic resonance, image, analysis, human, topology, segmentation, visualization, cortex, cortical, mri, tissue classification, topological correction, rendering, edit, cortical surface

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Availability: BrainSuite Software License, v2

Resource Name: BrainSuite

Resource ID: SCR_006623

Alternate IDs: nif-0000-30214

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

Record Creation Time: 20220129T080237+0000

Record Last Update: 20250411T055126+0000

Ratings and Alerts

No rating or validation information has been found for BrainSuite.

No alerts have been found for BrainSuite.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 81 mentions in open access literature.

Listed below are recent publications. The full list is available at FDI Lab - SciCrunch.org.

Lu H, et al. (2024) Predictive values of pre-treatment brain age models to rTMS effects in

neurocognitive disorder with depression: Secondary analysis of a randomised sham-controlled clinical trial. Dialogues in clinical neuroscience, 26(1), 38.

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Akrami H, et al. (2024) Prediction of Post Traumatic Epilepsy Using MR-Based Imaging Markers. Human brain mapping, 45(17), e70075.

Lu H, et al. (2024) MRI-informed machine learning-driven brain age models for classifying mild cognitive impairment converters. Journal of central nervous system disease, 16, 11795735241266556.

Kim Y, et al. (2024) Mouse Brain Extractor: Brain segmentation of mouse MRI using global positional encoding and SwinUNETR. bioRxiv : the preprint server for biology.

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Kim Y, et al. (2023) BrainSuite BIDS App: Containerized Workflows for MRI Analysis. bioRxiv : the preprint server for biology.

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Smigielski L, et al. (2022) White matter microstructure and the clinical risk for psychosis: A diffusion tensor imaging study of individuals with basic symptoms and at ultra-high risk.

NeuroImage. Clinical, 35, 103067.

Kumazawa S, et al. (2022) Estimation of undistorted images in brain echo-planar images with distortions using the conjugate gradient method with anatomical regularization. Medical physics, 49(12), 7531.

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Rutherford S, et al. (2022) Automated Brain Masking of Fetal Functional MRI with Open Data. Neuroinformatics, 20(1), 173.

Michels L, et al. (2022) The impact of levamisole and alcohol on white matter microstructure in adult chronic cocaine users. Addiction biology, 27(3), e13149.

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