Resource Summary Report

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SurfRelax

RRID:SCR_002139
Type: Tool

Proper Citation

SurfRelax (RRID:SCR_002139)

Resource Information

URL: http://www.pc.rhul.ac.uk/staff/J.Larsson/software.html

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Description: Set of programs and Tk/Tcl scripts, with a GUI wrapper, for extracting the inner and outer cortical surfaces from a T1-weighted MR image of the human brain. It is based on the TFI C++ library and is written for a Unix-based environment (specifically 64-bit and 32-bit versions of Ubuntu). As a courtesy to Apple users a version for Apple/X11 is maintained but the OS X version will always lag the Linux version; also, because some of the third-party libraries SurfRelax relies on may not be supported in or compatible with future versions of OS X, there is no guarantee that the OS X version will be supported indefinitely. Although in principle SurfRelax could be run under Windows (using Cygwin), because of the difficulties of maintaining multiple platforms and the limited support libraries available under Cygwin, there will no longer be support for SurfRelax on this platform. The surfaces are guaranteed to be topologically equivalent to a sphere, thereby obviating the need for handle removal. SurfRelax requires no user intervention, although minor manual editing is recommended for optimal results (normally less than 10 minutes per hemisphere). SurfRelax has several properties that compare favorably with other software packages for surface reconstruction: * Free software - The binaries (written in C++ and Tcl/Tk) are in the public domain. The source code will be released once legacy code issues have been resolved (i.e. replacing with GPL code). * Uses standard public file formats: Analyze file format (SPM/FSL-compatible) for volumes and OOGL OFF binary format for surfaces (see www.geomview.org (http://www.geomview.org/docs/html/geomview_26.html#OOGLRef)) * Combines advantages of volumetric and surface-based methods for surface generation * Correct topology of output surface guaranteed * Requires little or no user intervention - no need for manual handle removal * Relatively robust to noise - multi-scale method compensates for partial volume effects and intensity inhomogeneities * Relatively fast (an entire brain is segmented, extracted and unfolded in less than 2 hours of CPU time) * Powerful editing and visualization tools for volumes and surfaces * Readily extendable - for instance for use with

monkey brains or children's brains * Can be used to visualize functional data from SPM or FSL * Includes tools for integration with Stanford's VISTASOFT tools for FMRI data analysis (white.stanford.edu)

Abbreviations: SurfRelax

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

Keywords: brain, mri, anatomical mri, cortical surface model, functional, segmentation, surface analysis, visualization, volume, surface reconstruction, child, adult, t1-weighted mr image

Funding:

Availability: Free - comes with NO SUPPORT and NO WARRANTIES. Please cite. The software is NOT intended for commercial use and may NOT be resold, Redistributed, Or incorporated, Whether in part or whole, In commercial software.

Resource Name: SurfRelax

Resource ID: SCR_002139

Alternate IDs: nif-0000-00347

Old URLs: http://www.cns.nyu.edu/~jonas/software.html

Record Creation Time: 20220129T080211+0000

Record Last Update: 20250430T055136+0000

Ratings and Alerts

No rating or validation information has been found for SurfRelax.

No alerts have been found for SurfRelax.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 6 mentions in open access literature.

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

Lennartsson F, et al. (2018) Injuries to the Immature Optic Radiation Show Correlated Thinning of the Macular Ganglion Cell Layer. Frontiers in neurology, 9, 321.

Connolly JD, et al. (2016) Coding of attention across the human intraparietal sulcus. Experimental brain research, 234(3), 917.

Connolly JD, et al. (2015) Gaze-dependent topography in human posterior parietal cortex. Cerebral cortex (New York, N.Y. : 1991), 25(6), 1519.

Ip IB, et al. (2014) Responses to interocular disparity correlation in the human cerebral cortex. Ophthalmic & physiological optics : the journal of the British College of Ophthalmic Opticians (Optometrists), 34(2), 186.

Olman CA, et al. (2012) Selective BOLD responses to individual finger movement measured with fMRI at 3T. Human brain mapping, 33(7), 1594.

Schumacher JF, et al. (2010) High-resolution BOLD fMRI measurements of local orientation-dependent contextual modulation show a mismatch between predicted V1 output and local BOLD response. Vision research, 50(13), 1214.