Resource Summary Report

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AutoSeg

RRID:SCR_009438
Type: Tool

Proper Citation

AutoSeg (RRID:SCR_009438)

Resource Information

URL: http://www.nitrc.org/projects/autoseg/

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Description: A novel C++ based application developped at UNC-Chapel Hill that performs automatic brain tissue classification and structural segmentation. AutoSeg is designed for use with human and non-human primate pediatric, adolescent and adult data. AutoSeg uses a BatchMake pipeline script that includes the main steps of the framework entailing N4 bias field correction, rigid registration to a common coordinate image, tissue segmentation, skull-stripping, intensity rescaling, atlas-based registration, subcortical segmentation and lobar parcellation, regional cortical thickness and intensity statistics. AutoSeg allows efficient batch processing and grid computing to process large datasets and provides quality control visualizations via Slicer3 MRML scenes.

Abbreviations: AutoSeg

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

Keywords: analyze, c++, expectation minimization, image-to-image, image-to-template, labeling, linux, macos, microsoft, magnetic resonance, nonlinear warp, nrrd, posix/unix-like, region of interest, registration, resampling, segmentation, spatial transformation, spline interpolation, volumetric analysis, warping, win32 (ms windows), windows, workflow, pediatric, adolescent, adult, young

Funding:

Availability: BSD License

Resource Name: AutoSeg

Resource ID: SCR_009438

Alternate IDs: nlx_155582

Record Creation Time: 20220129T080252+0000

Record Last Update: 20250509T055916+0000

Ratings and Alerts

No rating or validation information has been found for AutoSeg.

No alerts have been found for AutoSeg.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 21 mentions in open access literature.

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

Alex AM, et al. (2024) A global multicohort study to map subcortical brain development and cognition in infancy and early childhood. Nature neuroscience, 27(1), 176.

Burrows CA, et al. (2024) Associations between early trajectories of amygdala development and later school-age anxiety in two longitudinal samples. Developmental cognitive neuroscience, 65, 101333.

St John T, et al. (2023) Association of Sex With Neurobehavioral Markers of Executive Function in 2-Year-Olds at High and Low Likelihood of Autism. JAMA network open, 6(5), e2311543.

Kovacs-Balint ZA, et al. (2023) The role of puberty on physical and brain development: A longitudinal study in male Rhesus Macaques. Developmental cognitive neuroscience, 60, 101237.

Zhong T, et al. (2022) Longitudinal brain atlases of early developing cynomolgus macaques from birth to 48 months of age. NeuroImage, 247, 118799.

Kovacs-Balint ZA, et al. (2021) Structural development of cortical lobes during the first 6 months of life in infant macaques. Developmental cognitive neuroscience, 48, 100906.

Carlson AL, et al. (2021) Infant gut microbiome composition is associated with non-social fear behavior in a pilot study. Nature communications, 12(1), 3294.

Knickmeyer RC, et al. (2021) Impact of gonadectomy on maturational changes in brain volume in adolescent macaques. Psychoneuroendocrinology, 124, 105068.

Hwang M, et al. (2021) A Simple Method for Automatic 3D Reconstruction of Coronary Arteries From X-Ray Angiography. Frontiers in physiology, 12, 724216.

Wagner D, et al. (2020) Lexical-semantic search related to side of onset and putamen volume in Parkinson's disease. Brain and language, 209, 104841.

Koenig MR, et al. (2020) Quantitative definition of neurobehavior, vision, hearing and brain volumes in macaques congenitally exposed to Zika virus. PloS one, 15(10), e0235877.

Mostapha M, et al. (2020) A Novel Method for High-Dimensional Anatomical Mapping of Extra-Axial Cerebrospinal Fluid: Application to the Infant Brain. Frontiers in neuroscience, 14, 561556.

Wang EW, et al. (2019) Multimodal MRI evaluation of parkinsonian limbic pathologies. Neurobiology of aging, 76, 194.

Li Y, et al. (2019) Anomalies in uncinate fasciculus development and social defects in preschoolers with autism spectrum disorder. BMC psychiatry, 19(1), 399.

Hazlett HC, et al. (2017) Early brain development in infants at high risk for autism spectrum disorder. Nature, 542(7641), 348.

Visser E, et al. (2016) Automatic segmentation of the striatum and globus pallidus using MIST: Multimodal Image Segmentation Tool. NeuroImage, 125, 479.

Liu H, et al. (2016) Folded concave penalized learning in identifying multimodal MRI marker for Parkinson's disease. Journal of neuroscience methods, 268, 1.

Shi Y, et al. (2016) UNC-Emory Infant Atlases for Macaque Brain Image Analysis: Postnatal Brain Development through 12 Months. Frontiers in neuroscience, 10, 617.

Verde AR, et al. (2014) UNC-Utah NA-MIC framework for DTI fiber tract analysis. Frontiers in neuroinformatics, 7, 51.

Gerig G, et al. (2011) Synergy of image analysis for animal and human neuroimaging supports translational research on drug abuse. Frontiers in psychiatry, 2, 53.