Resource Summary Report

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STAPLE

RRID:SCR_002590
Type: Tool

Proper Citation

STAPLE (RRID:SCR_002590)

Resource Information

URL: http://www.crl.med.harvard.edu/software/STAPLE/index.php

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Description: An algorithm for the Simultaneous Truth and Performance Level Estimation, which estimates a reference standard and segmentation generator performance from a set of segmentations. It has been widely applied for the validation of image segmentation algorithms, and to compare the performance of different algorithms and experts. It has also found application in the identification of a consensus segmentation, by combination of the output of a group of segmentation algorithms, and for segmentation by registration and template fusion.

Abbreviations: STAPLE

Synonyms: Simultaneous Truth and Performance Level Estimation, STAPLE - Simultaneous Truth and Performance Level Estimation

Resource Type: software application, software resource

Defining Citation: PMID:15250643

Keywords: algorithm, analyze, c++, dicom, gifti, image display, linux, macos, microsoft, magnetic resonance, nifti, nrrd, posix/unix-like, quantification, rendering, segmentation, surface rendering, visualization, win32 (ms windows), windows, standard

Funding:

Availability: Open Software License, v3, Http://www.nitrc.org/include/glossary.php#552

Resource Name: STAPLE

Resource ID: SCR_002590

Alternate IDs: nlx_155994

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

Record Creation Time: 20220129T080214+0000

Record Last Update: 20250522T060034+0000

Ratings and Alerts

No rating or validation information has been found for STAPLE.

No alerts have been found for STAPLE.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 116 mentions in open access literature.

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

Zhang H, et al. (2025) TOM500: A Multi-Organ Annotated Orbital MRI Dataset for Thyroid Eye Disease. Scientific data, 12(1), 60.

McCullum L, et al. (2025) A Method for Sensitivity Analysis of Automatic Contouring Algorithms Across Different MRI Contrast Weightings Using SyntheticMR. medRxiv : the preprint server for health sciences.

Hyer DE, et al. (2024) A Technique to Enable Efficient Adaptive Radiation Therapy: Automated Contouring of Prostate and Adjacent Organs. Advances in radiation oncology, 9(1), 101336.

Grefve J, et al. (2024) Histopathology-validated gross tumor volume delineations of intraprostatic lesions using PSMA-positron emission tomography/multiparametric magnetic resonance imaging. Physics and imaging in radiation oncology, 31, 100633.

Jin Y, et al. (2024) Antibody selection and automated quantification of TRPV1 immunofluorescence on human skin. Scientific reports, 14(1), 28496.

Rasmussen ME, et al. (2024) Potential of E-Learning Interventions and Artificial Intelligence-Assisted Contouring Skills in Radiotherapy: The ELAISA Study. JCO global oncology, 10, e2400173.

Karimi D, et al. (2024) Detailed delineation of the fetal brain in diffusion MRI via multi-task learning. ArXiv.

Ratnayake G, et al. (2024) Utility of 68Ga-DOTATATE PET-MRI for Gamma Knife® stereotactic radiosurgery treatment planning for meningioma. The British journal of radiology, 97(1153), 180.

Karimi D, et al. (2024) Detailed delineation of the fetal brain in diffusion MRI via multi-task learning. bioRxiv : the preprint server for biology.

Gupta AC, et al. (2024) Fully automated deep learning based auto-contouring of liver segments and spleen on contrast-enhanced CT images. Scientific reports, 14(1), 4678.

Piccinini F, et al. (2024) Two-dimensional segmentation fusion tool: an extensible, free-to-use, user-friendly tool for combining different bidimensional segmentations. Frontiers in bioengineering and biotechnology, 12, 1339723.

Zeineldin RA, et al. (2024) Explainable hybrid vision transformers and convolutional network for multimodal glioma segmentation in brain MRI. Scientific reports, 14(1), 3713.

Wahid KA, et al. (2024) Associations Between Radiation Oncologist Demographic Factors and Segmentation Similarity Benchmarks: Insights From a Crowd-Sourced Challenge Using Bayesian Estimation. JCO clinical cancer informatics, 8, e2300174.

Secerov-Ermenc A, et al. (2024) Inter-observer variation in gross tumour volume delineation of oesophageal cancer on MR, CT and PET/CT. Radiology and oncology, 58(4), 580.

Bereska JI, et al. (2024) Development and external evaluation of a self-learning auto-segmentation model for Colorectal Cancer Liver Metastases Assessment (COALA). Insights into imaging, 15(1), 279.

Aldieri A, et al. (2024) Development and validation of a semi-automated and unsupervised method for femur segmentation from CT. Scientific reports, 14(1), 7403.

Guo N, et al. (2024) Posterior tibial slope influences joint mechanics and soft tissue loading after total knee arthroplasty. Frontiers in bioengineering and biotechnology, 12, 1352794.

Ong WL, et al. (2024) Urethra contouring on computed tomography urethrogram versus magnetic resonance imaging for stereotactic body radiotherapy in prostate cancer. Clinical and translational radiation oncology, 45, 100722.

Zarei M, et al. (2024) Accuracy of gross tumour volume delineation with [68Ga]-PSMA-PET compared to histopathology for high-risk prostate cancer. Acta oncologica (Stockholm, Sweden), 63, 503.

Li S, et al. (2024) FAST (fast analytical simulator of tracer)-PET: an accurate and efficient PET analytical simulation tool. Physics in medicine and biology, 69(16).