

REFERENCES

- Akbar, A. S., Faticah, C., & Suciati, N. (2022). Unet3D with multiple atrous convolutions attention block for brain tumor segmentation. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 182–193. https://doi.org/10.1007/978-3-031-08999-2_14
- Anbarjafari, G. (n.d.). *Introduction to image processing*. <https://sisu.ut.ee/imageprocessing/book/1>
- Ansori, A. N. A. (2021). *Jadi Penyebab kematian Tertinggi Kedua di Dunia, Kanker Masih Sering Tidak Disadari*. liputan6.com. <https://www.liputan6.com/health/read/4496893/jadi-penyebab-kematian-tertinggi-kedua-di-dunia-kanker-masih-sering-tidak-disadari>
- Aulia, S., & Rahmat, D. (2022). Brain tumor identification based on VGG-16 architecture and Clahe Method. *JOIV : International Journal on Informatics Visualization*, 6(1), 96. <https://doi.org/10.30630/joiv.6.1.864>
- Baid, U., Ghodasara, S., Mohan, S., Bilello, M., Calabrese, E., Colak, E., Farahani, K., Kalpathy-Cramer, J., Kitamura, F. C., Pati, S., Prevedello, L. M., Rudie, J. D., Sako, C., Shinohara, R. T., Bergquist, T., Chai, R., Eddy, J., Elliott, J., Reade, W., ... Bakas, S. (2021). The RSNA-ASNR-MICCAI brats 2021 benchmark on brain tumor segmentation and Radiogenomic Classification. *Arxiv*. <https://doi.org/10.48550/arXiv.2107.02314>
- Bakas, S., Akbari, H., Sotiras, A., Bilello, M., Rozycki, M., Kirby, J. S., Freymann, J. B., Farahani, K., & Davatzikos, C. (2017). Advancing the cancer genome Atlas Glioma MRI collections with expert segmentation labels and Radiomic features. *Scientific Data*, 4(1). <https://doi.org/10.1038/sdata.2017.117>
- Bakas S, Akbari H, Sotiras A, Bilello M, Rozycki M, Kirby J, Freymann J, Farahani K, Davatzikos C. (2017). Segmentation Labels for the Pre-operative Scans of the TCGA-GBM collection [Data set]. *The Cancer Imaging Archive*.

<https://doi.org/10.7937/K9/TCIA.2017.KLXWJJ1Q>

Bakas S, Akbari H, Sotiras A, Bilello M, Rozycki M, Kirby J, Freymann J, Farahani K, Davatzikos C. (2017) Segmentation Labels and Radiomic Features for the Pre-operative Scans of the TCGA-LGG collection [Data Set]. *The Cancer Imaging Archive*. <https://doi.org/10.7937/K9/TCIA.2017.GJQ7R0EF>

Bauer, S., Fejes, T., & Reyes, M. (2013). A skull-stripping filter for ITK. *The Insight Journal*. <https://doi.org/10.54294/dp4mfp>

Bradley, W. G., & Stark, D. D. (1988). *Magnetic Resonance Imaging*. Mosby.

Bull, D. R., & Zhang, F. (2021). Digital picture formats and representations. *Intelligent Image and Video Compression*, 107–142. <https://doi.org/10.1016/b978-0-12-820353-8.00013-x>

Campos, G. F., Mastelini, S. M., Aguiar, G. J., Mantovani, R. G., Melo, L. F., & Barbon, S. (2019). Machine learning hyperparameter selection for contrast limited adaptive histogram equalization. *EURASIP Journal on Image and Video Processing*, 2019(1). <https://doi.org/10.1186/s13640-019-0445-4>

Carré, A., Klausner, G., Edjlali, M., Lerousseau, M., Briend-Diop, J., Sun, R., Ammari, S., Reuzé, S., Alvarez Andres, E., Estienne, T., Niyoteka, S., Battistella, E., Vakalopoulou, M., Dhermain, F., Paragios, N., Deutsch, E., Oppenheim, C., Pallud, J., & Robert, C. (2020). Standardization of brain MR images across machines and protocols: Bridging the gap for MRI-based radiomics. *Scientific Reports*, 10(1). <https://doi.org/10.1038/s41598-020-69298-z>

CBICA. (2021). *MICCAI brats - the multimodal brain tumor segmentation challenge*. <http://braintumorsegmentation.org/>

Chen, W., Zhang, Y., He, J., Qiao, Y., Chen, Y., Shi, H., & Tang, X. (2018). W-net: Bridged U-net for 2D Medical Image Segmentation. *ArXiv*. abs/1807.04459

Chhikara, P. (2022). *Understanding morphological image processing and its operations*. [https://towardsdatascience.com/understanding-morphological-](https://towardsdatascience.com/understanding-morphological-image-processing-) image-processing-

and-its-operations-7bcf1ed11756

Cicilia, M. (2022). *Terlambat deteksi, Kanker Jadi Penyakit Dengan Kematian tertinggi.*

Antara News. <https://www.antaraneews.com/berita/2684549/terlambat-deteksi-kanker-jadi-penyakit-dengan-kematian-tertinggi>

Cleveland Clinic. (2022). *Brain tumor: Symptoms, signs & causes.*

<https://my.clevelandclinic.org/health/diseases/6149-brain-cancer-brain-tumor>

Dai, Z., Wen, N., & Carver, E. (2022). Brain tumor segmentation using non-local mask

R-CNN and single model ensemble. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 239–248. https://doi.org/10.1007/978-3-031-08999-2_19

Dash, B. (2021). *Introduction to skull stripping (Image segmentation on 3D MRI images).*

<https://www.analyticsvidhya.com/blog/2021/06/introduction-to-skull-stripping-image-segmentation-on-3d-mri-images/>

Demir, F. (2022). Deep autoencoder-based automated brain tumor detection from MRI

data. *Artificial Intelligence-Based Brain-Computer Interface*, 317–351. <https://doi.org/10.1016/b978-0-323-91197-9.00013-8>

Demoustier, M., Khemir, I., Nguyen, Q. D., Martin-Gaffé, L., & Boutry, N. (2022).

Residual 3D U-Net with localization for brain tumor segmentation. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 389–399. https://doi.org/10.1007/978-3-031-08999-2_33

Dice, L. R. (1945). Measures of the amount of ecologic association between species.

Ecology, 26(3), 297–302. <https://doi.org/10.2307/1932409>

Druzhinina, P., Kondrateva, E., Bozhenko, A., Yarkin, V., Sharaev, M., & Kurmukov, A.

(2022). Brats2021: Exploring each sequence in multi-modal input for baseline U-net performance. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 194–203. https://doi.org/10.1007/978-3-031-08999-2_15

Fadli, R. (2022). *Glioblastoma - gejala, Penyebab, Dan Pengobatan.* halodoc.

<https://www.halodoc.com/kesehatan/glioblastoma>

Fadli, R. (2021). *Hal Yang terjadi Jika Seseorang Terkena Kanker Otak*. halodoc.

<https://www.halodoc.com/artikel/hal-yang-terjadi-jika-seorang-terkena-kanker-otak>

Feng, X., Tustison, N. J., Patel, S. H., & Meyer, C. H. (2020). Brain tumor segmentation using an ensemble of 3D U-Nets and overall survival prediction using radiomic features. *Frontiers in Computational Neuroscience*, 14.

<https://doi.org/10.3389/fncom.2020.00025>

Ford, J., Dogan, N., Young, L., & Yang, F. (2018). Quantitative radiomics: Impact of pulse sequence parameter selection on MRI-based textural features of the brain.

Contrast Media & Molecular Imaging, 2018, 1–9.

<https://doi.org/10.1155/2018/1729071>

Futrega, M., Milesi, A., Marcinkiewicz, M., & Ribalta, P. (2022). Optimized U-net for brain tumor segmentation. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 15–29.

https://doi.org/10.1007/978-3-031-09002-8_2

Gibson, R. M., Ahmadinia, A., McMeekin, S. G., Strang, N. C., & Morison, G. (2013). A reconfigurable real-time morphological system for augmented vision. *EURASIP Journal on Advances in Signal Processing*, 2013(1).

<https://doi.org/10.1186/1687-6180-2013-134>

Gillies, R. J., Kinahan, P. E., & Hricak, H. (2016). Radiomics: Images are more than pictures, they are data. *Radiology*, 278(2), 563–577.

<https://doi.org/10.1148/radiol.2015151169>

Gonzalez, R. C., & Woods, R. E. (2008). *Digital Image Processing 3rd ed.* Parson.

Gormez, O., & Yilmaz, H. H. (2009). Image post-processing in dental practice. *European Journal of Dentistry*, 03(04), 343–347.

<https://doi.org/10.1055/s-0039-1697455>

Hao, X., Xu, D., Bansal, R., Dong, Z., Liu, J., Wang, Z., Kangarlu, A., Liu, F., Duan, Y., Shova, S., Gerber, A. J., & Peterson, B. S. (2011). Multimodal Magnetic Resonance Imaging: The coordinated use of multiple, mutually informative probes to

- understand brain structure and function. *Human Brain Mapping*, 34(2), 253–271. <https://doi.org/10.1002/hbm.21440>
- Haralick, R. M., Sternberg, S. R., & Zhuang, X. (1987). Image analysis using mathematical morphology. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, PAMI-9(4), 532–550. <https://doi.org/10.1109/tpami.1987.4767941>
- Hasan, A., Meziane, F., Aspin, R., & Jalab, H. (2016). Segmentation of brain tumors in MRI images using three-dimensional active contour without edge. *Symmetry*, 8(11), 132. <https://doi.org/10.3390/sym8110132>
- Hashemi, M. (2019). Enlarging smaller images before inputting into convolutional neural network: Zero-padding vs. interpolation. *Journal of Big Data*, 6(1). <https://doi.org/10.1186/s40537-019-0263-7>
- Hasibuan, L. (2022). *Belum Ada Obatnya, INI 10 kanker paling ganas dan mematikan. CNBC Indonesia*. <https://www.cnbcindonesia.com/lifestyle/20220913171824-33-371794/belum-ada-obatnya-ini-10-kanker-paling-ganas-mematikan>
- Hatamizadeh, A., Nath, V., Tang, Y., Yang, D., Roth, H. R., & Xu, D. (2022). Swin UNETR: Swin transformers for semantic segmentation of brain tumors in MRI images. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 272–284. https://doi.org/10.1007/978-3-031-08999-2_22
- Huttenlocher, D. P., Rucklidge, W. J., & Klanderman, G. A. (1992). Comparing images using the Hausdorff distance under translation. *IEEE Computer Society Conference on Computer Vision and Pattern Recognition*. <https://doi.org/10.1109/cvpr.1992.223209>
- Isensee, F., Jäger, P. F., Full, P. M., Vollmuth, P., & Maier-Hein, K. H. (2021). NNU-Net for brain tumor segmentation. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 118–132. https://doi.org/10.1007/978-3-030-72087-2_11
- Jabareen, N., & Lukassen, S. (2022). Segmenting brain tumors in multi-modal MRI scans using a 3D segnet architecture. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and*

Traumatic Brain Injuries, 377–388. https://doi.org/10.1007/978-3-031-08999-2_32

Jesorsky, O., Kirchberg, K. J., & Frischholz, R. W. (2001). Robust face detection using the Hausdorff distance. *Lecture Notes in Computer Science*, 90–95. https://doi.org/10.1007/3-540-45344-x_14

Johns Hopkins Medicine. (2021). *Magnetic Resonance Imaging (MRI) of the spine and brain*. <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/magnetic-resonance-imaging-mri-of-the-spine-and-brain>

Johns Hopkins Medicine. (2021). *Magnetic Resonance Imaging (MRI)*. <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/magnetic-resonance-imaging-mri>

Johns Hopkins Medicine. (n.d.). *Brain Tumors and Brain Cancer*. <https://www.hopkinsmedicine.org/health/conditions-and-diseases/brain-tumor>

Kalavathi, P., & Prasath, V. B. (2015). Methods on skull stripping of MRI head scan images—A Review. *Journal of Digital Imaging*, 29(3), 365–379. <https://doi.org/10.1007/s10278-015-9847-8>

Karimi, D., & Salcudean, S. E. (2020). Reducing the Hausdorff distance in medical image segmentation with Convolutional Neural Networks. *IEEE Transactions on Medical Imaging*, 39(2), 499–513. <https://doi.org/10.1109/tmi.2019.2930068>

Kaur, H., & Rani, J. (2016). MRI brain image enhancement using histogram equalization techniques. *2016 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET)*. <https://doi.org/10.1109/wispnet.2016.7566237>

Kavitha, P., & Prabakaran, S. (2019). Brain tumor analysis in BASF Framework. *International Journal of Innovative Technology and Exploring Engineering*, 8(9S3), 485–488. <https://doi.org/10.35940/ijitee.i3092.0789s319>

Krig, S. (2016). Image pre-processing. *Computer Vision Metrics*, 35–74. https://doi.org/10.1007/978-3-319-33762-3_2

- Kwon, H. J., Lee, G. P., Kim, Y. J., & Kim, K. G. (2021). Comparison of pre-processed brain tumor MR images using deep learning detection algorithms. *Journal of Multimedia Information System*, 8(2), 79–84. <https://doi.org/10.33851/jmis.2021.8.2.79>
- Lee, Sumin & Kim, Hojin & Ji, Yunseo & Cho, Byungchul & Kim, Su & Jung, Jinhong & Park, Jin-hong & Lee, Sangwook & Kim, Jong-Hoon & Yoon, Sang. (2018). Evaluation of Hepatic Toxicity after Repeated Stereotactic Body Radiation Therapy for Recurrent Hepatocellular Carcinoma using Deformable Image Registration. *Scientific Reports*. 8. 10.1038/s41598-018-34676-1.
- Leung, K. K., Clarkson, M. J., Bartlett, J. W., Clegg, S., Jack, C. R., Weiner, M. W., Fox, N. C., & Ourselin, S. (2010). Robust atrophy rate measurement in alzheimer's disease using multi-site serial MRI: Tissue-specific intensity normalization and parameter selection. *NeuroImage*, 50(2), 516–523. <https://doi.org/10.1016/j.neuroimage.2009.12.059>
- Li, X. T., & Huang, R. Y. (2020). Standardization of Imaging Methods for machine learning in neuro-oncology. *Neuro-Oncology Advances*, 2(Supplement_4), iv49–iv55. <https://doi.org/10.1093/noajnl/vdaa054>
- Li, Z., Shen, Z., Wen, J., He, T., & Pan, L. (2022). Automatic brain tumor segmentation using multi-scale features and attention mechanisms. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 216–226. https://doi.org/10.1007/978-3-031-08999-2_17
- Liu, G., Shih, K. J., Wang, T. C., Reda, F. A., Sapra, K., Yu, Z., Tao, A., & Catanzaro, B. (2018). Partial Convolution based Padding. *Arxiv*. <https://doi.org/10.48550/arXiv.1811.11718>
- Luu, H. M., & Park, S.-H. (2022). Extending NN-unet for brain tumor segmentation. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 173–186. https://doi.org/10.1007/978-3-031-09002-8_16
- M., H. H. J. A. (1994). *Morphological image operators*. Academic Press.

- Magadza, T., & Viriri, S. (2021). Deep Learning for Brain Tumor Segmentation: A survey of state-of-the-art. *Journal of Imaging*, 7(2), 19. <https://doi.org/10.3390/jimaging7020019>
- Manjón, J. V. (2016). MRI preprocessing. *Imaging Biomarkers*, 53–63. https://doi.org/10.1007/978-3-319-43504-6_5
- Mano, A., & Anand, S. (2020). Method of multi-region tumour segmentation in Brain MRI images using grid-based segmentation and weighted bee swarm optimisation. *IET Image Processing*, 14(12), 2901–2910. <https://doi.org/10.1049/iet-ipr.2019.1234>
- Marimuthu, P. (2022). *Image contrast enhancement using clahe*. Analytics Vidhya. <https://www.analyticsvidhya.com/blog/2022/08/image-contrast-enhancement-using-clahe/>
- Mathworks. (n.d.). *Image enhancement*. <https://www.mathworks.com/discovery/image-enhancement.html>
- Mathworks. (n.d.). *Contrast Limited Adaptive Histogram Equalization*. <https://www.mathworks.com/help/visionhdl/ug/contrast-adaptive-histogram-equalization.html>
- Mathworks. (n.d.). *Image segmentation*. <https://www.mathworks.com/discovery/image-segmentation.html#:~:text=Image%20segmentation%20is%20a%20commonly,the%20pixels%20in%20the%20image>
- Matondang, Z. A. (2018). Penerapan Metode Contrast Limited Adaptive Histogram Equalization (Clahe) Pada Citra Digital Untuk Memperbaiki Gambar X-ray. *Publikasi Ilmiah Teknologi Informasi Neumann*, 3(2), 24–29. <https://media.neliti.com/media/publications/283772-penerapan-metode-contrast-limited-adapti-6f89ed8c.pdf>
- Mayoclinic. (2023). *Glioma*. Mayo Clinic. <https://www.mayoclinic.org/diseases-conditions/glioblastoma/cdc-20350148>
- Menze, B. H., Jakab, A., Bauer, S., Kalpathy-Cramer, J., Farahani, K., Kirby, J., Burren,

- Y., Porz, N., Slotboom, J., Wiest, R., Lanczi, L., Gerstner, E., Weber, M.-A., Arbel, T., Avants, B. B., Ayache, N., Buendia, P., Collins, D. L., Cordier, N., ... Van Leemput, K. (2015). The Multimodal Brain Tumor Image Segmentation Benchmark (brats). *IEEE Transactions on Medical Imaging*, 34(10), 1993–2024. <https://doi.org/10.1109/tmi.2014.2377694>
- Munir, R. (n.d.). *Segmentasi Citra*. IF4073 Interpretasi dan Pengolahan Citra. <https://informatika.stei.itb.ac.id/~rinaldi.munir/Citra/2019-2020/17-Segmentasi-Citra.pdf>.
- Nasim, M. D., Munem, A. A., Islam, M., Palash, M. A. H., Haque, M. D., and Shah, F. M.. (2022). *Brain tumor segmentation using enhanced U-Net model with empirical analysis*. DeepAI. <https://deepai.org/publication/brain-tumor-segmentation-using-enhanced-u-net-model-with-empirical-analysis>
- Nitasha, Sharma, S., & Sharma, R. (2012). Comparison Between Circular Hough Transform And Modified Canny Edge Detection Algorithm For Circle Detection. *International Journal of Engineering Research & Technology (IJERT)*, 1(3). <https://www.ijert.org/research/comparison-between-circular-hough-transform-and-modified-canny-edge-detection-algorithm-for-circle-detection-IJERTV1IIS3248.pdf>
- Notosiswoyo, M., & Suswanti, S. (2004). Pemanfaatan Magnetic Resonance Imaging (MRI) Sebagai Sarana Diagnosa Pasien. *Media Litbang Kesehatan*, 14. <http://repository.bkpk.kemkes.go.id/1125/1/901-986-1-PB.pdf>
- Our World in Data. (2019). *Number of deaths by cause*. <https://ourworldindata.org/grapher/annual-number-of-deaths-by-cause>
- Ozdemir, S. (2016). *Principles of data science learn the techniques and math you need to start making sense of your data*. Packt.
- Peiris, H., Chen, Z., Egan, G., & Harandi, M. (2022). Reciprocal adversarial learning for brain tumor segmentation: A solution to brats challenge 2021 segmentation task. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 171–181. https://doi.org/10.1007/978-3-031-08999-2_13

- Pinto, A., & Brunese, L. (2010). Spectrum of diagnostic errors in Radiology. *World Journal of Radiology*, 2(10), 377. <https://doi.org/10.4329/wjr.v2.i10.377>
- Priestly Shan, B., Jeba Shiney, O., Saleem, S., Rajinikanth, V., Zaguia, A., & Singh, D. (2022). A post-processing algorithm for boosting contrast of MRI images. *Computers, Materials & Continua*, 72(2), 2749–2763. <https://doi.org/10.32604/cmc.2022.023057>
- Priya, & Nawaz, K. (2017). Effective Morphological Image Processing Techniques and Image Reconstruction. *Special Issue Published in International Journal of Trend in Research and Development (IJTRD)*. <https://doi.org/http://www.ijtrd.com/papers/IJTRD8373.pdf>
- Putra, D. (2010). *Pengolahan Citra Digital*. Andi.
- Rahman Siddiquee, M. M., & Myronenko, A. (2022). Redundancy reduction in semantic segmentation of 3D brain tumor mris. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 163–172. https://doi.org/10.1007/978-3-031-09002-8_15
- Ranjbarzadeh, R., Bagherian Kasgari, A., Jafarzadeh Ghouschi, S., Anari, S., Naseri, M., & Bendeche, M. (2021). *Brain tumor segmentation based on deep learning and an attention mechanism using MRI multi-modalities brain images*. Nature News. <https://www.nature.com/articles/s41598-021-90428-8>
- Refaeilzadeh, P., Tang, L., & Liu, H. (2009). Cross-validation. *Encyclopedia of Database Systems*, 532–538. https://doi.org/10.1007/978-0-387-39940-9_565
- Rehman, M. U., Cho, S. B., Kim, J., & Chong, K. T. (2021). BRAINSEG-Net: Brain tumor mr image segmentation via enhanced encoder–decoder network. *Diagnostics*, 11(2), 169. <https://doi.org/10.3390/diagnostics11020169>
- Richardson, R. G., (n.d.). *Medicine in the 20th Century*. <https://www.britannica.com/science/history-of-medicine/Medicine-in-the-20th-century>

- Ronneberger, O., Fischer, P., & Brox, T. (2015). U-Net: Convolutional Networks for Biomedical Image Segmentation. *Lecture Notes in Computer Science*, 234–241. https://doi.org/10.1007/978-3-319-24574-4_28
- Rosebrock, A. (2021). *OpenCV connected component labeling and analysis*. PyImageSearch. <https://pyimagesearch.com/2021/02/22/opencv-connected-component-labeling-and-analysis/>
- Salvi, M., Acharya, U. R., Molinari, F., & Meiburger, K. M. (2021). The impact of pre- and post-image processing techniques on Deep learning frameworks: A comprehensive review for digital pathology image analysis. *Computers in Biology and Medicine*, 128, 104129. <https://doi.org/10.1016/j.compbiomed.2020.104129>
- ScienceDirect Topics. (n.d.). *Image Normalization - an overview*. <https://www.sciencedirect.com/topics/engineering/image-normalization>
- Shorten, C., & Khoshgoftaar, T. M. (2019). A survey on image data augmentation for Deep Learning. *Journal of Big Data*, 6(1). <https://doi.org/10.1186/s40537-019-0197-0>
- Simmons, A., Tofts, P. S., Barker, G. J., & Arridge, S. R. (1994). Sources of intensity nonuniformity in spin echo images at 1.5 T. *Magnetic Resonance in Medicine*, 32(1), 121–128. <https://doi.org/10.1002/mrm.1910320117>
- Sonka, M., Hlavac, V., & Boyle, R. (1993). Image pre-processing. *Image Processing, Analysis and Machine Vision*, 56–111. https://doi.org/10.1007/978-1-4899-3216-7_4
- Sreedhar, K. & Panlal, B.(2012). Enhancement of images using morphological transformations. *International Journal of Computer Science and Information Technology*, 4(1), 33–50. <https://doi.org/10.5121/ijcsit.2012.4103>
- Stimper, V., Bauer, S., Ernstorfer, R., Scholkopf, B., & Xian, R. P. (2019). Multidimensional contrast limited adaptive histogram equalization. *IEEE Access*, 7, 165437–165447. <https://doi.org/10.1109/access.2019.2952899>
- StructSeg. (2019). *Grand Challenge*. <https://structseg2019.grand->

challenge.org/Evaluation/

Sun, Y. (2018). *Evaluation Methods of Accuracy and Reproducibility for Image Segmentation Algorithms*. University of Saskatchewan.

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020: Globocan estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*, 71(3), 209–249. <https://doi.org/10.3322/caac.21660>

Swiebocka-Wiek, J. (2016). Skull stripping for MRI images using morphological operators. *Computer Information Systems and Industrial Management*, 172–182. https://doi.org/10.1007/978-3-319-45378-1_16

Syarief, I. S. (2021). *19,3 Juta Orang di dunia menderit kanker, Paling Banyak Kanker Payudara*. Suara Surabaya. <https://www.suarasurabaya.net/kelanakota/2021/193-juta-orang-di-dunia-menderit-kanker-paling-banyak-kanker-payudara>

Tcheslavski, G. V. (2010). Morphological Image Processing: Grayscale morphology. *ELEN 4304/5365 DIP*.

Team, N. F. I. (2023). *Digital Imaging - Everything You Need To Know*. NFI. <https://www.nfi.edu/digital-imaging/>

Thapar, S., & Garg, S. (2012). *Study and implementation of various morphology based image contrast enhancement techniques*.

Theano. (n.d.). *Convolution arithmetic tutorial*. https://theanopymc.readthedocs.io/en/latest/tutorial/conv_arithmetic.html

Tonarelli, L. (2011). *Magnetic Resonance Imaging of Brain Tumor*.

Ullah, Z., Lee, S.-H., & An, D. (2020). Histogram equalization based enhancement and MR brain image skull stripping using mathematical morphology. *International Journal of Advanced Computer Science and Applications*, 11(3). <https://doi.org/10.14569/ijacsa.2020.0110372>

- Um, H., Tixier, F., Bermudez, D., Deasy, J. O., Young, R. J., & Veeraraghavan, H. (2019). Impact of image preprocessing on the scanner dependence of multi-parametric MRI radiomic features and covariate shift in multi-institutional glioblastoma datasets. *Physics in Medicine & Biology*, *64*(16), 165011. <https://doi.org/10.1088/1361-6560/ab2f44>
- Vincent, L. (1994). Morphological area openings and closings for grey-scale images. *Shape in Picture*, 197–208. https://doi.org/10.1007/978-3-662-03039-4_13
- Wahid, K. A., He, R., McDonald, B. A., Anderson, B. M., Salzillo, T., Mulder, S., Wang, J., Sharafi, C. S., McCoy, L. A., Naser, M. A., Ahmed, S., Sanders, K. L., Mohamed, A. S. R., Ding, Y., Wang, J., Hutcheson, K., Lai, S. Y., Fuller, C. D., & van Dijk, L. V. (2021). Intensity standardization methods in magnetic resonance imaging of head and Neck Cancer. *Physics and Imaging in Radiation Oncology*, *20*, 88–93. <https://doi.org/10.1016/j.phro.2021.11.001>
- Walsh, J., Othmani, A., Jain, M., & Dev, S. (2022). Using U-Net Network for efficient brain tumor segmentation in MRI images. *Healthcare Analytics*, *2*, 100098. <https://doi.org/10.1016/j.health.2022.100098>
- Wang, G., Li, W., Zuluaga, M. A., Pratt, R., Patel, P. A., Aertsen, M., Doel, T., David, A. L., Deprest, J., Ourselin, S., & Vercauteren, T. (2018). Interactive medical image segmentation using deep learning with image-specific fine tuning. *IEEE Transactions on Medical Imaging*, *37*(7), 1562–1573. <https://doi.org/10.1109/tmi.2018.2791721>
- Wang, G., Zuluaga, M. A., Li, W., Pratt, R., Patel, P. A., Aertsen, M., Doel, T., David, A. L., Deprest, J., Ourselin, S., & Vercauteren, T. (2019). DeepIGeoS: A Deep Interactive Geodesic Framework for medical image segmentation. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *41*(7), 1559–1572. <https://doi.org/10.1109/tpami.2018.2840695>
- White, S. C., & Pharoah, M. J. (2014). *Oral Radiology: Principles and interpretation*. Elsevier.

- Widyantara, I. M., Asana, I. M., Wirastuti, N. M. A. E. D., & Adnyana, I. B. (2016). Image enhancement using morphological contrast enhancement for video based image analysis. *2016 International Conference on Data and Software Engineering (ICoDSE)*. <https://doi.org/10.1109/icodse.2016.7936115>
- Wu, H.-Y., & Lin, Y.-L. (2022). HarDNet-BTS: A Harmonic Shortcut Network for brain tumor segmentation. *Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries*, 261–271. https://doi.org/10.1007/978-3-031-08999-2_21
- Zeiler, M. D., & Fergus, R. (2014). Visualizing and understanding Convolutional Networks. *Computer Vision – ECCV 2014*, 818–833. https://doi.org/10.1007/978-3-319-10590-1_53
- Zhao, A., Balakrishnan, G., Durand, F., Guttag, J. V., & Dalca, A. V. (2019). Data augmentation using learned transformations for one-shot medical image segmentation. *2019 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. <https://doi.org/10.1109/cvpr.2019.00874>
- Zhuang, A. H., Valentino, D. J., & Toga, A. W. (2006). Skull-stripping magnetic resonance brain images using a model-based level set. *NeuroImage*, 32(1), 79–92. <https://doi.org/10.1016/j.neuroimage.2006.03.019>
- Zou, K. H., Warfield, S. K., Bharatha, A., Tempany, C. M. C., Kaus, M. R., Haker, S. J., Wells, W. M., Jolesz, F. A., & Kikinis, R. (2004). Statistical validation of image segmentation quality based on a spatial overlap index1. *Academic Radiology*, 11(2), 178–189. [https://doi.org/10.1016/s1076-6332\(03\)00671-8](https://doi.org/10.1016/s1076-6332(03)00671-8)