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INTEGRATED IMAGE PROCESSING ALGORITHM FOR BRAIN TUMOR DETECTION, SEGMENTATION AND CLASSIFICATION

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Abstract

Automation plays a vital role in wide areas now a day. In medicine disease identification itself involves number of complex methods. Here we developed a unique method to identify a brain tumor and its effects. In current days countless energy has spent in the field of medical imaging was dedicated on brain tumor segmentation. The auto segmentation has a huge positive in medical diagnosis by releasing physicians from the load of physical marking. Despite the undisputed worth of auto tumor segmentation this scheme is not so far a global clinical practice. Here we have given two methods for brain tumor detection, segmentation and classification. The prior one is based on masked marker controlled water shed segmentation, while the successor is based on Split-Up Box boundary technique.

Author Keywords

MRI, Automated process, Digital Image Processing, Brain tumor

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Detection, segmentation, classification, Intensity representation, Image Resizing.

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Reference

References (14)

1. T. Wang, I. Cheng, and A. Basu
   Fluid vector flow and applications in brain tumor segmentation

(2009) IEEE Transactions on Biomedical Engineering, Volume 56, Issue 3, Page No 781 - 789,
DOI: https://doi.org/10.1109/TBME.2009.2012423
Article Link: https://ieeexplore.ieee.org/document/4760239

2. S. Bauer, T. Fejes, J. Slotboom, R. Weist, L. P. Nolte, and M. Reyes
   Segmentation of brain tumor images based on integrated hierarchical classification and regularization

   (2012)
   Article Link: https://www2.imm.dtu.dk/projects/BRATS2012/BauerBRATS2012.pdf

3. E. Geremia, B. H. Menze, and N. Ayache
   Spatial decision forest for glioma segmentation in multi-channel MR images

   (2012)
   Article Link: https://hal.inria.fr/hal-00813827

4. A. Hamamci and G. Unal
   Multimodal brain tumor segmentation using the tumor-cut method on the BraTS dataset

   (2012)
   Article Link: http://www.imm.dtu.dk/projects/BRATS2012/HamamciBRATS2012.pdf

5. T. R. Raviv, K. V. Leemput, and B. H. Menze
   Multi-modal Brain Tumor Segmentation via Latent Atlases

   (2012)
   Article Link: http://people.csail.mit.edu/menze/papers/riklinraviv_12_brats.pdf

6. Ana-Maria Cretu and Pierre Payeur
   Building Detection in Aerial Images Based on Watershed and Visual Attention Feature Descriptors

   (2013) 2013 International Conference on Computer and Robot Vision,
   DOI: https://doi.org/10.1109/CRV.2013.8
   Article Link: https://ieeexplore.ieee.org/document/6569212

7. Pratik P. Singhai, Siddharth A. Ladhake
   Brain Tumor Detection Using Marker Based Watershed Segmentation from Digital MR Images

   (2013) International Journal of Innovative Technology and Exploring Engineering, Volume 2, Issue 5,
   Article Link: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.674.8053&rep=rep1&type=pdf

8. I. Njeh, I. B. Ayed, and A. B. Hamida
   A distribution-matching approach to MRI brain tumor segmentation

   (2012)
   DOI: https://doi.org/10.1109/ISBI.2012.6235908
   Article Link: https://ieeexplore.ieee.org/document/6235908

9. Shweta Jain, Shubha Mishra
   Automated Brain Tumor Detection and Identification Using Image Processing and Probabilistic Neural Network Techniques

   (2012) International Journal of Image Processing and Visual Communication, Volume 1, Issue 2,
   Article Link: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.674.6216&rep=rep1&type=pdf

10. Vidhya S. Dessa, Megha P. Arakerm Ram Mohana Reddy Guddeti
    A Parallel Segmentation of Brain Tumor from Magnetic Resonance Images

(2012) 2012 Third International Conference on Computing, Communication and Networking Technologies,
DOI: https://doi.org/10.1109/ICCCNT.2012.6395880
Article Link: https://ieeexplore.ieee.org/abstract/document/6395880

11. Maoguo Gong; Yan Liang; Jiao Shi; Wenping Ma; Jingjing Ma
Fuzzy C-Means Clustering With Local Information and Kernel Metric for Image Segmentation

(2013) IEEE Transactions on Image Processing, Volume 22, Issue 2, Page No 573 - 584,
DOI: https://doi.org/10.1109/TIP.2012.2219547
Article Link: https://ieeexplore.ieee.org/document/6305476

12. Arati Kothari and Dr. B. Indira
A Study on Classification and Detection of Brain Tumor Techniques

(2015) International Journal of Computer Engineering and Technology, Volume 6, Issue 11, Page No 30-35,
Article Link: https://iaeme.com/MasterAdmin/Journal_uploads/IJCET/VOLUME_6_ISSUE_11/IJCET_06_11_003.pdf

13. Mayur V. Tiwari and D. S. Chaudhari
An Overview of Automatic Brain Tumor Detection from Magnetic Resonance Images

(2013) International Journal of Advanced Research in Engineering and Technology, Volume 4, Issue 2, Page No 61-68,
Article Link: https://iaeme.com/MasterAdmin/Journal_uploads/IJARET/VOLUME_4_ISSUE_2/IJARET_04_02_007.pdf

14. Nidhi and Poonam Kumari
Brain Tumor and Edema Detection Using Matlab 7.6.0.324

(2014) International Journal of Computer Engineering and Technology, Volume 5, Issue 3, Page No 122-131,
Article Link: https://iaeme.com/MasterAdmin/Journal_uploads/IJCET/VOLUME_5_ISSUE_3/IJCET_05_03_014.pdf