



Figure 7: Initialization of level set method from center of image area

Thresholded opening-closing by reconstruction (bw)



Figure 8: Type from heading

VI. Conclusion

In the classification of brain tumor, the approach of fuzzy c-means clustering in MATLAB

environment gave a 2 dimensional figure of concerned section with clear outlines of tumor. The RGB to gray conversion simulated the performance of Morphological operations that outlines the tumor region. The fuzzy clustering rules then modify the results of morphological operations based on standard rules and improve the accuracy of proposed architecture. This image processing approach could further be modified to 3D; subjected to availability of resources. The research is limited to this point and further enhancement in this segment is due to algorithms that are more specific.

References

- [1] Robin Christ J.C., Dr. Parvathi R.M.S., "Brain Tumors: An Engineering Perspective" IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 4, No 3, July 2012 (ISSN online): 1694-0814
- [2] VivekAngoth, CYN Dwith, Amarjot Singh, "A Novel Wavelet Based Image Fusion for Brain Tumor Detection", IJCVSP, 2013.
- [3] V.B Padole and D.S. Chaudhari, "Detection of Brain Tumor in MRI Images Using Mean Shift Algorithm and Normalized Cut Method", 2012.
- [4] Z. Shi, L. He, T. N. K Suzuki, and H. Itoh, "Survey on Neural Networks used for Medical Image Processing", 2009.
- [5] H. . Yu and J.L. Fan, "Three-level Image Segmentation Based on Maximum Fuzzy Partition Entropy of 2-D Histogram and Quantum Genetic Algorithm", 2008.
- [6] D. Kovacevic and S. Loncaric, "Radial basis function-based image segmentation using a receptive field", 1997.
- [7] Bezdek,J.C. (1981)Pattern Recognition With Fuzzy Objective Function Algorithms. Plenum Press, New York.