Brain Tumor Classification Based on Level Set Evolution on Constructed Tumor Probability Map

K. Muthu Kumar and S. Athi Narayanan

Abstract : In this paper, the Precision must be made as to the structure of the FCM. We implemented a "data" containing FCM function class. This class is generic (it uses templates) and can therefore be applied to any structure if the data that are only "double" category. It should also create a "distance" function in the structure, in order to specify the distance calculation and thus quickly change the FCM so that it fits on any sources of information.. Sufficient information to initialize the algorithm is gathered from the user simply by a line drawn on the maximum diameter of the tumor, in line with the clinical practice. Furthermore, an algorithm based on CA is presented to differentiate necrotic and enhancing tumor tissue content, which gains importance for a detailed assessment of radiation therapy response. Validation studies on both clinical and synthetic brain tumor datasets demonstrate 80%–90% overlap performance of the proposed algorithm with an emphasis on less sensitivity to seed initialization, robustness with respect to different and heterogeneous tumor types, and its efficiency in terms of computation time.