ABSTRACK

Data mining is a method for retrieving information in the dataset. In the data mining, clustering techniques have an important role because it can be used to classify diseases based on the characteristics suffered. Problems on the medical data is difficult to get the speed of execution time and good performance in high-dimensional data processing. Fuzzy C-Means Clustering (FCM) is a clustering algorithm based on fuzzy logic process, in which the grouping data based on the value of the degree of membership and allow the data become a member of more than one group. To overcome these problems, the FCM implemented with the approach of Graphics Processing Units (GPU) that can increase the speed of application execution and performance compared sequentially. Optimize the application of GPU computing performance because it can work in parallel. One method of application by making the calculation function in finding the value of the degree of membership is run in parallel on the GPU. The result is able to shorten the time of execution of 10.70287 seconds for the data dimension of 15 154 and 4.13423 seconds for the data dimension 12,600.

Keywords: Data Mining, Fuzzy C-Means, parallel, clustering, GPU, execution time