Der Link

Published: 07 February 2018

Map-Reduce framework based cluster architecture for academic student's performance prediction using cumulative dragonfly based neural network

- M. R. M. VeeraManickam, M. Mohanapriya, Bishwajeet K. Pandey,
- Sushma Akhade, S. A. Kale, Reshma Patil & M. Vigneshwar

Cluster Computing volume 22, pages1259–1275(2019)Cite this article

268 Accesses 4 Citations Metricsdetails

Abstract

The major aim of the education institute is to provide the high-guality education to students. The way to attain the high quality in the education system is to determine the knowledge from the educational data and learn the attributes which influence the performance of the students. The extracted knowledge is used to predict the academic performance of the students. This paper presents the student performance prediction model by proposing the Map-reduce architecture based cumulative dragonfly based neural network (CDF-NN). The CDF-NN is proposed by training the neural network by the cumulative dragonfly algorithm (DA). Initially, the marks of the students from semester 1 to semester 7 are collected from different colleges. In the training phase, the features are selected from the student's information and the intermediate data is generated by the mapper. Then, the intermediate data is provided to the reducer function which is built with the CDF-NN to provide the estimated marks of the students in a forthcoming semester. The proposed method is compared with the existing methods, such as Dragonfly- NN and Back prorogation algorithm for the evaluation metrics, MSE and RMSE. The proposed prediction model obtains the MSE of 16.944 and RMSE of