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Hybrid geometric sampling and AdaBoost based deep learning approach for data imbalance in E-commerce

Sunita Dhote[1] · Chandan Vichoray[1] · Rupesh Pais[1] · S. Baskar[2] · P. Mohamed Shakeel[3]

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Abstract

Presently, significance of deep learning techniques starts to overlook the world of E-commerce with their endless customizable online shopping experience to the users. Though huge data is streaming constantly during online commerce, data imbalance problem is still unaddressed due to insufficient analytical algorithms to handle huge datasets for smooth outliers. This leads to high congestion in the network as well as the extraordinary cost problem during online commerce. The foremost objective of this work is to resolve the classification task of imbalance data and churn rate using hybrid geometric sampling and AdaBoost based deep learning classification approach that uses diverse solution to provide a balance among prediction, accuracy, precision, specificity, sensitivity, and usability of data in E-commerce. This proposed solution helps to reduce the data imbalance problem and prediction of churn as well as non-churn customers in E-commerce web links. The experimental analysis has been carried out for the proposed algorithm in accordance with conventional techniques to check the practicability of the algorithm in real time practice.

Keywords E-commerce · Deep learning · AdaBoost · Data imbalance · Geometric analysis

✉ Sunita Dhote
sunitadhote@outlook.com

[1] Department of Management Technology, Shri Ramdeobaba College of Engineering and Management, Nagpur, India

[2] Department of Electronics and Communication Engineering, Karpagam Academy of Higher Education, Coimbatore, India

[3] Faculty of Information and Communication Technology, Universiti Teknikal Malaysia Melaka, Melaka, Malaysia