Abstract

Electronics Commerce (E-Com) is one among the various business methodologies that addresses the growing requirement of business organizations, and customers. The E-commerce industry is one of the world’s leading and growing industries with market worth around $22.1 trillion globally. Through E-Com, companies are developing the competence in business domain. The business giants like Amazon, Flipkart, etc. utilizing Machine Learning (ML) potential to make matchless competitiveness in the market through data analytics and business intelligence. ML has empowered businesses by analyze the data collected through various sources including social media reviews. Data scientists are in huge demand in E-Commerce market researches because predictive data analytics based on ML can enhance sale prospects and discover the reasons of customer churn, by analyzing customer’s reviews and click-through actions, preferences and past purchase history, in real-time.

Massive increase in the volume, variety and velocity of data generated through various businesses or E-Commerce platforms pose a huge computational and storage challenge for
data analysis and intelligence tasks. Addressing the computational and storage needs for business intelligence tasks, cloud computing paradigm is evolved. The data and computation can be distributed to any Cloud computing environment with minimal effort nowadays. Also, Cloud computing paradigm turned out to be valuable alternatives to speed-up machine learning platforms.

The work, first discusses the ‘E-Commerce advantages’, ‘Importance of Machine Learning in E-Commerce Domain’, ‘Cloud Computing and Need of Cloud platforms for Machine Learning tasks’. Also, the background for ‘E-Commerce Product Data Classification Task’ ‘is established. Introduction to multiclass classification and the literature survey for various classification tasks is presented. Finally, a Predictive Model for E-commerce Data Classification Task is proposed and deployed over Microsoft Azure Cloud. The proposed model predicts the Product Class from a large product dataset released by a well-known e-commerce company for a competition. The proposed model is build using ‘Neural Network’ (Multiclass) and R-Script module for better convergence. The obtained results are compared with benchmark model “Multiclass Logistic Regression” and evaluation is done on basis of prediction accuracy. Proposed work also demonstrates the use of one of the foremost cloud environments for machine learning. The results attained by the proposed model are promising and the paper also mentioned the future research work in the field.

References

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Predictive Model for Multiclass Classification of E-Commerce Data: An Azure Machine Learning Approach


Index Terms

Computer Science  Artificial Intelligence

Keywords