Rule-Based Customer Churn Prediction Model Using Artificial Neural Network Based and Rough Set Theory

Harvendra Kumar and Rakesh Kumar Yadav

Abstract Customer Churn can also be your best friend to make better marketing decisions. Identifying early who is at risk to leave is the best way to segment your campaigns to re-engage these users effectively and in time because it is more expensive and time-consuming acquiring new customers than retaining old ones. In this modern age of digitization, everyone uses online services for various day-to-day activities provided by numerous E-commerce websites. The consumers write reviews which explain and help other companies to the happiness of customers. This paper proposed a rule-based customer churn prediction model using artificial neural network based and rough set theory on customer reviews dataset. The utilization of presented framework help companies in making intelligent decision support system.

Keywords Churn prediction · Neural network · Sentiment analysis · Rough sets

1 Introduction

A common problem across businesses in many industries is that of customer churn. The businesses often have to invest substantial amounts attracting new clients, so every time a customer leaves it represents a significant investment lost. Both time and effort then need to be channeled into replacing them [1]. Churn prediction is one of the most popular Big Data use cases in business. It consists of detecting customers who are likely to cancel a subscription to a service. Churn prediction can be extremely useful for customer retention and by predicting in advance customers that are at risk of leaving [2, 3].

Having the capacity to anticipate when a customer is probably going to leave and offer them motivations to stay can offer colossal funds to a business [4]. This is the

H. Kumar · R. K. Yadav (✉)
Department of Computer Science and Engineering, IFTM University, Moradabad, India
e-mail: rkyiftmuniversity@yahoo.com

H. Kumar
e-mail: harvendra.patel82@gmail.com

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