Prediction of Customer Churn using Fuzzy Balanced Probabilistic C-means Algorithm

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 178
Number 21

Year of Publication: 2019

Authors:
Vallabhaneni Renuka Devi, G. Bharathi, G. V. S. N. R. V. Prasad

10.5120/ijca2019919068

Abstract

Churn prediction in telecom sector is a major task for any of the service providers to increase the telecom subscriber’s worldwide and also to sustain in the competition. Prediction of churners for a company is always a difficult task due to the sparsity, hugeness and unbalanced nature of data. Generally the term churn indicates the customer who is dissatisfied with the services providing by the telecom provider, likely to unsubscribe from the services or leave the company. The main intension of churn prediction is to estimate the churners and to find out the accurate causes which dissatisfy the customer. To effectively assist the telecommunication organizations, this paper provides fuzzy based clustering methods to enhance the business strategies and marketing activities. A new clustering algorithm called Fuzzy balanced probabilistic c-means with α (distance measure) is used to identify the customers those are more prone to churn. FBPCM- α has more semantic strength and accuracy than traditional FCM. This paper also addresses the different issues related to fuzzy clustering for handling the data preprocessing steps, initial centroids, unbalanced datasets, distance measures and validity.
indices to get qualitative clusters. Experimentation was done on china telecom data to identify analogous group of clients who are more likely to prone to churn from the telecom services.

References

6. Wai-Ho Au, Keith C. C. Chan, and Xin Yao."A Novel Evolutionary Data Mining Algorithm with Applications to Churn Prediction" IEEE TRANSACTIONS ON EVOLUTIONARY COMPUTATION, VOL. 7, NO. 6, DECEMBER 2003

Index Terms
Keywords

Fuzzy clustering, Semantic Driven Subtractive Clustering Algorithm, FBPCM-\( \alpha \), Churn data