

## Uplift Segmentation Approach for Targeting Customers in a Churn Prediction Model

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**Abstract :** Segmenting customers plays a significant role in churn prediction. It helps the marketing team with proactive and reactive customer retention. For the reactive retention, the retention team reaches out to customers who already showed intent to disconnect by giving some special offers. When coming to proactive retention, the marketing team uses churn prediction model, which ranks each customer from rank 1 to 100, where 1 being more risk to churn/disconnect (high ranks have high propensity to churn). The churn prediction model is built by using XGBoost model. However, with the churn rank, the marketing team can only reach out to the customers based on their individual ranks. To profile different groups of customers and to frame different marketing strategies for targeted groups of customers are not possible with the churn ranks. For this, the customers must be grouped in different segments based on their profiles, like demographics and other non-controllable attributes. This helps the marketing team to frame different offer groups for the targeted audience and prevent them from disconnecting (proactive retention). For segmentation, machine learning approaches like k-mean clustering will not form unique customer segments that have customers with same attributes. This paper finds an alternate approach to find all the combination of unique segments that can be formed from the user attributes and then finds the segments who have uplift (churn rate higher than the baseline churn rate). For this, search algorithms like fast search and recursive search are used. Further, for each segment, all customers can be targeted using individual churn ranks from the churn prediction model. Finally, a UI (User Interface) is developed for the marketing team to interactively search for the meaningful segments that are formed and target the right set of audience for future marketing campaigns and prevent them from disconnecting.

**Keywords :** churn prediction modeling, XGBoost model, uplift segments, proactive marketing, search algorithms, retention, k-mean clustering

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