Customer Review Analysis through Text Summarization and XAI

Md Tarikul Islam, Jahid Hasan Mamun, S M Ibrahim, Md. Mofaqkhayrul Islam Mim, Shihab Sharar, Annajiat Alim Rasel

Dept. of CSE, BRAC Uiversity
{ md.tarikul.islam, jahid.hasan.mamun, sm.ibrahim, mofaqkhayrul.islam, shihab.sharar }@g.bracu.ac.bd, annajiat@gmail.com

Text summarization is one of the methods of information consumption. It can help the stakeholders and marketers to get specific and vital keywords in a review quickly. Most of the previous approaches focused on the sentiment analysis of the reviews and feedbacks. Sentiment analysis can tell attitudes towards the products, brands, or companies, but it can not give many contexts for the organizations. Text summarization solves this issue by presenting the keywords and analyzing important features in sentiment analysis to generate a report on feedback and highlight the critical factors. Reviews or feedbacks of the customers are summarized, followed by labeling them via sentiment analysis. We can summarize the text by mining product features on customers' comments, correlate opinion sentences in each review, and determine whether each opinion sentence is positive or negative. After creating the model through neural networking, eXplainable AI (XAI) is applied to locate important features to find out the role-playing keywords in summarized reviews. For XAI, LIME and IntGrad are used to visualize and interpret the model. This work can help organizations to focus on the essential keywords from customer reviews.