Abstract

The development of technology allows users to search for skincare products online, but there are still shortcomings in knowing the suitability of the product to the user's skin condition. Therefore, a recommender system that is personalized and suitable for the user's skin needs is needed. Conversational Recommender System (CRS) can be a solution that enables dynamic interaction between users and the system through natural language. Many previous studies have developed CRS using Natural Language Processing (NLP) for various domains, but there are still some drawbacks such as limitations in handling long and complex conversations. Transformer models such as BERT have shown superior performance in NLP tasks. However, it has limitations in size and computational requirements. Therefore, we propose the use of DistilBERT which is a distilled version of BERT in developing CRS for the skincare product domain. In addition, a critiquing approach is also used to customize recommendations based on user feedback. The experiment results show that the DistilBERT model can significantly improve performance through gradual training, achieving a validation accuracy of 80.05%. This model consistently outperforms traditional machine learning methods such as Random Forest and K-Nearest Neighbors (KNN) in text classification tasks. The high recommendation accuracy indicates that the model performs well, even without applying the critiquing process. However, the critiquing approach is still necessary to help the model overcome limitations that may not be directly addressed by simply receiving user feedback. Overall, the use of DistilBERT and the critiquing approach in CRS can provide more accurate and efficient recommendation results.

Keywords: *Conversational Recommender System, DistilBERT, Critiquing-based Recommender System, Chatbot*