A Proposal of Improved Latent LSTM Allocation Model to Learn Browsing History Data of Flower EC Site

Zhiying Zhang

Waseda University

Abstract

In recent years, a huge amount of user browsing history data has become possible to be accumulated on websites and it is desirable to make use of such data for marketing activities. Since the browsing history shows differences in users' preferences and purchasing motivation for products, the browsing history data becomes an important resource for analyzing user purchasing activities. In previous studies, browsing history data can be grouped using Latent LSTM Allocation, which combines the Long short-term memory and the Latent Dirichlet Allocation models, but it doesn't consider the relationship between the browsing behavior and the purchase action. Therefore, this research proposes an analytical model that enables us to analyze purchasing motivation of customers for each product using user browsing behavior data for an EC site that handles fresh flower products. Specifically, we propose a new Latent LSTM Allocation model that can consider not only the information of user browsing and purchasing behaviors but also the time interval of browsing behavior on individual pages on the target EC site, so that it is able to extract groups based on purchasing tendency. We also analyze the findings obtained by applying the proposed model to actual usage history data.