Ms. Zhiying Zhang

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

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.

Mr. Reo Iizuka

Construction of Demand Forecast Model of Tokyo Taxi Based on Probe Data Analysis

Abstract: We construct a machine learning based decision support model that can help taxi drivers dispatch their vehicles appropriately by utilizing probe data of taxis in Tokyo. Traditionally, taxi dispatch has relied on the driver's experience and intuition. The number of customers acquired depends on their knowledge gained through many years of experience. However, sometimes many taxis are waiting for a customer at train stations, sometimes many customers wait in a long queue for a taxi. In addition, there are differences in the travel distance depending on characteristics of town surrounding a station. In fact, not all drivers know stations with high demand and stations where there are customers with long expected travel distances. Therefore, it is desirable to build an analytical model that enables efficient acquisition of customers regardless of their experience. This study constructs a machine learning model to evaluate a station using two indicators, driver waiting time and customer travel distance based on taxi probe data and propose a method to visualize them for drivers to understand the model's output easily. Besides, stations are clustered based on these two indicators. By this process, we propose an analysis model with visualization and clustering that supports driver's decision.