Abstract

With the increasing popularity of bicycles as eco-friendly transportation, the market offers a wide range of options with diverse specifications and functions. However, navigating through these options can be overwhelming for users lacking technical expertise, leading to time-consuming searches for a suitable bicycle. To address this challenge, we propose a conversational recommender system (CRS) that prioritizes functional needs, providing personalized recommendations through interactive user engagement. The CRS acts as a professional sales support, guiding users to express their functional requirements and aiding decision-making. Leveraging ontology as a knowledge representation, the system effectively maps functional requirement to specific product features, facilitating accurate recommendations. Our evaluation of the CRS considers user satisfaction and recommendation accuracy, which attains an accuracy rate of 87.91% with positive user satisfaction feedback. These results highlight the system's efficacy in assisting users in selecting bicycles based on their unique functional requirements and streamlining the decision-making process.