ABSTRACT (English)

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Generating Questions on Conversational Recommender System using Semantic Reasoning and Singular Value Decomposition

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Conversational Recommender System (CRS) based on product functional requirements was developed to help users who are not familiar with technical features to easily express user requirement through product functional requirements. Product functional requirements are requirements from a product usability point of view. For example, users want smartphones for browsing and playing games. So that users who do not understand the product's technical features can more easily express their needs. In this CRS, questions are generated using semantic reasoning. However, the functional requirements asked of the user are chosen from the candidate nodes. The candidate nodes are a set of functional requirements questions that the user potentially likes. Users will get questions about functional requirements that do not match their preferences. Thus, the system will give repeated questions and make the system inefficient. In this study, we overcome this problem by proposing a learning mechanism using Singular Value Decomposition (SVD) to generate questions. The evaluation results show that using a learning mechanism at the time of generating question can increase the efficiency of user-system interaction. And by utilizing the SVD method in the candidate node weighting process, it is possible to make questions asked to the user according to the user's preferences.

Keywords: Recommender System, Conversational Recommender System, SVD, Functional Requirements