Apply deep learning to build a personalized attraction recommendation system in a smart product service system

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Abstract. Although most studies use data analysis models as a solution for SPSS, a single model cannot handle multiple tasks at the same time, and errors in model analysis can easily make the system unstable, resulting in unsatisfactory services provided to customers. In addition, most studies extract potential customer needs through textual data, while ignoring the information possessed by image data. In order to make up for the lack of research, this study proposes a method, which includes: (1) Constructing a suitable model to optimize the existing PSS, in which the customer preference is extracted from the image data through the Object Detection model. (2) Analyze customer feedback through Natural Language Processing (NLP) methods to optimize the system. (3) Integrate multiple deep learning models to build a recommendation system to provide customers with personalized services. The main purpose of this research is to integrate multiple models into an SPSS, and to provide a more stable system through the interactive operation of the models. Among them, it analyzes user preferences through image assistance, improves customer satisfaction, and establishes a feedback system to provide personalized services based on user comments. In this study, the customer journey map is used to verify the feasibility of this attraction recommendation system, and experiments show that this system can improve customer satisfaction.

Keywords. Smart product service system; object detection; natural language processing; deep learning; recommendation system; personalization.

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