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**MERGED ONTOLOGY AND SVM-BASED INFORMATION EXTRACTION AND RECOMMENDATION SYSTEM FOR SOCIAL ROBOTS**

**Abstract:**

The recent technology of human voice capture and interpretation has spawned the social robot to convey information and to provide recommendations. This technology helps people obtain information about a particular topic after giving an oral query to a humanoid robot. However, most of the search engines are keyword-matching mechanism-based, and the existing full-text query search engines are inadequate at retrieving relevant information from various oral queries. With only predefined words and sentence-based recommendations, a social robot may not suggest the correct items, if items retrieved along with the information are not predefined. In addition, the available conventional ontology-based systems cannot extract precise data from webpages to show the correct results. In this regard, we propose a merged ontology and support vector machine (SVM)-based information extraction and recommendation system. In the proposed system, when a humanoid robot receives an oral query from a disabled user, the oral query changes into a full-text query, the system mines the full-text query to extract the disabled user's needs, and then converts the query into the correct format for a search engine. The proposed system downloads a collection of information about items (city features, diabetes drugs, and hotel features). The SVM identifies the relevant information on the item and removes anything irrelevant. Merged ontology-based sentiment analysis is then employed to find the polarity of the item for recommendation. The system suggests items with a positive polarity term to the disabled user. The intelligent model and merged ontology were designed by employing Java and Protégé Web Ontology Language 2 software, respectively. Experimentation results show that the proposed system is highly productive when analyzing retrieved information, and provides accurate recommendations.