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Knowledge Classification and Demand Articulation & Integration Methods for Intelligent Recommendation System

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ABSTRACT

The wide spread of internet business recently necessitates recommendation systems which can recommend the most suitable product for customer demands. Currently the recommendation systems use content-based filtering and/or collaborative filtering methods, which are unable both to explain the reason for the recommendation and to reflect constantly changing requirements of the users. These methods guarantee good efficiency only if there is a lot of information about users.

This paper proposes an algorithm called 'demand articulate & integration' which can perceive user's continuously varying intents and recommend proper contents. A method of knowledge classification which can be applicable to this algorithm is also developed in order to disassemble knowledge into basic units and articulate indices. The algorithm provides recommendation outputs that are close to expert's opinion through the tracing of articulate index.

As a case study, a knowledge base for heritage information is constructed with the expert guide's knowledge. An intelligent recommendation system that can guide heritage tour as good as the expert guider is developed.

Key Words: Collaborative filtering(), Knowledge classification(), Demand articulation & integration), Ontology inference(1. 가 가 가 가 가 가 가 가 가 (Demand (Contents Based articulation & integration) Filtering) (Collaborative Filtering)

가 TTS 가 2. 3.2 (Demand **Articulation & Integration Method)** Fig. 1 2.1 (Contents Based Filtering) 가 가 'Connect' 'Articulate' 가 (Connect) 가 가 가 (Articulate) 가 가 가 가 가 가 2.2 (Collaborative Filtering) 가 가 가 Fig. 1 Connect & Articulate . Fig. 2 가 가 가 가 Fig. 2 Knowledge integration vs. Knowledge combination 3. Element Level 3.1 Alternative

Demand Articulation & Integration

4.1 Contents DB MS-SQL2000 JSP (Dynamic) 4.2 4.2.1 X-Y . X-Y 13 (Articulate) (Articulate Index) 4.2.2 X-Y 13 가 40 X-Y (Articulate) (Articulate Index) Fig. 3 Structure of knowledge base 4.3 (Initial Recommendation 4. Module) (Demand Articulation & Integration) 가 X/Y/Z

Initial Contents Initial mmendation Interesting Field Selection Other Contents

Fig. 4 Structure of intelligent recommendation system

가 Routing Index Ordering Index(Articulate Index) TTS Index Feedback Routing Reference Routing Prototype Routing 4.4 (Demand

Articulation & Integration Module)

Web

. Z

(Explicit) (Implicit) 가 Index 가 가 Articulate Index 가 Demand Articulation & Integration Ontology Inference Method

Demand Index

Fig. 5 Various screens of the intelligent recommendation system

4.5 TTS

TTS

Index

5.

(Demand Articulation &

Demand Articulation & 가 Integration 가 Articulate Index 가 가

, Demand Articulation & Integration Module

(feedback)

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Integration)