

MINING PROGRESSIVE USER BEHAVIOR FOR E-COMMERCE USING VIRTUAL REALITY TECHNIQUE

Ming-Chang Chen

Dr. Chi-Ren Shyu, Thesis Supervisor

ABSTRACT

In the past decade, the virtual reality (VR) technique has been becoming a popular marketing tool on e-commerce websites, where the consumers are allowed to interact with the products and have a vivid shopping experience simulated to the real world. Despite of the advantages, VR shopping is still at its early stage due to some difficulties, namely, 1) complex communication among VR components, backend relational databases, and web services, 2) meaningful interpretation of mined patterns into the user behavior through VR tools, and 3) vast amount of information to mine and efficient summarization of the results to guide user's navigation.

To overcome these obstacles, several techniques from the fields of Information Retrieval and Data Mining & Knowledge Discovery have been adopted and extended for the development of our system that is able to recommend products computationally according to the user's preference. These techniques include ranking in a Vector-Space Model to profile user's behavior based on their demographic information and mining Association Rules to analyze user's choices as well as real-time navigational behavior. This system can adapt itself to meet each individual's interest progressively. It is our ultimate goal to provide a general framework that can be applied to any web-based e-commerce applications where customers can find the most fitting products efficiently and effectively under a virtual reality environment.