Abstract

The availability of rich and diverse nature of unstructured and hyper-textual content in the Web coupled with the power of modern search engines either necessitate or lure the users to undertake the task of Web-based Knowledge Gathering (WKG). WKG is typically a complex and cognitive task under taken by the users on the Web for their learning, exploration, discovery investigation or decision-making. Though search is the primary operation in WKG, the involvement of many other human factors makes it difficult for the search engines to address this special requirement.

In this paper, we argue that an active support system can be built around today’s search engines that could assist the users in their WKG tasks. We propose an intelligent support system composed of cooperating agents that build contextual structures in the form of semantic link network by observing the task of their users. The agents share these structures and seek assistance from other agents who may provide their task structures based on the
similarity of the tasks. The requesting agents then use these newly obtained task structures to extract out information that would help their users in achieving their goals. We implemented this as a prototype system by wrapping around a popular search engine and carried out user evaluation with tasks from diverse domains. The results showed that the users were able to save considerable efforts in the process of knowledge gathering and hence the system was able to support its users.

Reference

Contextually Cooperating Agents for User Assistance in Web-based Knowledge Gathering Tasks


Index Terms

Computer Science
Informatics

Key words

Web-based Knowledge Gathering Tasks
WKG
Contextual Structures
Contextual Cooperation
Intelligent Agents

Support System

Semantic Link Network

Exploratory Web Search