A Review of Agent-Based Frameworks for Information Retrieval

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With the development of the Internet in the digital age, operative technologies that utilize automated tools for searching and retrieving information in any domain, even those not on the web, are in great demand. However, the enormity of the World Wide Web (WWW) poses a challenge for researchers to retrieve useful and precise information to meet their requirements. An Information Retrieval (IR) system is meant to form a stored knowledge base, with items accessible to the information seeker. A major problem of the traditional IR systems is their inability to provide users with a semantic description of the knowledge needed by them. This problem is addressed by this Intelligent Information Retrieval (IIR), which is capable to give much more relevant and accurate information. The need to discover and observe the real-time mutations in knowledge and information requires new techniques in the web IR process. The results of IR contain an abundance of information that matches with the queries or searches in varying degrees of relevance. The relevance of the results is an important concern and often associates with the volume of the results: the bigger the volume of information, the better the relevance, while a lesser volume of information may have less relevant content. Seeking solutions for this issue makes Web IR an active and interesting domain of research and development. Considering the past two decades, interest among many has arisen in software agent technology and its applications. With Intelligent autonomous agents being most suitable for numerous applications in a semantic web environment, many researchers have proposed different frameworks, which comprise of details such as information collecting agents, storing agents, reasoning agents and querying agents. These structures often take into consideration semantic web and intelligent agents research, and other technologies such as information retrieval and knowledge modeling. This study focuses on a brief survey of Agent-based IR Systems on semantic web and ontology. The performance of such intelligent systems is calculated by considering the productiveness, quality of the search and the results obtained, time performance, and whether users are satisfied with the search results.

Keywords: *intelligent information retrieval, intelligent autonomous agents, world wide web, knowledge modeling*