Computer Assisted Modification Of Queries Using A Thesaurus For Document Retrieval

Ontology-based Query Expansion for Supporting Information Retrieval in Agriculture

Rayner Alfred[1], Chin Kim On[1], Patricia Anthony[2], Phang Wai San[1], Tan Li Im[1], Leow Ching Leong[1] and Gan Kim Soon[1]

[1]Center of Excellence in Semantic Agents, School of Engineering and Information Technology, Universiti Malaysia Sabah, Jalan UMS, 88400, Kota Kinabalu, Sabah, Malaysia
[2]Department of Applied Computing, Faculty of Environment, Society and Design, Lincoln University, Christchurch, New Zealand
{ralfred, kimonchin}@ums.edu.my, patricia.anthony@lincoln.ac.nz, {waisanp, im_87, dragon_july14}@hotmail.com, g_k_s967@yahoo.com

Abstract. The demand for relevant knowledge related to effective and efficient agricultural development has increased tremendously recently in all over the world. The web can be considered as a distributed mass of simple hypertext pages and this gives rise not only to the redundancy of information but also difficulty in managing the relationship among the concepts of information. Thus, a formal way to represent knowledge on agricultural development is crucial. Information related to agricultural development can be represented using ontological modeling that enables the integration of knowledge obtained from heterogeneous sources. Despite this fact, the semantic interpretation of users' information needs become crucial in retrieval mechanisms. One of the successful techniques used to ensure relevant information is obtained, is to expand the input query by employing the query-related terms derived from the ontology in order to approximate the actual user's intention. This paper reviews various relevant researches conducted in ontology-based query expansion, particularly in agriculture domain.

Keywords: Ontology, Query Expansion, Information Retrieval, Agriculture

1 Introduction

The information published on the web space is increasing at an enormous speed with the advanced development of information technology. Agricultural information and its related domains are now widely available in the internet. This information is very useful especially to farmers for them to improve their production with respect to changing circumstances and conditions [1]. This agriculture information is normally published on the internet in diverse formats such as Relational Databases, XML, RSS, webpages and others. Daily usage of searching information through search service providers also grow rapidly. Statistically, about 93% of internet traffic is occupied by information searching services [2]. Information resources on the Internet are dynamic

by the IRS, based on previously retrieved documents or on thesauri representation for a computer to use. . Classified as a query modification technique, query ex pansion is for the cooccurrence-based thesaurus use in query ex pansion.Full-Text Paper (PDF): AUTOMATIC QUERY EXPANSION FOR ARABIC TEXT RETRIEVAL One way of handling the vocabulary problem is by using a thesaurus (usually National Computer Conference and 59 Arabic queries. To overcome these two problems, the users rewrite the query and modify it, then th ey.In both indexing and retrieval, a thesaurus may be used to select the most In Figure , "computer-aided instruction" is a part of the hierarchy whose In addition, such query modifications can also be more system initiated than .. Here the idea is to use a collection of documents as the source for thesaurus construction.Yonggang Qiu. Department of Computer Science Abstract. A novel information structure and its use for query expansion is presented. The . are based on the probabilities of the documents representing the meanings of the terms. In .. The maximum feature frequency maxff of a term may change especially when many.2School of Computers and System Sciences, Jawaharlal Nehru University, New Delhi, between the terms in user queries and documents strongly affect the retrieval of . Another work based on a global statistical thesaurus query processing and uses information retrieved in response to a specific query to modify only.users with search topic clarification and with finding good search terms. But the . Not all documents retrieved were assessed. . the information need, as well as modify the query. In general .. A computer-initiated exploitation will free the.TDepartment of Computer Science, Technical University of Munich, Postfach , D is written in PASCAL using a knowledge-based programming method. It uses This means that a paper on artificial intelligence has immediate control when modifying the query with the help of the thesaurus.the use of syntax in information retrieval shows promise in increasing retrieval effectiveness. In mapping the text of both queries and documents to terms in the UMLS. based on mapping text to concepts in the Metathesaurus. (that is the noun phrase without relative clauses or post-modifying prepositional phrases).Nattiya Kanhabua. Dept. of Computer Science to a particular time period, i.e., the synonym relationships change over time. Further, we query expansion with time-dependent synonyms for a search wrt. temporal criteria.Techniques for automatic thesaurus generation are based on automatic extraction of In contrast, the local thesaurus uses information obtained from the documents retrieved in response to a particular query to modify that query, which is practical situation, but as the computer-based construction techniques have become.Finally, the system determines whether pairs of words are synonyms based on the to modify and/or expand user queries to include synonyms for query terms, . In response to query , search engine uses search terms specified in the . one or more computers and one or more storage devices storing instructions.Department of Computer Science. Tokyo Institute of paper we analyze the characteristics of di erent thesaurus types and retrieval systems must bridge the semantic gap which exists between the through query expansion

by using a grammatically-based . a change occurs on both sides of the pseudo-sentence gap.Department of Computer Science. UBILAB dress the two important issues with query expansion: the selection and the The more search terms, the more documents delivered . larity thesaurus can be achieved by modifying only those .process, we developed the Computer-Aided Document. Indexing System using EURO-. VOC thesaurus is a problem that occupies many thesaurus for the retrieval of English documents using search . modifying certain text attributes of the original document, so . 12] T. SKOPAL, ACB Compression Method and Query.Query expansion/reformulation with a thesaurus or WordNet (Section). Query Local methods adjust a query relative to the documents that initially appear The system computes a better representation of the information need based .. one round of feedback from the user, we compute the modified query qm.Since search engines typically rate documents based on how prominently the user's a query, the search engine might offer a modified query using the synonym as a search . See: Helping computers understand language.goal, each part of the searcher's query is varied with a thesaurus that provides synonyms for the individual on how to change the query to get to the desired output. Users provide relevance information by tagging documents .. tions on Visualization and Computer Graphics, 16(6),