

INTRODUCTION TO I-SOAS

Intelligent – Semantic Oriented Agent based Search

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Abstract: This research poster paper shortly discuss a newly proposed approach .i.e., I-SOAS towards the problems of the development of intelligent graphical user interface, structuring of unstructured data, information management and system data representation.

1 INTRODUCTION

There are currently four intensive existing problems and very important aspects to be considered before and during the development of most of the business oriented product data management, electronic learning and enterprise data base systems .i.e., User System Communication, Meta Data Extraction & Processing, Information Management and Data Presentation. Focusing on these four aspects, we have proposed a solution as the extended version of already proposed and underdevelopment solution Semantic Oriented Agent Based Search (SOAS) (A. Zeeshan, 07-2007) (A. Zeeshan, 11-2007) .i.e., Intelligent Semantic Oriented Agent Based Search (I-SOAS).

2 I-SOAS

The proposed architecture of I-SOAS consists of four main iterative and centrally connected components .i.e., Intelligent User Interface (IUI), Information Processing (IP), Data Management (DM) and Data Representation (DR) as shown in Figure. 1.

Intelligent User Interface (IUI) is the initial component of I-SOAS, responsible for the intelligent user system communication. To implement IUI system architecture for development, IUI is divided into two main categories .i.e., Graphical User Interface and Communication Sources as shown in Fig.1.

In Communication Sources first the corresponding user is identified to enable correct the communication mode. If it is a system then electronic data communication mode will be enabled and if it is human then natural language based communication mode will be enabled. Whereas the Graphical User Interface is consists of the concept of intelligent flexible agent based graphical user interface to intelligently handle the user's queries, provide options to easily use, manipulate and redesign user interface and perform internal architectural component agent based communication.

Information Processing (IP) unit is the most important component of the I-SOAS because the quality of the performance of I-SOAS majorly depends on it. IP is divided into five main non-repetitive iterative sequential steps .i.e., data reading, tokenization, parsing, semantic modelling and semantic based query generation as shown in Fig.1. Data is retrieved, read and organized using Data Reader, then whole instructions are picked and tokenized in to the possible number of tokens using Data Tokenizer, which are then parsed with respect to the used natural/digital language used in communication using Data Parser. Tokenized and semantically evaluated information is used and reorganized in a Meta data based semantic model by Semantic Modeller and then in the end Semantic Based Query Generator will generate a query to extract desired result.

Data Management is responsible for two functions .i.e.; Semantic based Query Processing and

Data Management. In Semantic based Query Processor, first IP generated semantic based query is parsed then a new SQL query is generated to run extract the required relevant information data warehouse. Whereas the job of Data Manager is to manage the process of SQL query building, data extraction and creation of new indexes and storage based on newly retrieved information.

Data Representation is the last component of I-SOAS consisting of six non- repetitive sequential steps sub components .i.e., Information Retriever, Information Reader, Information Tokenizer, Information Parser, Information Reconstructor and Presenter. The job of this component to extract, tokenize, parse and reconstruct processed information to present the final output to user in understandable user’s used natural language format.

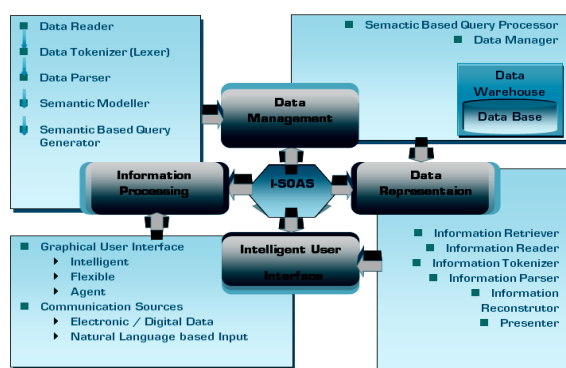


Figure 1: Intelligent Semantic Oriented Agent Based Search (I-SOAS) (A. Zeeshan, 2008).

3 CONCLUSIONS

In this poster research paper we have shortly demonstrated I-SOAS as a potential conceptual architecture based solution towards above described four intensive currently existing problems .i.e., User System Communication, Meta Data Extraction, Management and Representation. Currently we are implementing the implementation designs of I-SOAS. Moreover we are also finalizing the tools and technologies for the development of I-SOAS implementation designs. In near future, we hope to present the implementation designs and prototype version of I-SOAS.

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