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# **International Journal on Islamic Applications in Computer Science And Technology**

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**EDITED BY**

**Prof. Dr. Mohammed Zeki Khedher**

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## FORWARD

By the grace of Allah, it is a great pleasure to introduce the issue No. 15 which is the fourth issue in the fourth volume of: **The International Journal on Islamic Applications in Computer Science and Technology**

The success and the welcome of this Journal by researchers from many countries, gave us great encouragement for continuing issuing in the due time. This Journal is aimed at publishing original research papers in the field of Islamic Applications in computer science and technology. This field is catching a momentum in the recent years. As a Journal interested in this field, it is the first International Journal of its specific field. As research is growing in this field, we hope that this Journal will be a platform for researchers working in the field to publish their research.

This issue contains four papers. The first one is entitled: **Developing an Ontology of Concepts in the Qur'an**. This paper describes an ongoing work in developing an ontology. The approach of the paper is to investigate the applicability of ontology methods of formal Knowledge Representation from Artificial Intelligence and Text Analytics research to capture and represent abstract concepts in the Qur'an. Three methods are implemented. The first one is to elicit or extract the abstract concepts from experts in the domain. Another approach is to semi-automatically extract concepts from text sources from the domain. The last approach is to find existing partial ontologies for the domain, and try to unify and re-use them. The experimental verification result reveals that this proposed merging methods work well, as checked by human expert. A similarity measure was applied for ontology merging. A high accuracy is reported and recalled through experiments.

The second paper is entitled: **Towards Concept Extraction for Ontologies on Arabic language**. This paper deals with fundamental layers involved in ontology construction from Arabic text: extracting the relevant domain terminology from a text and discovering domain concepts. Moreover, the problem of Arabic concept extraction from domain texts is studied and a comparative review of the existing Arabic term extraction approaches highlighting the challenges posed by Arabic language characteristics is proposed. Despite the efforts to combine methods on Arabic term extraction, the field is still open for new development. The paper also proposes a future study to address this issue.

The third paper is of the title: **Using an Islamic Question and Answer Knowledge Base to answer questions about the holy Quran**. This paper presents the QAEQAS Quranic Arabic/English Question Answering System, which relies on a specialized search dataset corpus, and data redundancy. The corpus used is composed of questions along with their answers. The questions are phrased in many different ways in differing contexts to optimize Question Answering (QA) performance. As a complete question answering solution, the Python NLTK natural language toolkit has been used to process the user question as well as to implement the search engine to retrieve candidate results and then extract the best answer. The system takes and accepts a Natural Language (NL) question in English or Arabic from the user - through a GUI - as an input, then matches this question with the knowledge base questions, and then returns the corresponding answer. A keyword based search was used. First the user question was tokenized to get the keywords, and then the stop words were removed. The remaining keywords were used for searching the corpus looking for matched questions. After that, the system used scoring and ranking to find the best matched question

and then return the corresponding answer for this question. QAEQAS deals with a wide range of question types including facts, definitions.

The fourth paper is entitled: **Examining the role of computer and data mining to counter the negative impacts of globalization in Islamic banks.** This study aims to enlighten on the strategic proposal for Islamic banks in Arab countries to take advantage of the opportunities offered by globalization and therefore achieve greater benefits and reduce the risks and threats associated with them. The study focuses on two groups of results, namely public and private as the main subject matter. The study also looks at the current lack of technical developments which could adversely affect the speed of decision-making and lead to lack of coordination among the key decision makers. In studying the exposure of these institutions being to financial crises as a result of globalization, this paper also shows the possibility of benefiting from the experiences of the commercial banks, stating that globalization can actually stimulate Islamic banks to innovate and develop methods and attract new financing and investments. Few recommendations are given, such as fostering closer cooperation among Islamic banks in all countries and building a strong entity operating under one umbrella.

**Editor-In-Chief**

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