

إسهام مجلة جامعة الملك سعود - فرع علوم الحاسب والمعلومات في حوسبة اللغة العربية أثناء رئاستي لتحريرها

كلفتم بالعمل رئيساً للتحرير لمجلة جامعة الملك سعود - فرع علوم الحاسب. وقد حرصت أنا وزملائي أعضاء هيئة التحرير على نشر أبحاث تدعم اللغة العربية وحوسبتها وخدمتها بالتقنيات الحديثة. الأبحاث المنشورة في مجال حوسبة اللغة العربية كما في القائمة أدناه. ومن الجدول يتضح أننا إسهاماً من المجلة في حوسبة اللغة العربية أصدرنا عدداً خاصاً عن معالجة اللغات الطبيعية - اللغة العربية، وكانت محررة العدد الخاص هي ا.د. هند الخليفة أحد المهتمين بحوسبة اللغة العربية. وقد أرفقت بعد القائمة ورقة الدكتوراة في استعراض مقالات العدد الخاص، كما أرفقت رابطاً للعدد الخاص.

كانت فترة رئاستي للتحرير من 2008 إلى 2015 كما هو مذكور في سيرتي الذاتية. ولم أجد خطابات التكليف بالفتريات المختلفة للرئاسة، ولا يوجد في موقع المجلة ما يشير إلى من هو رئيس التحرير، لذا أرفقت صوراً من النسخ المطبوعة للمجلة للسنوات 2010 إلى 2014 والتي تم ذكرها فيها بصفتي رئيساً للتحرير.

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- 2- Alghamdi, Hanan M., Ali Selamat, and Nor Shahriza Abdul Karim. "Arabic web pages clustering and annotation using semantic class features." *Journal of King Saud University-Computer and Information Sciences* 26.4 (2014): 388-397.
- 3- Al Zamil, Mohammed GH, and Qasem Al-Radaideh. "Automatic extraction of ontological relations from Arabic text." *Journal of King Saud University-Computer and Information Sciences* 26.4 (2014): 462-472.
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رابط العدد الخاص:

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EDITORIAL

Introduction to the special issue on Arabic NLP:
Current state and future challenges



Overview of the articles

Arabic natural language processing (NLP) is still in its initial stage compared to the work in English and other languages. NLP is made possible by the collaboration of many disciplines including computer science, linguistics, mathematics, psychology and artificial intelligence. The results of which is highly beneficial to many applications such as Machine Translation, Information Retrieval, Information Extraction, Text Summarization and Question Answering.

This special issue of the Journal of King Saud University – Computer and Information Sciences (CIS) synthesizes current research in the field of Arabic NLP. A total of 56 submissions was received, 11 of which were finally accepted for this special issue. Each accepted paper has gone through three rounds of reviews, each round with two to three reviewers. The content of this special issue covers different topics such as: Dialectal Arabic Morphology, Arabic Corpus, Transliteration, Annotation, Discourse Relations, Sentiment Lexicon, Arabic named entities, Arabic Treebank, Text Summarization, Ontological Relations and Authorship attribution. The following is a brief summary of each of the main articles in this issue.

“arTenTen: Arabic Corpus and Word Sketches” by Nizar Habash et al. presented a web-crawled corpus of Arabic, gathered in 2012. arTenTen comprises 5.8 billion words. A chunk of it has been lemmatized and POS-tagged with the MADA tools and has then been loaded into Sketch Engine, a leading corpus query tool, where it is open for all to use. We have also created ‘word sketches’: one-page, automatic, corpus-derived summaries of a word’s grammatical and collocational behaviour. We show, with examples, what the corpus can show us about Arabic words and phrases, and how this can support lexicography and inform linguistic research. The paper also presents the ‘sketch grammar’ (the basis for the word sketches) in some detail; describes the process of building and processing

the corpus; and considers the role of the corpus in further research on Arabic.

“ADAM: Analyzer for Dialectal Arabic Morphology” by Wael Salloum and Nizar Habash presented ADAM (Analyzer for Dialectal Arabic Morphology), a poor man’s solution to quickly develop morphological analyzers for dialectal Arabic. ADAM has about half the out-of-vocabulary rate of a state-of-the-art MSA analyzer, and is comparable in its recall performance to an Egyptian dialectal morphological analyzer that took years and expensive resources to build.

“Transliteration Normalization for Information Extraction and Machine Translation” by Yuval Marton and Imed Zitouni identified and clustered name spelling variants using a Statistical Machine Translation method: word alignment. The variants are identified by being aligned to the same ‘pivot’ name in another language (the source-language in Machine Translation settings). Based on word-to-word translation and transliteration probabilities, as well as the string edit distance metric, the target-language names with similar spellings are clustered. Then, they are normalized to a canonical form. With this approach tens of thousands of high precision name transliteration spelling variants are extracted from sentence aligned bilingual corpora in Arabic and English (in both languages). When these normalized name spelling variants are applied to Information Extraction tasks, improvements over strong baseline systems are observed. When applied to Machine Translation tasks, a large improvement potential is shown.

“Arabic Web Pages Clustering and Annotation Using Semantic Class Features” by Alghamdi et al. presented a system to retrieve a machine-understandable data with the help of Web content mining technique to detect covert knowledge within these data. They propose an approach to achieve clustering with semantic similarities. This approach comprises integrating k-means document clustering with semantic features extraction and document vectorisation in order to group the Arabic web pages according to semantic similarities and then show the semantic annotation. The document vectorisation helps to transform text documents into semantic class probability distribution or semantic class density. In order to reach semantic similarities, the approach extracts the semantic class features and integrates them into the similarity weighting schema. The quality of the clustering result was evaluated

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