3rd Arabic Computational Linguistics (ACLing 2017)

Procedia Computer Science Volume 117

Dubai, United Arab Emirates
5 – 6 November 2017

Editors:

Khaled Shaalan
Samhaa R. El-Beltagy

ISBN: 978-1-5108-5224-2

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by Elsevier B.V.
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact Elsevier B.V.
at the address below.

Elsevier B.V.
Radarweg 29
Amsterdam 1043 NX
The Netherlands

Phone: +31 20 485 3911
Fax: +31 20 485 2457

http://www.elsevierpublishingsolutions.com/contact.asp

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Available online at www.sciencedirect.com

ScienceDirect

Procedia Computer Science 117 (2017) iii–v

Procedia Computer Science

www.elsevier.com/locate/procedia

Table of Contents

PREFACE
Khaled Shaalan, and Samhaa R. El-Beltagy 1

Transform-based Arabic sign language recognition
Ala addin I. Sidig, Hamzah Luqman, and Sabri A. Mahmoud 2

Automatic Arabic Summarization: A survey of methodologies and systems
Lamees Mahmoud Al Qassem, Di Wang, Zaid Al Mahmoud, Hassan Barada, Ahmad Al-Rubaie, and Nawaf I. Almoosa 10

Automated Evaluation of School Children Essays in Arabic
Maram F. Al-Jouie, and Aqil M. Azmi 19

A collocation extraction tool and two language resources for MSA
Abdulmohsen Al-Thubaity, and Ibtehal Baazeem 23

Arabic Single-Document Text Summarization Using Particle Swarm Optimization Algorithm
Raed Z. Al-Abdallah, and Ahmad T. Al-Taani 30

A web-based tool for Arabic sentiment analysis
Mazen El-Masri, Nabeela Altrabsheh, Hanady Mansour, and Allan Ramsay 38

A Rule-based Semantic Frame Annotation of Arabic Speech Turns for Automatic Dialogue Analysis
Chahira Lhioui, Anis Zouaghi, and Mounir Zrigui 46

ASRextractor: A Tool extracting Semantic Relations between Arabic Named Entities 55

AraSenTi-Tweet: A Corpus for Arabic Sentiment Analysis of Saudi Tweets
Nora Al-Twairesh, Hend Al-Khalifa, AbdulMalik Al-Salman, and Yousef Al-Ohali 63

Errors and non-errors in English-Arabic machine translation of gender-bound constructs in technical texts
Emad A.S. Abu-Ayyash 73

Development of the Arabic Loria Automatic Speech Recognition system (ALASR) and its evaluation for Algerian dialect
Mohamed Amine Menacer, Odile Mella, Dominique Fohr, Denis Jouvet, David Langlois, and Kamel Smaïli 81

Challenges in Sentiment Analysis for Arabic Social Networks
Ghadah Alwakid, Taha Osman, and Thomas Hughes-Roberts 89

A Rich Arabic WordNet Resource for Al-Hadith Al-Shareef
Manar Alkhatib, Azza Abdel Monem, and Khaled Shaalan 101

Detecting and Integrating Multiword Expression into English-Arabic Statistical Machine Translation
Sara Ebrahim, Doaa Hegazy, Mostafa Gadal-Haqq M. Mostafa, and Samhaa R. El-Beltagy 111

The Role of Diacritics in Designing Lexical Recognition Tests for Arabic
Osama Hamed, and Torsten Zesch 119

Developing Resources For Sentiment Analysis Of Informal Arabic Text In Social Media
Maher Itani, Chris Roast, and Samir Al-Khayatt 129

Altruistic Crowdsourcing for Arabic Speech Corpus Annotation
Soumia Bougrine, Hadda Cherroun, and Ahmed Abdelali 137

Dynamic Similarity Threshold in Authorship Verification: Evidence from Classical Arabic
Hossam Ahmed 145

Arabic Arithmetic Word Problems Solver
Bilal Siyam, Amjad Abu Saa, Omar Alqaryouti, and Khaled Shaalan 153

SOUKHRIA: Towards an Irony Detection System for Arabic in Social Media
Jihen Karoui, Farah Banamara Zitoune, and Véronique Moriceau..... 161

Automatic minimal diacritization of Arabic texts
Rehab Alnefaie, and Aqil M. Azmi 169

A morphological analyser for Maltese
Vinit Ravishankar, Francis M. Tyers, and Albert Gatt 175

Arabic Question Answering Using Ontology
Ali Albarghothi, Feras Khater, and Khaled Shaalan 183

Simplification of Arabic Masterpieces for Extensive Reading: A Project Overview
Muhamed Al Khalil, Nizar Habash, and Hind Saddiki..... 192

The Applicative Combinatory Categorial Analysis of Arabic
Ismaïl Biskri, Fatima-Zahra Berrakem, and Adel Jebali..... 199

Building a First Language Model for Code-switch Arabic-English
Injy Hamed, Mohamed Elmahdy, and Slim Abdennadher..... 208

System of Analysis and Generation for Amazigh Nominal Morphology based on Xerox's finite-state transducer
Rachid Ammari, L Zenkouar, and M. Outahajala 217

Towards the supervised machine learning and the conceptual segmentation technique in the spontaneous Arabic speech understanding
Younès Bahou, Mohamed Hédi Maaloul, and Emna Bougharioul 225

Hybrid approach for conceptual segmentation of spontaneous Arabic oral utterances
Younès Bahou, Mohamed Hédi Maaloul, and Hend Abbassi 233

Enhancing Visualization in Readability Reports for Arabic Texts
Hind Saddiki, Violetta Cavalli-Sforza, and Karim Bouzoubaa..... 241

Towards Efficient Online Topic Detection through Automated Bursty Feature Detection from Arabic Twitter Streams
Muhammad Hammad, and Samhaa R. El-Beltagy 248

AraVec: A set of Arabic Word Embedding Models for use in Arabic NLP
Abu Bakr Soliman, Kareem Eissa, and Samhaa R. El-Beltagy 256

Comparative Evaluation of Sentiment Analysis Methods Across Arabic Dialects
Ramy Baly, Georges El-Khoury, Rawan Moukalled, Rita Aoun, Hazem Hajj, Khaled Bashir Shaban, and Wassim El-Hajj..... 266

A Novel Arabic Text-independent Speaker Verification System based on Fuzzy Hidden Markov Model
Rania M. Ghoniem, and Khaled Shaalan..... 274

Arabic Machine Transliteration using an Attention-based Encoder-decoder Model
Mohamed Seghir Hadj Ameur, Farid Meziane, and Ahmed Guessoum 287

Arabic Social Media Analysis and Translation
Fatma Mallek, Billal Belainine, and Fatiha Sadat..... 298

Arabic Text-to-Sign (ArTTS) Model from Automatic SR System
Omar H. Al-Barahamtoshy, and Hassanin M. Al-Barhamtoshy 304