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Computational Linguistics and Intelligent Text Processing

17th International Conference, CICLing 2016
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In Memoriam of Adam Kilgarriff

Preface

CICLing 2016 was the 17th International Conference on Intelligent Text Processing and Computational Linguistics. The CICLing conferences provide a wide-scope forum for discussion of the art and craft of natural language processing research, as well as the best practices in its applications.

In 2015, Adam Kilgarriff, an influential scientist and a wonderful and brave person, passed away prematurely, at the age of only 55. Adam was a great friend of CICLing, a member of its small informal Steering Committee, one who helped to shape CICLing from its inception. Until his last days, already terminally ill, he volunteered to help us with the reviewing process for CICLing 2015. This CICLing event was dedicated to his bright memory, and its proceedings begin with a paper that attempts to summarize his scientific legacy.

This set of two books contains five invited papers and a selection of regular papers accepted for presentation at the conference. Since 2001, the proceedings of the CICLing conferences have been published in Springer's *Lecture Notes in Computer Science* series as volumes 2004, 2276, 2588, 2945, 3406, 3878, 4394, 4919, 5449, 6008, 6608, 6609, 7181, 7182, 7816, 7817, 8403, 8404, 9041, and 9042.

The set has been structured into 14 sections: an In Memoriam section and 13 sections representative of the current trends in research and applications of natural language processing:

- General formalisms
- Embeddings, language modeling, and sequence labeling
- Lexical resources and terminology extraction
- Morphology and part-of-speech tagging
- Syntax and chunking
- Named entity recognition
- Word sense disambiguation and anaphora resolution
- Semantics, discourse, and dialog
- Machine translation and multilingualism
- Sentiment analysis, opinion mining, subjectivity, and social media
- Text classification and categorization
- Information extraction
- Applications

The 2016 event received submissions from 54 countries. A total of 298 papers by 671 authors were submitted for evaluation by the international Program Committee (see Fig. 1 and Tables 1 and 2). This two-volume set contains revised versions of 89 regular papers selected for presentation, with the acceptance rate of 29.8%.

Table 1. Number of submissions and accepted papers by topic[a]

Submissions	Topic
60	Text mining
58	Information extraction
53	Lexical resources
44	Emotions, sentiment analysis, opinion mining
43	Information retrieval
42	Semantics, pragmatics, discourse
39	Clustering and categorization
36	Under-resourced languages
35	Machine translation and multilingualism
33	Morphology
33	Practical applications
28	Social networks and microblogging
25	Named entity recognition
25	POS tagging
23	Syntax and chunking
21	Noisy text processing and cleaning
20	Formalisms and knowledge representation
16	Plagiarism detection and authorship attribution
16	Question answering
16	Summarization
16	Word sense disambiguation
13	Computational terminology
13	Natural language interfaces
12	Other
11	Natural language generation
10	Speech processing
7	Spelling and grammar check
7	Textual entailment
6	Coreference resolution

[a]As indicated by the authors. A paper may belong to more than one topic.

In addition to regular papers and an In Memoriam paper, the books features papers by the keynote speakers:

- Pascale Fung, Hong Kong University of Science and Technology, Hong Kong
- Tomas Mikolov, Facebook AI Research, USA
- Simone Teufel, University of Cambridge, UK
- Piek Vossen, Vrije Universiteit Amsterdam, The Netherlands

Publication of full-text invited papers in the proceedings is a distinctive feature of the CICLing conferences. In addition to a presentation of their invited papers, the keynote speakers organized separate lively informal events; this is also a special feature of this conference series.

Table 2. Number of submitted and accepted papers by country or region

Country or region	Authors	Submissions[b]	Country or region	Authors	Submissions[b]
Algeria	15	6.5	Libya	2	0.5
Argentina	2	1	Mexico	8	5.17
Australia	5	1.33	Morocco	13	4.81
Austria	1	0.33	Nigeria	3	1
Brazil	8	3.75	Norway	10	3.96
Canada	24	10.78	Pakistan	1	1
China	23	11.25	Peru	3	2
Colombia	7	3	Poland	2	1
Czechia	19	8	Portugal	6	2.05
Egypt	17	6	Qatar	11	2.83
Finland	1	0.25	Romania	12	5.75
France	56	19.52	Russia	12	7.25
Germany	15	5.93	Saudi Arabia	5	1.3
Greece	3	1	Singapore	8	2.5
Hong Kong	2	1	South Africa	3	1
Hungary	6	5	South Korea	7	4
India	73	37.3	Spain	9	3.78
Indonesia	3	1	Sri Lanka	12	5
Iran	5	2.33	Switzerland	4	2
Ireland	3	1.25	The Netherlands	1	0.2
Israel	10	3.24	Tunisia	86	40.35
Italy	5	1	Turkey	53	29.22
Japan	13	3.5	Turkmenistan	1	0.33
Jordan	4	3	UAE	4	1.5
Kazakhstan	19	6.75	UK	18	9.17
Latvia	2	1	USA	30	13.4
Lebanon	2	0.67	Vietnam	4	1.25
			Total:	671	298

[b] By the number of authors: e.g., a paper by two authors from the USA and one from UK is counted as 0.67 for the USA and 0.33 for UK.

With this event, we continued our policy of giving preference to papers with verifiable and reproducible results: In addition to the verbal description of their findings given in the paper, we encouraged the authors to provide a proof of their claims in electronic form. If the paper claimed experimental results, we asked the authors to make available to the community all the input data necessary to verify and reproduce these results; if it claimed to introduce an algorithm, we encourage the authors to make the algorithm itself, in a programming language, available to the public. This additional electronic material will be permanently stored on the CICLing's server, www.CICLing.org, and will be available to the readers of the corresponding paper for download under a license that permits its free use for research purposes.

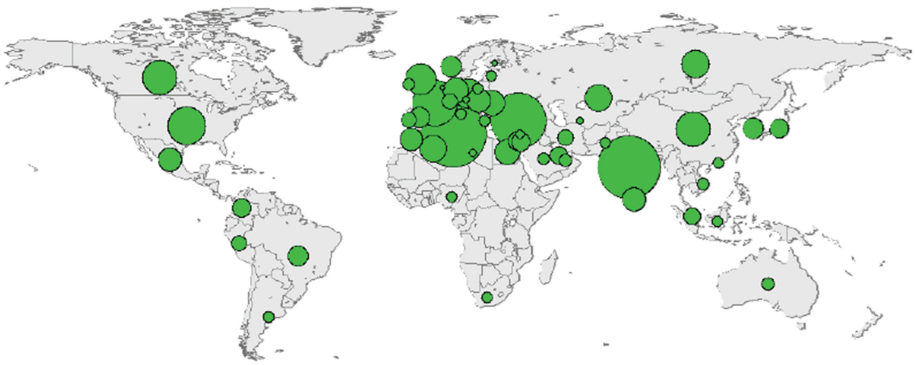

Fig. 1. Submissions by country or region. The area of a circle represents the number of submitted papers

In the long run, we expect that computational linguistics will have verifiability and clarity standards similar to those of mathematics: In mathematics, each claim is accompanied by a complete and verifiable proof, usually much longer than the claim itself; each theorem's complete and precise proof—and not just a description of its general idea—is made available to the reader. Electronic media allow computational linguists to provide material analogous to the proofs and formulas in mathematic in full length—which can amount to megabytes or gigabytes of data—separately from a 12-page description published in the book. More information can be found on http://www.CICLing.org/why_verify.htm.

To encourage providing algorithms and data along with the published papers, we selected three winners of our Verifiability, Reproducibility, and Working Description Award. The main factors in choosing the awarded submission were technical correctness and completeness, readability of the code and documentation, simplicity of installation and use, and exact correspondence to the claims of the paper. Unnecessary sophistication of the user interface was discouraged; novelty and usefulness of the results were not evaluated—instead, they were evaluated for the paper itself and not for the data.

The following papers received the Best Paper Awards, the Best Student Paper Award, as well as the Verifiability, Reproducibility, and Working Description Awards, respectively:

Best Paper 1st Place:	"Mining the Web for Collocations: IR Models of Term Associations," by Rakesh Verma, Vasanthi Vuppuluri, An Nguyen, Arjun Mukherjee, Ghita Mammar, Shahryar Baki, and Reed Armstrong, USA "Extracting Aspect Specific Sentiment Expressions Implying Negative Opinions," by Arjun Mukherjee, USA
Best Paper 2nd Place:	"Word Sense Disambiguation Using Swarm Intelligence: A Bee Colony Optimization Approach," by Saket Kumar and Omar El Ariss, USA

Best Paper 3rd Place:	"Corpus Frequency and Affix Ordering in Turkish," by Mustafa Aksan, Umut Ufuk Demirhan, and Yeşim Aksan, Turkey
Best Student Paper[1]:	"Generating Bags of Words from the Sums of Their Word Embeddings," by Lyndon White, Roberto Togneri, Wei Liu, and Mohammed Bennamoun, Australia
Verifiability 1st Place:	"Pluralizing Nouns in isiZulu and Related Languages," by Joan Byamugisha, C. Maria Keet, and Langa Khumalo, South Africa
Verifiability 2nd Place:	"A Free/Open-Source Hybrid Morphological Disambiguation Tool for Kazakh,"[2] by Zhenisbek Assylbekov, Jonathan North Washington, Francis Tyers, Assulan Nurkas, Aida Sundetova, Aidana Karibayeva, Balzhan Abduali, and Dina Amirova, Kazakhstan, USA, and Norway
Verifiability 3rd Place:	"An Informativeness Approach to Open IE Evaluation," by William Léchelle and Philippe Langlais, Canada

The authors of the awarded papers (except for the Verifiability Award) were given extended time for their presentations. In addition, the Best Presentation Award and the Best Poster Award winners were selected by a ballot among the attendees of the conference.

Besides its high scientific level, one of the success factors of the CICLing conferences is their excellent cultural program in which all attendees participate. The cultural program is a very important part of the conference, serving its main purpose: personal interaction and making friends and contacts. The attendees of the conference had a chance to visit the Tinaztepe Cavern and nearby attractions; the Underground City and the amazing Cappadocia landscape, probably the most astonishing natural landscape I have seen so far; as well as the attractions and historial monuments of the city of Konya, the ancient capital of the Seljuk Sultanate of Rum and the Karamanids.

The conference was accompanied by two satellite events: the Second International Conference on Arabic Computational Linguistics, ACLing 2016, and the First International Conference on Turkic Computational Linguistics, TurCLing 2016, both founded by CICLing. This is in accordance with CICLing's mission to promote consolidation of emerging NLP communities in countries and regions underrepresented in the mainstream of NLP research and, in particular, in the mainstream publication venues. The Program Committees of ACLing 2016 and TurCLing 2016 have helped the CICLing 2016 committee in evaluation of a number of submissions on the corresponding narrow topics.

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[1] The best student paper was selected among papers of which the first author was a full-time student, excluding the papers that received Best Paper Awards.

[2] This paper is published in the proceedings of a satellite event of the conference and not in this book set.

I would like to thank all those involved in the organization of this conference. In the first place, the authors of the papers that constitute this book: It is the excellence of their research work that gives value to the book and meaning to the work of all other people. I thank all those who served on the Program Committee of CICLing 2016, the Second International Conference on Arabic Computational Linguistics, ACLing 2016, and the First International Conference on Turkic Computational Linguistics, TurCLing 2016; the Software Reviewing Committee, the Award Selection Committee, as well as additional reviewers, for their hard and very professional work. Special thanks go to Ted Pedersen, Manuel Vilares Ferro, and Soujanya Poria for their invaluable support in the reviewing process.

I also want to cordially thank the conference staff, volunteers, and the members of the local Organizing Committee headed by Hatem Haddad, as well as the organizers of the satellite events, Samhaa R. El-Beltagy of Nile University, Egypt, Khaled Shaalan of the British University in Dubai, UAE, and Bahar Karaoglan of Ege University, Turkey. I am deeply grateful to the administration of the Mevlana University for their helpful support, warm hospitality, and in general for providing this wonderful opportunity of holding CICLing in Turkey. I acknowledge support from the project CONACYT Mexico–DST India 122030 "Answer Validation Through Textual Entailment" and SIP-IPN grant 20161958.

The entire submission and reviewing process was supported for free by the EasyChair system (www.EasyChair.org). Last but not least, I deeply appreciate the Springer team's patience and help in editing these volumes and getting them printed in very short time—it is always a great pleasure to work with Springer.

December 2016 Alexander Gelbukh

Organization

CICLing 2016 was hosted by the Mevlana University, Turkey, and was organized by the CICLing 2016 Organizing Committee in conjunction with the Mevlana University, the Natural Language and Text Processing Laboratory of the Centro de Investigación en Computación (CIC) of the Instituto Politécnico Nacional (IPN), Mexico, and the Mexican Society of Artificial Intelligence (SMIA).

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