

WASSA 2013

**4th Workshop on Computational Approaches to  
Subjectivity, Sentiment and Social Media Analysis**

**Proceedings of the Workshop**

14 June 2013  
Atlanta, Georgia, U.S.A.

Endorsed by SIGNLL (ACL's Special Interest Group on Natural Language Learning)  
Endorsed by SIGANN, the ACL Special Interest Group for Annotation  
Sponsored by the Academic Institute for Research in Computer Science (Instituto Universitario de Investigación Informática), University of Alicante, Spain

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## Introduction

Research in automatic Subjectivity and Sentiment Analysis, as subtasks in Affective Computing within the Artificial Intelligence field of Natural Language Processing (NLP), has flourished in the past years. The growth in interest in these tasks was motivated by the birth and rapid expansion of the Social Web that made it possible for people all over the world to share, comment or consult content on any given topic. In this context, opinions, sentiments and emotions expressed in Social Media texts have been shown to have a high influence on the social and economic behaviour worldwide.

The aim of the 4th Workshop on Computational Approaches to Subjectivity, Sentiment and Social Media Analysis (WASSA 2013) was to continue the line of the previous three editions, bringing together researchers in Computational Linguistics working on Subjectivity and Sentiment Analysis and researchers working on interdisciplinary aspects of affect computation from text. Additionally, this year, we extended the focus to Social Media phenomena and the impact of affect-related phenomena in this context. WASSA 2013 was organized in conjunction to the 2013 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, on June 14, 2013, in Atlanta, Georgia, United States of America.

At this fourth edition of the workshop, we received a total of 29 submissions, from a wide range of countries, of which 8 were accepted as long and another 8 as short papers. Each paper has been thoroughly reviewed by 2 members of the Program Committee. The accepted papers were all highly assessed by the reviewers, the best paper receiving an average punctuation (computed as an average of all criteria used to assess the papers) of 4.75 out of 5.

The main topics of the accepted papers are related to affect in Social Media - the creation and evaluation of resources for subjectivity, sentiment and emotion in social media, cross-lingual and multilingual resource creation and use, the detection of sarcasm and spam and the detection of illegal activities in digital social settings.

The invited talks reflected the multimodal and interdisciplinary nature of the research in affect-related phenomena, from topics related to multimodal methods for emotion detection, theories of emotion and applications of emotion detection in Social Media.

This year's edition has shown again that the topics addressed by WASSA are of high interest to the research community and that the contributions presented in this forum bring an important development both to the theoretical, as well as to the application-oriented scenarios.

We would like to thank the NAACL-HLT 2013 Organizers for the help and support at the different stages of the workshop organization process. We are also especially grateful to the Program Committee members and the external reviewers for the time and effort spent assessing the papers. We would like to extend our thanks to our invited speakers – Prof. Rosalind Picard, Prof. Jonathan Gratch and Dr. Theresa Wilson, for accepting to deliver the keynote talks.

Secondly, we would like to express our gratitude for the official endorsement we received from SIGNLL (the ACL Special Interest Group on Natural Language Learning) and SIGANN, the ACL Special Interest Group for Annotation.

Further on, we would like to thank the Editors of the “Information Processing and Management”, published by Elsevier, for accepting to organize a Special Issue of this journal containing the extended versions of the best full papers accepted at WASSA 2013.

We would like to express our gratitude to Yaniv Steiner, who created the WASSA logo and to the entire OPTIMA action team at the European Commission Joint Research Centre, for the technical support they provided.

Last, but not least, we are grateful for the financial support given by the Academic Institute for Research in Computer Science of the University of Alicante (Instituto Universitario para la Investigación en Informática, Universidad de Alicante).

**Alexandra Balahur, Erik van der Goot and Andrés Montoyo**  
**WASSA 2013 Chairs**

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Michael Wiegand, Saarland University (Germany)  
Theresa Wilson, John Hopkins University (U.S.A.)  
Taras Zagibalov, Brantwatch (U.K.)

**Invited Speakers:**

Prof. Dr. Jonathan Gratch, University of South California (U.S.A.)  
Prof. Dr. Rosalind Picard, MIT Media Laboratory (U.S.A.)  
Dr. Theresa Wilson, John Hopkins University (U.S.A.)

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# Workshop Program

**Friday, June 14, 2013**

8:30–8:40      Opening Remarks

8:40–9:20      Invited talk: Prof. Dr. Rosalind Picard

*Recent adventures with emotion-reading technology*  
Rosalind Picard

## **Session 1: Affect Recognition in Text (I)**

9:20–9:45      *Bootstrapped Learning of Emotion Hashtags #hashtags4you*  
Ashequl Qadir and Ellen Riloff

9:45–10:10    *Fine-Grained Emotion Recognition in Olympic Tweets Based on Human Computation*  
Valentina Sintsova, Claudiu Musat and Pearl Pu

10:10–10:30   *Spanish DAL: A Spanish Dictionary of Affect in Language*  
Matías Dell’ Amerlina Ríos and Agustin Gravano

10:30–11:00   Break

11:00–11:40   Invited talk: Prof. Dr. Jonathan Gratch

## **Session 2: Affect Recognition in Text (II)**

11:40–12:05   *The perfect solution for detecting sarcasm in tweets #not*  
Christine Liebrecht, Florian Kunneman and Antal Van den Bosch

12:05–12:30   *Using PU-Learning to Detect Deceptive Opinion Spam*  
Donato Hernández, Rafael Guzmán, Manuel Montes y Gomez and Paolo Rosso

12:30–12:55   *Sexual predator detection in chats with chained classifiers*  
Hugo Jair Escalante, Esaú Villatoro-Tello, Antonio Juárez, Manuel Montes-y-Gómez and Luis Villaseñor

12:55–14:00   Lunch Break

**Friday, June 14, 2013 (continued)**

14:00–14:40 Invited talk: Dr. Theresa Wilson

**Session 3: Multilinguality in Social Media**

14:40–15:05 *Subjectivity and Sentiment Analysis of Modern Standard Arabic and Arabic Microblogs*  
Ahmed Mourad and Kareem Darwish

15:05–15:30 *Sentiment Analysis in Czech Social Media Using Supervised Machine Learning*  
Ivan Habernal, Tomáš Ptáček and Josef Steinberger

15:30–16:00 Break

**Session 4: Subjectivity, Sentiment and Social Media Analysis (I)**

16:00–16:15 *Tagging Opinion Phrases and their Targets in User Generated Textual Reviews*  
Narendra Gupta

16:15–16:30 *From newspaper to microblogging: What does it take to find opinions?*  
Wladimir Sidorenko, Jonathan Sonntag, Nina Krüger, Stefan Stieglitz and Manfred Stede

16:30–16:45 *Bilingual Experiments on an Opinion Comparable Corpus*  
Eugenio Martínez-Cámara, M. Teresa Martín-Valdivia, M. Dolores Molina-González and L. Alfonso Ureña-López

16:45–17:00 *RA-SR: Using a ranking algorithm to automatically building resources for subjectivity analysis over annotated corpora*  
Yoan Gutiérrez, Andy González, Antonio Fernández, Andrés Montoyo and Rafael Muñoz

17:00–17:15 Break

**Friday, June 14, 2013 (continued)**

**Session 5: Subjectivity, Sentiment and Social Media Analysis (II)**

- 17:15–17:30 *Sentiment analysis on Italian tweets*  
Valerio Basile and malvina nissim
- 17:30–17:45 *Sentence-Level Subjectivity Detection Using Neuro-Fuzzy Models*  
Samir Rustamov, Elshan Mustafayev and Mark Clements
- 17:45–18:00 *Sentiment Classification using Rough Set based Hybrid Feature Selection*  
Basant Agarwal and Namita Mittal
- 18:00–18:15 *Sentiment Analysis in Social Media Texts*  
Alexandra Balahur
- 18:15–18:30 Closing remarks

