

# **7th International Workshop on Semantic Evaluation**

## **(SemEval 2013)**

**Held with SEM 2013**

**Atlanta, Georgia, USA**  
**14 – 15 June 2013**

**ISBN: 978-1-63439-627-1**

**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© (2013) by the Association for Computational Linguistics  
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Association for Computational Linguistics  
at the address below.

Association for Computational Linguistics  
209 N. Eighth Street  
Stroudsburg, Pennsylvania 18360

Phone: 1-570-476-8006  
Fax: 1-570-476-0860

[acl@aclweb.org](mailto:acl@aclweb.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## Table of Contents

<i>SemEval-2013 Task 1: TempEval-3: Evaluating Time Expressions, Events, and Temporal Relations</i>	
Naushad UzZaman, Hector Llorens, Leon Derczynski, James Allen, Marc Verhagen and James Pustejovsky .....	1
<i>ClearTK-TimeML: A minimalist approach to TempEval 2013</i>	
Steven Bethard .....	10
<i>HeidelTime: Tuning English and Developing Spanish Resources for TempEval-3</i>	
Jannik Strötgen, Julian Zell and Michael Gertz .....	15
<i>ATT1: Temporal Annotation Using Big Windows and Rich Syntactic and Semantic Features</i>	
Hyuckchul Jung and Amanda Stent .....	20
<i>Semeval-2013 Task 8: Cross-lingual Textual Entailment for Content Synchronization</i>	
Matteo Negri, Alessandro Marchetti, Yashar Mehdad, Luisa Bentivogli and Danilo Giampiccolo .....	25
<i>SOFTCARDINALITY: Learning to Identify Directional Cross-Lingual Entailment from Cardinalities and SMT</i>	
Sergio Jimenez, Claudia Becerra and Alexander Gelbukh .....	34
<i>SemEval-2013 Task 5: Evaluating Phrasal Semantics</i>	
Ioannis Korkontzelos, Torsten Zesch, Fabio Massimo Zanzotto and Chris Biemann .....	39
<i>HsH: Estimating Semantic Similarity of Words and Short Phrases with Frequency Normalized Distance Measures</i>	
Christian Wartena .....	48
<i>ManTIME: Temporal expression identification and normalization in the TempEval-3 challenge</i>	
Michele Filannino, Gavin Brown and Goran Nenadic .....	53
<i>FSS-TimEx for TempEval-3: Extracting Temporal Information from Text</i>	
Vanni Zavarella and Hristo Tanev .....	58
<i>JU-CSE: A CRF Based Approach to Annotation of Temporal Expression, Event and Temporal Relations</i>	
Anup Kumar Kolya, Amitava Kundu, Rajdeep Gupta, Asif Ekbal, Sivaji Bandyopadhyay .....	64
<i>NavyTime: Event and Time Ordering from Raw Text</i>	
Nate Chambers .....	73
<i>SUTime: Evaluation in TempEval-3</i>	
Angel Chang and Christopher D. Manning .....	78
<i>KUL: Data-driven Approach to Temporal Parsing of Newswire Articles</i>	
Oleksandr Kolomiyets and Marie-Francine Moens .....	83

<i>UTTime: Temporal Relation Classification using Deep Syntactic Features</i>	88
Natsuda Laokulrat, Makoto Miwa, Yoshimasa Tsuruoka and Takashi Chikayama .....	88
<i>UMCC_DLSI-(EPS): Paraphrases Detection Based on Semantic Distance</i>	93
Héctor Dávila, Antonio Fernández Orquín, Alexander Chávez, Yoan Gutiérrez, Armando Collazo, José I. Abreu, Andrés Montoyo and Rafael Muñoz.....	93
<i>MELODI: Semantic Similarity of Words and Compositional Phrases using Latent Vector Weighting</i>	98
Tim Van de Cruys, Stergos Afantinos and Philippe Muller.....	98
<i>IIRG: A Naïve Approach to Evaluating Phrasal Semantics</i>	103
Lorna Byrne, Caroline Fenlon and John Dunnion .....	103
<i>ClaC: Semantic Relatedness of Words and Phrases</i>	108
Reda Siblini and Leila Kosseim .....	108
<i>UNAL: Discriminating between Literal and Figurative Phrasal Usage Using Distributional Statistics and POS tags</i>	114
Sergio Jimenez, Claudia Becerra and Alexander Gelbukh.....	114
<i>ECNUCS: Recognizing Cross-lingual Textual Entailment Using Multiple Text Similarity and Text Difference Measures</i>	118
Jiang Zhao, Man Lan and Zheng-Yu Niu .....	118
<i>BUAP: N-gram based Feature Evaluation for the Cross-Lingual Textual Entailment Task</i>	124
Darnes Vilariño, David Pinto, Saul León, Yuridiana Aleman and Helena Gómez .....	124
<i>ALTN: Word Alignment Features for Cross-lingual Textual Entailment</i>	128
Marco Turchi and Matteo Negri .....	128
<i>Umelb: Cross-lingual Textual Entailment with Word Alignment and String Similarity Features</i>	133
Yvette Graham, Bahar Salehi and Timothy Baldwin.....	133
<i>SemEval-2013 Task 4: Free Paraphrases of Noun Compounds</i>	138
Iris Hendrickx, Zornitsa Kozareva, Preslav Nakov, Diarmuid Ó Séaghdha, Stan Szpakowicz and Tony Veale .....	138
<i>MELODI: A Supervised Distributional Approach for Free Paraphrasing of Noun Compounds</i>	144
Tim Van de Cruys, Stergos Afantinos and Philippe Muller.....	144
<i>SFS-TUE: Compound Paraphrasing with a Language Model and Discriminative Reranking</i>	148
Yannick Versley .....	148
<i>IIT-H: A Corpus-Driven Co-occurrence Based Probabilistic Model for Noun Compound Paraphrasing</i>	153
Nitesh Surtani, Arpita Batra, Urmī Ghosh and Soma Paul.....	153
<i>SemEval-2013 Task 10: Cross-lingual Word Sense Disambiguation</i>	158
Els Lefever and Véronique Hoste .....	158

<i>XLING: Matching Query Sentences to a Parallel Corpus using Topic Models for WSD</i>	167
Liling Tan and Francis Bond .....	
<i>HLTDI: CL-WSD Using Markov Random Fields for SemEval-2013 Task 10</i>	171
Alex Rudnick, Can Liu and Michael Gasser .....	
<i>LIMSI : Cross-lingual Word Sense Disambiguation using Translation Sense Clustering</i>	178
Marianna Apidianaki .....	
<i>WSD2: Parameter optimisation for Memory-based Cross-Lingual Word-Sense Disambiguation</i>	183
Maarten van Gompel and Antal van den Bosch .....	
<i>NRC: A Machine Translation Approach to Cross-Lingual Word Sense Disambiguation (SemEval-2013 Task 10)</i>	188
Marine Carpuat .....	
<i>SemEval-2013 Task 11: Word Sense Induction and Disambiguation within an End-User Application</i>	193
Roberto Navigli and Daniele Vannella .....	
<i>Duluth : Word Sense Induction Applied to Web Page Clustering</i>	202
Ted Pedersen .....	
<i>SATTY : Word Sense Induction Application in Web Search Clustering</i>	207
Satyabrata Behera, Upasana Gaikwad, Ramakrishna Bairi and Ganesh Ramakrishnan .....	
<i>UKP-WSI: UKP Lab Semeval-2013 Task 11 System Description</i>	212
Hans-Peter Zorn and Iryna Gurevych .....	
<i>unimelb: Topic Modelling-based Word Sense Induction for Web Snippet Clustering</i>	217
Jey Han Lau, Paul Cook and Timothy Baldwin .....	
<i>SemEval-2013 Task 12: Multilingual Word Sense Disambiguation</i>	222
Roberto Navigli, David Jurgens and Daniele Vannella .....	
<i>GETALP System : Propagation of a Lesk Measure through an Ant Colony Algorithm</i>	232
Didier Schwab, Andon Tchechmedjiev, Jérôme Goulian, Mohammad Nasiruddin, Gilles Sérasset and Hervé Blanchon .....	
<i>UMCC_DLSI: Reinforcing a Ranking Algorithm with Sense Frequencies and Multidimensional Semantic Resources to solve Multilingual Word Sense Disambiguation</i>	241
Yoan Gutiérrez, Yenier Castañeda, Andy González, Rainel Estrada, Dennys D. Piug, Jose I. Abreu, Roger Pérez, Antonio Fernández Orquín, Andrés Montoyo, Rafael Muñoz and Franc Camara .....	
<i>DAEBAK!: Peripheral Diversity for Multilingual Word Sense Disambiguation</i>	250
Steve L. Manion, and Raazesh Sainudiin .....	
<i>SemEval-2013 Task 3: Spatial Role Labeling</i>	255
Oleksandr Kolomiyets, Parisa Kordjamshidi, Marie-Francine Moens and Steven Bethard .....	

<i>SemEval-2013 Task 7: The Joint Student Response Analysis and 8th Recognizing Textual Entailment Challenge</i>	
Myroslava Dzikovska, Rodney Nielsen, Chris Brew, Claudia Leacock, Danilo Giampiccolo, Luisa Bentivogli, Peter Clark, Ido Dagan and Hoa Trang Dang .....	263
<i>ETS: Domain Adaptation and Stacking for Short Answer Scoring</i>	
Michael Heilman and Nitin Madnani .....	275
<i>SOFTCARDINALITY: Hierarchical Text Overlap for Student Response Analysis</i>	
Sergio Jimenez, Claudia Becerra and Alexander Gelbukh.....	280
<i>UKP-BIU: Similarity and Entailment Metrics for Student Response Analysis</i>	
Omer Levy, Torsten Zesch, Ido Dagan and Iryna Gurevych .....	285
<i>SemEval-2013 Task 13: Word Sense Induction for Graded and Non-Graded Senses</i>	
David Jurgens and Ioannis Klapaftis.....	290
<i>AI-KU: Using Substitute Vectors and Co-Occurrence Modeling For Word Sense Induction and Disambiguation</i>	
Osman Baskaya, Enis Sert, Volkan Cirik and Deniz Yuret .....	300
<i>unimelb: Topic Modelling-based Word Sense Induction</i>	
Jey Han Lau, Paul Cook and Timothy Baldwin .....	307
<i>SemEval-2013 Task 2: Sentiment Analysis in Twitter</i>	
Preslav Nakov, Sara Rosenthal, Zornitsa Kozareva, Veselin Stoyanov, Alan Ritter and Theresa Wilson .....	312
<i>NRC-Canada: Building the State-of-the-Art in Sentiment Analysis of Tweets</i>	
Saif Mohammad, Svetlana Kiritchenko and Xiaodan Zhu .....	321
<i>GU-MLT-LT: Sentiment Analysis of Short Messages using Linguistic Features and Stochastic Gradient Descent</i>	
Tobias Günther and Lenz Furrer .....	328
<i>AVAYA: Sentiment Analysis on Twitter with Self-Training and Polarity Lexicon Expansion</i>	
Lee Becker, George Erhart, David Skiba and Valentine Matula .....	333
<i>SemEval-2013 Task 9 : Extraction of Drug-Drug Interactions from Biomedical Texts (DDIExtraction 2013)</i>	
Isabel Segura-Bedmar, Paloma Martínez and María Herrero Zazo .....	341
<i>FBK-irst : A Multi-Phase Kernel Based Approach for Drug-Drug Interaction Detection and Classification that Exploits Linguistic Information</i>	
Md. Faisal Mahbub Chowdhury and Alberto Lavelli .....	351
<i>WBI-NER: The impact of domain-specific features on the performance of identifying and classifying mentions of drugs</i>	
Tim Rocktäschel, Torsten Huber, Michael Weidlich and Ulf Leser .....	356

<i>AMI&amp;ERIC: How to Learn with Naive Bayes and Prior Knowledge: an Application to Sentiment Analysis</i>	
Mohamed Dermouche, Leila Khouas, Julien Velcin and Sabine Loudcher . . . . .	364
<i>UNITOR: Combining Syntactic and Semantic Kernels for Twitter Sentiment Analysis</i>	
Giuseppe Castellucci, Simone Filice, Danilo Croce and Roberto Basili . . . . .	369
<i>TJP: Using Twitter to Analyze the Polarity of Contexts</i>	
Tawunrat Chalothorn and Jeremy Ellman . . . . .	375
<i>uOttawa: System description for SemEval 2013 Task 2 Sentiment Analysis in Twitter</i>	
Hamid Poursepanj, Josh Weissbock and Diana Inkpen . . . . .	380
<i>UT-DB: An Experimental Study on Sentiment Analysis in Twitter</i>	
Zhemin Zhu, Djoerd Hiemstra, Peter Apers and Andreas Wombacher . . . . .	384
<i>USNA: A Dual-Classifier Approach to Contextual Sentiment Analysis</i>	
Ganesh Harihara, Eugene Yang and Nate Chambers . . . . .	390
<i>KLUE: Simple and robust methods for polarity classification</i>	
Thomas Proisl, Paul Greiner, Stefan Evert and Besim Kabashi . . . . .	395
<i>SINAI: Machine Learning and Emotion of the Crowd for Sentiment Analysis in Microblogs</i>	
Eugenio Martínez-Cámara, Arturo Montejo-Ráez, M. Teresa Martín-Valdivia and L. Alfonso Ureña-López . . . . .	402
<i>ECNUCS: A Surface Information Based System Description of Sentiment Analysis in Twitter in the SemEval-2013 (Task 2)</i>	
Zhu Tiantian, Zhang Fangxi and Man Lan . . . . .	408
<i>Umigon: sentiment analysis for tweets based on terms lists and heuristics</i>	
Clement Levallois . . . . .	414
<i>[LVIC-LIMSI]: Using Syntactic Features and Multi-polarity Words for Sentiment Analysis in Twitter</i>	
Morgane Marchand, Alexandru Ginsca, Romaric Besançon and Olivier Mesnard . . . . .	418
<i>SwatCS: Combining simple classifiers with estimated accuracy</i>	
Sam Clark and Rich Wicentwoski . . . . .	425
<i>NTNU: Domain Semi-Independent Short Message Sentiment Classification</i>	
Øyvind Selmer, Mikael Brevik, Björn Gambäck and Lars Bungum . . . . .	430
<i>SAIL: A hybrid approach to sentiment analysis</i>	
Nikolaos Malandrakis, Abe Kazemzadeh, Alexandros Potamianos and Shrikanth Narayanan .	438
<i>UMCC_DLSI-(SA): Using a ranking algorithm and informal features to solve Sentiment Analysis in Twitter</i>	
Yoan Gutiérrez, Andy González, Roger Pérez, José I. Abreu, Antonio Fernández Orquín, Alejandro Mosquera, Andrés Montoyo, Rafael Muñoz and Franc Camara . . . . .	443

<i>ASVUniOfLeipzig: Sentiment Analysis in Twitter using Data-driven Machine Learning Techniques</i>	450
Robert Remus .....	
<i>Experiments with DBpedia, WordNet and SentiWordNet as resources for sentiment analysis in micro-blogging</i>	455
Hussam Hamdan, Frederic Béchet and Patrice Bellot .....	
<i>OPTWIMA: Comparing Knowledge-rich and Knowledge-poor Approaches for Sentiment Analysis in Short Informal Texts</i>	460
Alexandra Balahur .....	
<i>FBK: Sentiment Analysis in Twitter with Tweetsted</i>	466
Md. Faisal Mahbub Chowdhury, Marco Guerini, Sara Tonelli and Alberto Lavelli .....	
<i>SU-Sentilab : A Classification System for Sentiment Analysis in Twitter</i>	471
Gizem Gezici, Rahim Dehkharghani, Berrin Yanikoglu, Dilek Tapucu and Yucel Saygin .....	
<i>Columbia NLP: Sentiment Detection of Subjective Phrases in Social Media</i>	478
Sara Rosenthal and Kathy McKeown .....	
<i>FBM: Combining lexicon-based ML and heuristics for Social Media Polarities</i>	483
Carlos Rodriguez-Penagos, Jordi Atserias Batalla, Joan Codina-Filbà, David García-Narbona, Jens Grivolla, Patrik Lambert and Roser Saurí .....	
<i>REACTION: A naive machine learning approach for sentiment classification</i>	490
Silvio Moreira, João Filgueiras, Bruno Martins, Francisco Couto and Mário J. Silva .....	
<i>IITB-Sentiment-Analysts: Participation in Sentiment Analysis in Twitter SemEval 2013 Task</i>	495
Karan Chawla, Ankit Ramteke and Pushpak Bhattacharyya .....	
<i>SSA-UO: Unsupervised Sentiment Analysis in Twitter</i>	501
Reynier Ortega Bueno, Adrian Fonseca Bruzón, Yoan Gutiérrez and Andres Montoyo .....	
<i>senti.ue-en: an approach for informally written short texts in SemEval-2013 Sentiment Analysis task</i>	508
José Saias and Hilário Fernandes .....	
<i>teragram: Rule-based detection of sentiment phrases using SAS Sentiment Analysis</i>	513
Hilke Reckman, Cheyanne Baird, Jean Crawford, Richard Crowell, Linnea Micciulla, Saratendu Sethi and Fruzsina Veress .....	
<i>CodeX: Combining an SVM Classifier and Character N-gram Language Models for Sentiment Analysis on Twitter Text</i>	520
Qi Han, Junfei Guo and Hinrich Schuetze .....	
<i>sielers : Feature Analysis and Polarity Classification of Expressions from Twitter and SMS Data</i>	525
Harshit Jain, Aditya Mogadala and Vasudeva Varma .....	
<i>Kea: Expression-level Sentiment Analysis from Twitter Data</i>	530
Ameeta Agrawal and Aijun An .....	

<i>UoM: Using Explicit Semantic Analysis for Classifying Sentiments</i>	535
Sapna Negi and Michael Rosner .....	
<i>bwbaugh : Hierarchical sentiment analysis with partial self-training</i>	539
Wesley Baugh.....	
<i>Serendio: Simple and Practical lexicon based approach to Sentiment Analysis</i>	543
Prabu palanisamy, Vineet Yadav and Harsha Elchuri .....	
<i>SZTE-NLP: Sentiment Detection on Twitter Messages</i>	549
Viktor Hangya, Gabor Berend and Richárd Farkas .....	
<i>BOUNCE: Sentiment Classification in Twitter using Rich Feature Sets</i>	554
Nadin Kökciyan, Arda Çelebi, Arzucan Özgür and Suzan Üsküdarlı .....	
<i>nlp.cs.aueb.gr: Two Stage Sentiment Analysis</i>	562
Prodromos Malakasiotis, Rafael Michael Karampatsis, Konstantina Makrynioti and John Pavlopoulos.....	
<i>NILC_USP: A Hybrid System for Sentiment Analysis in Twitter Messages</i>	568
Pedro Balage Filho and Thiago Pardo .....	
<i>UNITOR-HMM-TK: Structured Kernel-based learning for Spatial Role Labeling</i>	573
Emanuele Bastianelli, Danilo Croce, Roberto Basili and Daniele Nardi .....	
<i>EHU-ALM: Similarity-Feature Based Approach for Student Response Analysis</i>	580
Itziar Aldabe, Montse Maritxalar and Oier Lopez de Lacalle .....	
<i>CNGL: Grading Student Answers by Acts of Translation</i>	585
Ergun Bicici and Josef van Genabith .....	
<i>Celi: EDITS and Generic Text Pair Classification</i>	592
Milen Kouylekov, Luca Dini, Alessio Bosca and Marco Trevisan .....	
<i>LIMSHILES: Basic English Substitution for Student Answer Assessment at SemEval 2013</i>	598
Martin Gleize and Brigitte Grau.....	
<i>CU : Computational Assessment of Short Free Text Answers - A Tool for Evaluating Students' Understanding</i>	603
IFEYINWA OKOYE, Steven Bethard and Tamara Sumner.....	
<i>CoMet: Integrating different levels of linguistic modeling for meaning assessment</i>	608
Niels Ott, Ramon Ziai, Michael Hahn and Detmar Meurers .....	
<i>UC3M: A kernel-based approach to identify and classify DDIs in bio-medical texts.</i>	617
Daniel Sanchez-Cisneros .....	
<i>UEM-UC3M: An Ontology-based named entity recognition system for biomedical texts.</i>	622
Daniel Sanchez-Cisneros and Fernando Aparicio Gali .....	

<i>WBI-DDI: Drug-Drug Interaction Extraction using Majority Voting</i>	628
Philippe Thomas, Mariana Neves, Tim Rocktäschel and Ulf Leser .....	
<i>UMCC_DLSI: Semantic and Lexical features for detection and classification Drugs in biomedical texts</i>	636
Armando Collazo, Alberto Ceballo, Dennys D. Puig, Yoan Gutiérrez, José I. Abreu, Roger Pérez, Antonio Fernández Orquín, Andrés Montoyo, Rafael Muñoz and Franc Camara .....	
<i>NIL_UCM: Extracting Drug-Drug interactions from text through combination of sequence and tree kernels</i>	644
Behrouz Bokharaeian and ALBERTO DIAZ .....	
<i>UTurku: Drug Named Entity Recognition and Drug-Drug Interaction Extraction Using SVM Classification and Domain Knowledge</i>	651
Jari Björne, Suwisa Kaewphan and Tapio Salakoski .....	
<i>LASIGE: using Conditional Random Fields and ChEBI ontology</i>	660
Tiago Grego, Francisco Pinto and Francisco M Couto .....	
<i>UWM-TRIADS: Classifying Drug-Drug Interactions with Two-Stage SVM and Post-Processing</i>	667
Majid Rastegar-Mojarad, Richard D. Boyce and Rashmi Prasad .....	
<i>SCAI: Extracting drug-drug interactions using a rich feature vector</i>	675
Tamara Bobic, Juliane Fluck and Martin Hofmann-Apitius .....	
<i>UColorado_SOM: Extraction of Drug-Drug Interactions from Biomedical Text using Knowledge-rich and Knowledge-poor Features</i>	684
Negacy Hailu, Lawrence E. Hunter and K. Bretonnel Cohen .....	
<i>UoS: A Graph-Based System for Graded Word Sense Induction</i>	689
David Hope and Bill Keller.....	