

**Proceedings of**  
**SENSEVAL-3**  
**Third International Workshop on the Evaluation of**  
**Systems for the Semantic Analysis of Text**

**Held in cooperation with ACL 2004**

**25–26 July 2004**  
**Barcelona, Spain**

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SIGLEX

SENSEVAL-3

25-26 July 2004

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**WEBSITE:**

<http://www.senseval.org/senseval3>

## PREFACE

This volume contains papers describing the tasks and participating systems in SENSEVAL-3 – the Third International Workshop on the Evaluation of Systems for the Semantic Analysis of Text. The SENSEVAL-3 workshop is held in conjunction with the Association for Computational Linguistics meeting on July 25-26, 2004 in Barcelona, Spain.

SENSEVAL-3 was very successful. Fourteen different tasks were organized and 55 teams participated with over 160 systems. Tasks included core word sense disambiguation tasks for various languages (Basque, Catalan, Chinese, English, Italian, Romanian, Spanish), and new tasks involving identification of semantic roles, logic forms, multilingual annotations, and subcategorization acquisition.

The papers represent a wide variety of state-of-the-art methods for word sense disambiguation and semantic analysis. Although these proceedings include the descriptions of ALL tasks and systems participating in the evaluation, the papers are all peer-reviewed. We were truly impressed by the high quality of the reviews provided by all the members of the program committee, particularly since deadlines were very tight. The papers have benefited from that expert feedback.

When we first started planning this workshop, we agreed that having a high quality invited speaker was crucial. We thank Kenneth Church not only for his talk, but also for the boost of confidence provided by his quick and enthusiastic acceptance.

We also thank the members of the two panels for providing discussion and insights on 1) applications for WSD and 2) planning Senseval-4.

The evaluation *really* comes down to the organization of the tasks. The task organizers did a supreme job of task design, data creation, and administration, again on strong time constraints.

We are also grateful to the ACL 2004 conference organizers for local organization and the forum. Finally, we most gratefully acknowledge the support of our sponsors, the European Language Resources Association (ELRA), the National Science Foundation (NSF), and the ACL Special Interest Group on the Lexicon (SIGLEX).

Rada Mihalcea and Phil Edmonds  
July 2004

## Table of Contents

<i>The Basque lexical-sample task</i> Eneko Agirre, Itziar Aldabe, Mikel Lersundi, David Martínez, Eli Pociello and Larraitz Uria .....	1
<i>The Senseval-3 Multilingual English-Hindi lexical sample task</i> Timothy Chklovski, Rada Mihalcea, Ted Pedersen and Amruta Purandare.....	5
<i>Senseval-3 task: Automatic labeling of semantic roles</i> Ken Litkowski .....	9
<i>Senseval-3 task: Word Sense Disambiguation of WordNet glosses</i> Ken Litkowski .....	13
<i>The Italian lexical sample task at Senseval-3</i> Bernardo Magnini, Danilo Giampiccolo and Alessandro Vallin.....	17
<i>Senseval-3: The Spanish lexical sample task</i> Lluís Màrquez, Mariona Taulé, Antonia Martí, Núria Artigas, Mar García, Francis Real and Dani Ferrés.....	21
<i>The Senseval-3 English lexical sample task</i> Rada Mihalcea, Timothy Chklovski and Adam Killgariff.....	25
<i>An evaluation exercise for Romanian Word Sense Disambiguation</i> Rada Mihalcea, Vivi Năstase, Timothy Chklovski, Doina Tătar, Dan Tufiş and Florentina Hristea.....	29
<i>WSD for subcategorization acquisition task description</i> Judita Preiss and Anna Korhonen.....	33
<i>A first evaluation of logic form identification systems</i> Vasile Rus .....	37
<i>The English all-words task</i> Benjamin Snyder and Martha Palmer .....	41
<i>The Basque Country University system: English and Basque tasks</i> Eneko Agirre and David Martínez.....	44
<i>The University of Amsterdam at Senseval-3: Semantic roles and Logic forms</i> David Ahn, Sisay Fissaha, Valentin Jijkoun and Maarten De Rijke .....	49
<i>Dependency based logical form transformations</i> Stephen Anthony and Jon Patrick.....	54
<i>Word Sense Disambiguation based on term to term similarity in a context space</i> Javier Artiles, Anselmo Penas and Felisa Verdejo.....	58
<i>Semantic role labelling with similarity-based generalization using EM-based clustering</i> Ulrike Baldewein, Katrin Erk, Sebastian Padó and Detlef Prescher .....	64

<i>The MITRE logical form generation system</i> Samuel Bayer, John Burger, John Greiff and Ben Wellner .....	69
<i>Semantic parsing based on FrameNet</i> Cosmin Adrian Bejan, Alessandro Moschitti, Paul Morărescu, Gabriel Nicolae and Sanda Harabagiu .....	73
<i>The upv-unige-CIAOSENSE WSD system</i> Davide Buscaldi, Paolo Rosso and Francesco Masulli .....	77
<i>The University of Maryland Senseval-3 system descriptions</i> Clara Cabezas, Indrajit Bhattacharya and Philip Resnik .....	83
<i>Augmenting ensemble classification for Word Sense Disambiguation with a kernel PCA model</i> Marine Carpuat, Weifeng Su and Dekai Wu .....	88
<i>The TALP systems for disambiguating WordNet glosses</i> Mauro Castillo, Francis Real, Jordi Asterias and German Rigau .....	93
<i>Multi-component Word Sense Disambiguation</i> Massimiliano Ciaramita and Mark Johnson .....	97
<i>Contextual semantics for WSD</i> Eric Crestan .....	101
<i>UBBNBC WSD system description</i> András Csomai .....	105
<i>GAMBL, genetic algorithm optimization of memory-based WSD</i> Bart Decadt, Véronique Hoste, Walter Daelemans and Antal Van den Bosch .....	108
<i>TALP system for the English lexical sample task</i> Gerard Escudero, Lluís Màrquez and German Rigau .....	113
<i>WSD based on mutual information and syntactic patterns</i> David Fernández-Amorós .....	117
<i>The University of Jaén Word Sense Disambiguation system</i> Manuel García-Vega, Miguel García-Cumbreras, M. Teresa Martín-Valdivia and L. Alfonso Ureña-López .....	121
<i>Finding optimal parameter settings for high performance word sense disambiguation</i> Cristian Grozea .....	125
<i>Senseval automatic labeling of semantic roles using Maximum Entropy models</i> Namhee Kwon, Michael Fleischman and Eduard Hovy .....	129
<i>Simple features for statistical Word Sense Disambiguation</i> Abolfazl Lamjiri, Osama El Demerdash and Leila Kosseim .....	133
<i>Supervised Word Sense Disambiguation with Support Vector Machines and multiple knowledge sources</i> Yoong Keok Lee, Hwee Tou Ng and Tee Kiah Chia .....	137



<i>Explorations in disambiguation using XML text representation</i> Ken Litkowski .....	141
<i>Senseval-3: The Catalan lexical sample task</i> Lluís Màrquez, Mariona Taulé, Antonia Martí, Mar García, Francis Real and Dani Ferrés .....	147
<i>Using automatically acquired predominant senses for Word Sense Disambiguation</i> Diana McCarthy, Rob Koeling, Julie Weeds and John Carroll .....	151
<i>SenseLearner: Minimally supervised Word Sense Disambiguation for all words in open text</i> Rada Mihalcea and Ehsanul Faruque .....	155
<i>Complementarity of lexical and simple syntactic features: The SyntaLex approach to Senseval-3</i> Saif Mohammad and Ted Pedersen .....	159
<i>Senseval-3 logic forms: A system and possible improvements</i> Altaf Mohammed, Dan Moldovan and Paul Parker .....	163
<i>SVM classification of FrameNet semantic roles</i> Dan Moldovan, Roxana Girju, Marian Olteanu and Ovidiu Fortu .....	167
<i>WSD system based on specialized Hidden Markov Model (upv-shmm-eaw)</i> Antonio Molina, Ferran Pla and Encarna Segarra .....	171
<i>Using a Word Sense Disambiguation system for translation disambiguation: the LIA-LIDILEM team experiment</i> Grégoire Moreau de Montcheuil, Marc El-Bèze, Boxing Chen and Olivier Kraif .....	175
<i>Structural semantic interconnection: a knowledge-based approach to Word Sense Disambiguation</i> Roberto Navigli and Paola Velardi .....	179
<i>Semantic role labeling with Boosting, SVMs, Maximum Entropy, SNOW, and Decision Lists</i> Grace Ngai, Dekai Wu, Marine Carpuat, Chi-Shing Wang and Chi-Yung Wang .....	183
<i>Context clustering for Word Sense Disambiguation based on modeling pairwise context similarities</i> Cheng Niu, Wei Li, Rohini K. Srihari, Huifeng Li and L. Crist .....	187
<i>Optimizing feature set for Chinese Word Sense Disambiguation</i> Zheng-Yu Niu, Dong-Hong Ji and Chew-Lim Tan .....	191
<i>LCC's WSD systems for Senseval-3</i> Adrian Novischi, Dan Moldovan, Paul Parker, Adriana Bădulescu and Bob Hauser ..	195
<i>Class-based collocations for Word Sense Disambiguation</i> Tom O'Hara, Rebecca Bruce, Jeff Donner and Janyce Wiebe .....	199

<i>The Duluth lexical sample systems in Senseval-3</i>	
Ted Pedersen .....	203
<i>Regularized Least-Squares classification for Word Sense Disambiguation</i>	
Marius Popescu .....	209
<i>Probabilistic WSD in Senseval-3</i>	
Judita Preiss .....	213
<i>A gloss-centered algorithm for disambiguation</i>	
Ganesh Ramakrishnan, B. Prithviraj and Pushpak Bhattacharyya .....	217
<i>KUNLP system in Senseval-3</i>	
Hee-Cheol Seo, Hae-Chang Rim and Soo-Hong Kim .....	222
<i>UBB system at Senseval-3</i>	
Gabriela Șerban and Doina Tătar .....	226
<i>Pattern abstraction and term similarity for Word Sense Disambiguation: IRST at Senseval-3</i>	
Carlo Strapparava, Alfio Gliozzo and Claudiu Giuliano .....	229
<i>Generative models for semantic role labeling</i>	
Cynthia Thompson, Siddharth Patwardhan and Carolin Arnold .....	235
<i>Word Sense Disambiguation by Web mining for word co-occurrence probabilities</i>	
Peter Turney .....	239
<i>The University of Alicante systems at Senseval-3</i>	
Sonia Vázquez, Rafael Romero, Armando Suárez, Andrés Montoyo, Iulia Nica and Antonia Martí .....	243
<i>The R2D2 team at Senseval-3</i>	
Sonia Vázquez, Rafael Romero, Armando Suárez, Andrés Montoyo, Manuel García, M. Teresa Martín, M. Ángel García and L. Alfonso Urena .....	248
<i>The "Meaning" system on the English all-words task</i>	
Luis Villarejo, Lluís Màrquez, Eneko Agirre, David Martínez, Bernardo Magnini, Carlo Strapparava, Diana McCarthy, Andrés Montoyo and Armando Suárez .....	253
<i>The Swarthmore College Senseval-3 system</i>	
Richard Wicentowski, Emily Thomforde and Adrian Packel .....	257
<i>Joining forces to resolve lexical ambiguity: East meets West in Barcelona</i>	
Richard Wicentowski, Grace Ngai, Dekai Wu, Marine Carpuat, Emily Thomforde and Adrian Packel .....	262
<i>Some experiments with a Naive Bayes WSD system</i>	
Deniz Yuret .....	265

# SENSEVAL-3 PROGRAM

**Sunday, July 25**

8:45-9:00 Welcome

## **Session 1 – Word Sense Disambiguation for English - Lexical Sample (I)**

9:00-9:15 *The Senseval-3 English lexical sample task*  
Rada Mihalcea, Timothy Chklovski and Adam Kilgarriff

9:15-9:30 *Pattern abstraction and term similarity for Word Sense Disambiguation: IRST at Senseval-3*  
Carlo Strapparava, Alfio Gliozzo and Claudiu Giuliano

9:30-9:45 *Augmenting ensemble classification for Word Sense Disambiguation with a kernel PCA model*  
Marine Carpuat, Weifeng Su and Dekai Wu

9:45-10:00 *Supervised Word Sense Disambiguation with Support Vector Machines and multiple knowledge sources*  
Yoong Keok Lee, Hwee Tou Ng and Tee Kiah Chia

10:00-10:30 BREAK

## **Session 2 – Word Sense Disambiguation for WordNet Glosses**

10:30-10:45 *The upv-unige-CIAOSENSE WSD system*  
Davide Buscaldi, Paolo Rosso and Francesco Masulli

10:45-11:00 *Structural semantic interconnection: a knowledge-based approach to Word Sense Disambiguation*  
Roberto Navigli and Paola Velardi

11:00-11:15 *LCC's WSD systems for Senseval-3*  
Adrian Novischi, Dan Moldovan, Paul Parker, Adriana Bădulescu and Bob Hauser

11:20-12:10 **Invited talk: KENNETH CHURCH, Microsoft Research**

12:10-13:45 LUNCH

## **Session 3 – Word Sense Disambiguation for English - Lexical Sample (II)**

13:45-14:00 *Multi-component Word Sense Disambiguation*  
Massimiliano Ciaramita and Mark Johnson

14:00-14:15 *Complementarity of lexical and simple syntactic features: The SyntaLex approach to Senseval-3*  
Saif Mohammad and Ted Pedersen

14:15-14:30 *Context clustering for Word Sense Disambiguation based on modeling pairwise context similarities*  
Cheng Niu, Wei Li, Rohini K. Srihari, Huifeng Li and L. Crist

14:30-14:45 *Word Sense Disambiguation by Web mining for word co-occurrence probabilities*  
Peter Turney

14:45-15:00 *The University of Maryland Senseval-3 system descriptions*  
Clara Cabezas, Indrajit Bhattacharya and Philip Resnik

15:00-15:15 *Contextual semantics for WSD*  
Eric Crestan

15:15-15:30 *Class-based collocations for Word Sense Disambiguation*  
Tom O'Hara, Rebecca Bruce, Jeff Donner and Janyce Wiebe

15:30-15:50 BREAK

#### **Session 4 – Logic Form Transformations**

15:50-16:05 *A first evaluation of logic form identification systems*  
Vasile Rus

16:05-16:20 *Dependency based logical form transformations*  
Stephen Anthony and Jon Patrick

16:20-16:35 *Senseval-3 logic forms: A system and possible improvements*  
Altaf Mohammed, Dan Moldovan and Paul Parker

16:35-16:50 *The University of Amsterdam at Senseval-3: Semantic roles and Logic forms*  
David Ahn, Sisay Fissaha, Valentin Jijkoun and Maarten de Rijke

16:50-18:00 **PANEL: Applications of Word Sense Disambiguation**

Phil Edmonds (Sharp Labs) – *moderator*  
Bill Dolan (Microsoft), Dekang Lin (U. Alberta/Google),  
German Rigau (U. Basque Country), Carlo Strapparava (IRST)

**Monday, July 26**

#### **Session 5 – Semantic Role Labeling**

8:45-9:00 *Semantic role labeling with similarity-based generalization using EM-based clustering*  
Ulrike Baldewein, Katrin Erk, Sebastian Padó and Detlef Prescher

9:00-9:15 *Semantic parsing based on FrameNet*  
Cosmin Adrian Bejan, Alessandro Moschitti, Paul Morărescu, Gabriel Nicolae  
and Sanda Harabagiu

9:15-9:30 *Semantic role labeling with Boosting, SVMs, Maximum Entropy, SNOW, and Decision Lists*  
Grace Ngai, Dekai Wu, Marine Carpuat, Chi-Shing Wang and Chi-Yung Wang

9:30-9:45 *SVM classification of FrameNet semantic roles*  
Dan Moldovan, Roxana Gîrju, Marian Olteanu and Ovidiu Fortu

9:45-10:00 *Generative models for semantic role labeling*  
Cynthia Thompson, Siddharth Patwardhan and Carolin Arnold

10:00-10:30 BREAK

#### **Session 6 – POSTERS**

10:30-12:00 *Senseval-3: The Catalan lexical sample task*  
Lluís Màrquez, Mariona Taulé, Antonia Martí, Mar García, Francis Real and Dani Ferrés

*The Italian lexical sample task at Senseval-3*  
Bernardo Magnini, Danilo Giampiccolo and Alessandro Vallin

*Senseval-3: The Spanish lexical sample task*  
Lluís Màrquez, Mariona Taulé, Antonia Martí, Núria Artigas, Mar García,  
Francis Real and Dani Ferrés

- 10:30-12:00 *Senseval-3 task: Automatic labeling of semantic roles*  
*Senseval-3 task: Word Sense Disambiguation of WordNet glosses*  
Ken Litkowski
- WSD for subcategorization acquisition task description*  
Judita Preiss and Anna Korhonen
- The Senseval-3 Multilingual English–Hindi lexical sample task*  
Timothy Chklovski, Rada Mihalcea, Ted Pedersen and Amruta Purandare
- An evaluation exercise for Romanian Word Sense Disambiguation*  
Rada Mihalcea, Vivi Năstase, Timothy Chklovski, Doina Tătar, Dan Tufiş  
and Florentina Hristea
- Senseval-3: The Italian all-words task*  
Marisa Ulivieri, Elisabetta Guazzini, Francesca Bertagna, Nicoletta Calzolari
- Word Sense Disambiguation based on term to term similarity in a context space*  
Javier Artiles, Anselmo Penas and Felisa Verdejo
- The TALP systems for disambiguating WordNet glosses*  
Mauro Castillo, Real Francis, Jordi Asterias and German Rigau
- TALP system for the English lexical sample task*  
Gerard Escudero, Lluís Màrquez and German Rigau
- The University of Alicante systems at Senseval-3*  
Sonia Vázquez, Rafael Romero, Armando Suárez, Andrés Montoyo, Iulia Nica  
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- The R2D2 team at Senseval-3*  
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M. Teresa Martín, M. Ángel García and L. Alfonso Urena
- WSD system based on specialized Hidden Markov Model (upv-shmm-eaw)*  
Antonio Molina, Ferran Pla and Encarna Segarra
- The University of Jaén Word Sense Disambiguation system*  
Manuel García-Vega, Miguel García-Cumbreras, M. Teresa Martín-Valdivia  
and L. Alfonso Urena-López
- Simple features for statistical Word Sense Disambiguation*  
Abolfazl Lamjiri, Osama El Demerdash and Leila Kosseim
- KUNLP system in Senseval-3*  
Hee-Cheol Seo, Hae-Chang Rim and Soo-Hong Kim
- Optimizing feature set for Chinese Word Sense Disambiguation*  
Zheng-Yu Niu, Dong-Hong Ji and Chew-Lim Tan
- Using a Word Sense Disambiguation system for translation disambiguation:  
the LIA-LIDILEM team experiment*  
Grégoire Moreau de Montcheuil, Marc El-Bèze, Boxing Chen and Olivier Kraif
- Joining forces to resolve lexical ambiguity: East meets West in Barcelona*  
Richard Wicentowski, Grace Ngai, Dekai Wu, Marine Carpuat, Emily Thomforde  
and Adrian Packerl

10:30-12:00 *UBBNBC WSD system description*  
András Csomai

*The MITRE logical form generation system*  
Samuel Bayer, John Burger, John Greiff and Ben Wellner

12:00-13:30 LUNCH

### **Session 7 – Word Sense Disambiguation for English – All Words**

13:30-13:45 *The English all-words task*  
Benjamin Snyder and Martha Palmer

13:45-14:00 *GAMBL, genetic algorithm optimization of memory-based WSD*  
Bart Decadt, Véronique Hoste, Walter Daelemans and Antal Van den Bosch

14:00-14:15 *WSD based on mutual information and syntactic patterns*  
David Fernández-Amorós

14:15-14:30 *Using automatically acquired predominant senses for Word Sense Disambiguation*  
Diana McCarthy, Rob Koeling, Julie Weeds and John Carroll

14:30-14:45 *SenseLearner: Minimally supervised Word Sense Disambiguation for all words in open text*  
Rada Mihalcea and Ehsanul Faruque

14:45-15:00 *Some experiments with a Naive Bayes WSD system*  
Deniz Yuret

15:00-15:15 *The "Meaning" system on the English all-words task*  
Luís Villarejo, Lluís Màrquez, Eneko Agirre, David Martínez, Bernardo Magnini,  
Carlo Strapparava, Diana McCarthy, Andrés Montoyo and Armando Suárez

15:15-15:30 *Probabilistic WSD in Senseval-3*  
Judita Preiss

15:30-15:50 BREAK

### **Session 8 – Word Sense Disambiguation for Basque – Lexical Sample**

15:50-16:05 *The Basque lexical-sample task*  
Eneko Agirre, Itziar Aldabe, Mikel Lersundi, David Martínez, Eli Pociello and Larraitz Uria

16:05-16:20 *The Basque Country University system: English and Basque tasks*  
Eneko Agirre and David Martínez

16:20-16:35 *The Swarthmore College Senseval-3 system*  
Richard Wicentowski, Emily Thomforde and Adrian Packer

16:35-16:50 **SIGLEX Meeting**

16:50-18:00 **PANEL: Planning Senseval-4**

Rada Mihalcea (U. North Texas) – *moderator*  
Ido Dagan (Bar Ilan U.), Adam Kilgarriff (U. Brighton), Lluís Marqu岸 (U. Politecnica  
Catalunya), Martha Palmer (U. Pennsylvania), Philip Resnik (U. Maryland)

**Closing remarks**

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## Author Index

- Agirre, Eneko ..... 1, 44, 253  
Ahn, David ..... 49  
Aldabe, Itziar ..... 1  
Anthony, Stephen ..... 54  
Arnold, Carolin ..... 235  
Artigas, Núria ..... 21  
Artiles, Javier ..... 58  
Asterias, Jordi ..... 93  
Baldewein, Ulrike ..... 64  
Bayer, Samuel ..... 69  
Bejan, Cosmin Adrian ..... 73  
Bhattacharya, Indrajit ..... 83  
Bhattacharyya, Pushpak ..... 217  
Bruce, Rebecca ..... 199  
Bădulescu, Adriana ..... 195  
Burger, John ..... 69  
Buscaldi, David ..... 77  
Cabezas, Clara ..... 83  
Carpuat, Marine ..... 88, 183, 262  
Carroll, John ..... 151  
Castillo, Mauro ..... 93  
Chen, Boxing ..... 175  
Chia, Tee Kiah ..... 137  
Chklovski, Timothy ..... 5, 25, 29  
Ciaramita, Massimiliano ..... 97  
Crestan, Eric ..... 101  
Crist, L. .... 187  
Csomai, András ..... 105  
Daelemans, Walter ..... 108  
De Rijke, Maarten ..... 49  
Decadt, Bart ..... 108  
Donner, Jeff ..... 199  
El Demerdash, Osama ..... 133  
El-Bèze, Marc ..... 175  
Erk, Katrin ..... 64  
Escudero, Gerard ..... 113  
Faruque, Ehsanul ..... 155  
Férnandez-Amorós, David ..... 117  
Ferrés, Dani ..... 21, 147  
Fissaha, Sisay ..... 49  
Fleischman, Michael ..... 129  
Fortu, Ovidiu ..... 167  
Francis, Real ..... 93  
García, M. Ángel ..... 248  
García, Manuel ..... 248  
García, Mar ..... 21, 147  
García-Cumbreras, Miguel ..... 121  
García-Vega, Manuel ..... 121  
Giampiccolo, Danilo ..... 17  
Gîrju, Roxana ..... 167  
Giuliano, Claudiu ..... 229  
Gliozzo, Alfio ..... 229  
Greiff, John ..... 69  
Grozea, Cristian ..... 125  
Harabagiu, Sanda ..... 73  
Hauser, Bob ..... 195  
Hoste, Véronique ..... 108  
Hovy, Eduard ..... 129  
Hristea, Florentina ..... 29  
Ji, Dong-Hong ..... 191  
Jijkoun, Valentin ..... 49  
Johnson, Mark ..... 97  
Killgariff, Adam ..... 25  
Kim, Soo-Hong ..... 222  
Koeling, Rob ..... 151  
Korhonen, Anna ..... 33  
Kosseim, Leila ..... 133  
Kraif, Olivier ..... 175  
Kwon, Namhee ..... 129  
Lamjiri, Abolfazl ..... 133  
Lee, Yoong Keok ..... 137  
Lersundi, Mikel ..... 1  
Li, Huifeng ..... 187  
Li, Wei ..... 187  
Litkowski, Ken ..... 9, 13, 141  
Magnini, Bernardo ..... 17, 253  
Màrquez, Lluís ..... 21, 113, 147, 253  
Martí, Antonia ..... 21, 147, 243  
Martín, M. Teresa ..... 248  
Martínez, David ..... 1, 44, 253  
Masulli, Francesco ..... 77  
McCarthy, Diana ..... 151, 253  
Mihalcea, Rada ..... 5, 25, 29, 155  
Mohammad, Saif ..... 159  
Mohammed, Altaf ..... 163  
Moldovan, Dan ..... 163, 167, 195  
Molina, Antonio ..... 171  
Montoyo, Andrés ..... 243, 248, 253  
Moreau de Montcheuil, Grégoire ..... 175  
Morărescu, Paul ..... 73  
Moschitti, Alessandro ..... 73  
Navigli, Roberto ..... 179



Ng, Hwee Tou .....	137	Uria, Larraitz .....	1
Ngai, Grace .....	183, 262	Vallin, Alessandro .....	17
Nica, Iulia .....	243	Van den Bosch, Antal .....	108
Nicolae, Gabriel .....	73	Vázquez, Sonia .....	243, 248
Niu, Cheng .....	187	Velardi, Paola .....	179
Niu, Zheng-Yu .....	191	Verdejo, Felisa .....	58
Novischi, Adrian .....	195	Villarejo, Luís .....	253
Năstase, Vivi .....	29	Wang, Chi-Shing .....	183
O'Hara, Tom .....	199	Wang, Chi-Yung .....	183
Olteanu, Marian .....	167	Weeds, Julie .....	151
Packel, Adrian .....	257, 262	Wellner, Ben .....	69
Padó, Sebastian .....	64	Wicentowski, Richard .....	257, 262
Palmer, Martha .....	41	Wiebe, Janyce .....	199
Parker, Paul .....	163, 195	Wu, Dekai .....	88, 183, 262
Patrick, Jon .....	54	Yuret, Deniz .....	265
Patwardhan, Siddharth .....	235		
Pedersen, Ted .....	5, 159, 203		
Penas, Anselmo .....	58		
Pla, Ferran .....	171		
Pociello, Eli .....	1		
Popescu, Marius .....	209		
Preiss, Judita .....	33, 213		
Prescher, Detlef .....	64		
Prithviraj, B. ....	217		
Purandare, Amruta .....	5		
Ramakrishnan, Ganesh .....	217		
Real, Francis .....	21, 147		
Resnik, Philip .....	83		
Rigau, German .....	93, 113		
Rim, Hae-Chang .....	222		
Romero, Rafael .....	243, 248		
Rosso, Paolo .....	77		
Rus, Vasile .....	37		
Segarra, Encarna .....	171		
Seo, Hee-Cheol .....	222		
Șerban, Gabriela .....	226		
Snyder, Benjamin .....	41		
Srihari, Rohini K. ....	187		
Strapparava, Carlo .....	229, 253		
Su, Weifeng .....	88		
Suárez, Armando .....	243, 248, 253		
Tan, Chew-Lim .....	191		
Taulé, Mariona .....	21, 147		
Thomforde, Emily .....	257, 262		
Thompson, Cynthia .....	235		
Tătar, Doina .....	29, 226		
Tufiş, Dan .....	29		
Turney, Peter .....	239		
Urena, L. Alfonso .....	248		