Proceedings of the Workshop on Computational Lexical Semantics

Held in cooperation with HLT-NAACL 2004

May 6, 2004
Boston, Massachusetts, USA
Order additional copies from:

Association for Computational Linguistics
3 Landmark Center
East Stoudsburg, PA 18301, USA
Tel: +1-570-476-8006
Fax: +1-570-476-0860
acl@aclweb.org
SPONSOR:
Language Computer Corporation, Dallas, TX

KEYNOTE SPEAKER:
Dr. Ray Jackendoff, Brandeis University, USA

PROGRAM COMMITTEE:

Dan Moldovan  The University of Texas at Dallas, USA  Program Co-Chair
Roxana Girju  Baylor University, USA  Program Co-Chair
Jade Goldstein  DoD, USA
Vasileios Hatzivasiloglou  Columbia University
Marti Hearst  U.C. Berkeley, USA
Mirella Lapata  University of Sheffield, UK
Steve Maiorano  ATP, USA
Martha Palmer  University of Pennsylvania, USA
John Prange  ARDA, USA
James Pustejovsky  Brandeis University, USA
Carol Van Ess-Dykema  DoD, USA

Additional Reviewers

Adriana Badulescu  The University of Texas at Dallas, USA
Sasha Blair-Goldensohn  Columbia University, USA
Orest Bolohan  The University of Texas at Dallas, USA
Elena Filatova  Columbia University, USA
Ovidiu Fortu  The University of Texas at Dallas, USA
Ana-Maria Giuglea  The University of Texas at Dallas, USA
Adrian Novischi  The University of Texas at Dallas, USA
Marian Olteanu  The University of Texas at Dallas, USA
Marta Tatu  The University of Texas at Dallas, USA
Simone Teufel  University of Cambridge, UK

WORKSHOP WEBSITE:

http://cs.baylor.edu/~girju/hlt-naacl/cfp-CLS04.html
PREFACE

We are pleased to present the papers accepted for the Computational Lexical Semantics Workshop (CLS-04), held in conjunction with the HLT-NAACL 2004 Conference in Boston, MA, May 2-7, 2004. CLS-04 continues the tradition begun over a decade ago.

The aim of this workshop was to bring together researchers from academia, government, and industry interested in text understanding, lexical semantics, knowledge representation, question answering, information retrieval, machine translation, and speech processing to report on recent advances and new perspectives in computational lexical semantics. We believe we have accomplished this goal and are excited about the future advances in lexical semantics.

Lexical semantics is the study of word semantic properties in context and it is at the core of NLP and many of its applications. Recently, there has been a renewed interest in text semantics fueled in part by the complexity of some major research initiatives, such as Question Answering, Text Summarization, Machine Translation, Information Extraction, Reasoning, and others.

We are honored to have Dr. Ray Jackendoff as the keynote speaker for this year's workshop. Professor Jackendoff's research deals with the semantics of natural language, its bearing on the formal structure of cognition, and its lexical and syntactic expression. We would like to express our sincere appreciation to him for having kindly agreed to share his unique perspective with this workshop.

We would like to take this opportunity to extend our gratitude to the many people who contributed to CLS-04. We would like to thank HLT-NAACL 2004 General Chair, Julia Hirschberg, Publications Chairs Gina-Anne Levow and Miles Osborne and Workshop Chair Richard Sproat for their support and assistance. Our special thanks to the program committee and additional reviewers, as listed on the previous page, for their contributions of time, conscientious effort, support and encouragement. Highest appreciation goes to all the researchers who contributed their work to CLS-04. We are grateful to Cathie Ranta and Marta Tatu from the Human Language Technology Research Institute, University of Texas at Dallas, who have assisted with the preparation of this volume. We would also like to extend an additional acknowledgment to Language Computer Corporation, Dallas, TX, for its kind, generous co-sponsorship of this year's workshop.

Welcome to the workshop!

Dan Moldovan and Roxana Girju
Program Committee Co-Chairs
March 2004
# Table of Contents

**OntoSem Methods for Processing Semantic Ellipsis**  
Marjorie McShane, Stephen Beale and Sergei Nirenburg ............................. 1

**Towards Full Automation of Lexicon Construction**  
Richard Rohwer and Dayne Freitag .................................................. 9

**A Powerful and General Approach to Context Exploitation in Natural Language Processing**  

**Using prepositions to extend a verb lexicon**  
Karin Kipper, Benjamin Snyder and Martha Palmer .............................. 23

**Using Selectional Profile Distance to Detect Verb Alternations**  
Vivian Tsang and Suzanne Stevenson ............................................. 30

**Extended Lexical-Semantic Classification of English Verbs**  
Anna Korhonen and Ted Briscoe ..................................................... 38

**Non-Classical Lexical Semantic Relations**  
Jane Morris and Graeme Hirst .......................................................... 46

**Decision Trees for Sense Disambiguation of Prepositions: Case of Over**  
Yukiko Sasaki Alan ................................................................. 52

**Models for the Semantic Classification of Noun Phrases**  
Dan Moldovan, Adriana Baduleacu, Marta Tatu, Daniel Antohe and Roxana Girju ........ 60

**Support Vector Machines Applied to the Classification of Semantic Relations in Nominalized Noun Phrases**  
Roxana Girju, Ana-Maria Giuglea, Marian Olteanu, Ovidiu Fortu, Orest Bokohan and Dan Moldovan 68

**Abstraction Summarization for Managing the Biomedical Research Literature**  
Marcelo Fiszman, Thomas C. Rindflesch and Halil Kilicoglu ........................ 76

**Comparing, Integrating Lexical Definitional Knowledge From Multiple Sources**  
Lucja M. Iwanska ............................................................................. 84

**Generating Linear Orders of Text-Based Events**  
Kathleen Hornsby and Suzannah Hall ................................................. 92

**Fine-Grained Lexical Semantic Representations and Compositionally-Derived Events in Mandarin Chinese**  
Jimmy Lin ......................................................................................... 100
WORKSHOP PROGRAM

Thursday, May 6

8:30-9:30 Keynote speech: TBA (Dr. Ray Jackendoff)
9:30-9:40 Coffee break
9:40-10:00 OntoSem Methods for Processing Semantic Ellipsis
  Marjorie McShane, Stephen Beale and Sergei Nirenburg
10:00-10:20 Towards Full Automation of Lexicon Construction
  Richard Rohwer and Dayne Freitag
10:20-10:40 A Powerful and General Approach to Context Exploitation in Natural Language Processing
10:40-11:10 Coffee break
11:10-11:30 Using prepositions to extend a verb lexicon
  Karin Kipper, Benjamin Snyder and Martha Palmer
11:30-11:50 Using Selectional Profile Distance to Detect Verb Alternations
  Vivian Tsang and Suzanne Stevenson
11:50-12:10 Extended Lexical-Semantic Classification of English Verbs
  Anna Korhonen and Ted Briscoe
12:10-1:30 Lunch
1:30-1:50 Non-Classical Lexical Semantic Relations
  Jane Morris and Graeme Hirst
1:50-2:10 Decision Trees for Sense Disambiguation of Prepositions: Case of Over
  Yukiko Sasaki Alam
2:10-2:30 Models for the Semantic Classification of Noun Phrases
  Dan Moldovan, Adriana Badulescu, Marta Tatu, Daniel Antohe and Roxana Girju
2:30-2:40 Coffee break
2:40-3:00 Support Vector Machines Applied to the Classification of Semantic Relations in Nominalized Noun Phrases
  Roxana Girju, Ana-Maria Giulean, Marian Olteanu, Ovidiu Fortu, Orest Bolohan and Dan Moldovan
3:00-3:20 Abstraction Summarization for Managing the Biomedical Research Literature
  Marcelo Fišman, Thomas C. Rindflesch and Hall Kilicoglu
3:20-3:40 Comparing, Integrating Lexical Definitional Knowledge From Multiple Sources
  Lucja M. Iwanska
3:40-4:10 Coffee break
4:10-4:30 Generating Linear Orders of Text-Based Events
  Kathleen Hornsby and Suzannah Hall
4:30-4:50 Fine-Grained Lexical Semantic Representations and Compositionally-Derived Events in Mandarin Chinese
  Jimmy Lin
4:50-5:30 Discussion panel
Author Index

Alam, Yukiko Sasaki.............................................................. 52
Antohe, Daniel ................................................................. 60
Badulescu, Adriana ............................................................ 60
Beale, Stephen ................................................................. 1
Bobhan, Orest ................................................................. 68
Briscoe, Ted ................................................................. 38
Fan, Adrian T. ................................................................. 17
Fiszman, Marcelo .............................................................. 76
Fortu, Ovidiu ................................................................. 68
Freitag, Dayne ................................................................ 9
Girju, Roxana .................................................................. 60, 68
Giuglea, Ana-Maria .......................................................... 68
Hall, Suzannah ................................................................. 92
Hecht-Nielsen, Robert .................................................... 17
Hirst, Graeme ................................................................. 46
Hobsby, Kathleen ............................................................. 92
Iwanska, Lucja M. ............................................................ 84
Kilicoglu, Halil ................................................................. 76
Kipper, Karin ................................................................. 23
Korhonen, Anna ............................................................... 38
Lin, Jimmy .................................................................. 100
McShane, Marjorie .......................................................... 17
Means, Robert W. ............................................................ 60, 68
Morris, Jane .................................................................. 46
Nemat-Nasser, Syrus C. .................................................. 17
Nirenburg, Sergei ............................................................ 1
Olteanu, Marian .............................................................. 68
Palmer, Martha ............................................................... 23
Rindlesch, Thomas C. .................................................... 76
Rohwer, Richard ............................................................. 9
Snyder, Benjamin ............................................................ 23
Stevenson, Suzanne ....................................................... 30
Tatu, Marta ................................................................. 60
Tsang, Vivian ................................................................. 30