Conference Sponsors:

- AT&T Interactive (Platinum Level)
- Microsoft Research (Gold Level)
- USC Information Sciences Institute (Gold Level)
- Google (Silver Level)
- J.D. Power and Associates (Silver Level)
- Yahoo! Labs (Silver Level)
- Basis Technology (Bronze Level)
- Factual (Bronze Level)
- IBM Research (Best Student Paper Award)
- Language Weaver (Conference Bag Sponsor)

USB memory sticks produced by
Omnipress Inc.
2600 Anderson Street
Madison, WI 53707
USA

©2010 The Association for Computational Linguistics
Association for Computational Linguistics (ACL)
209 N. Eighth Street
Stroudsburg, PA 18360
USA
Tel: +1-570-476-8006
Fax: +1-570-476-0860
acl@aclweb.org

It is with great pleasure that I welcome you to the 2010 Human Language Technologies conference of the North American chapter of the Association for Computational Linguistics. An enormous amount of effort has gone into organizing the conference, and the result is the rich set of intellectual and social experiences that you will enjoy this week.

The NAACL HLT 2010 conference is an orchestrated production of many events. The centerpiece is the collection of carefully chosen papers, posters, and demonstrations that will be presented during the three days of the main conference. This includes the papers and posters of the Student Research Workshop, a setting that gives encouragement and opportunity for new members of our community to present their work. The main conference is preceded by a day of tutorials on topics of current interest in the field, and it is followed by a very full program of specialized workshops.

Many people have volunteered their time and energy to ensure the success of the conference. Indeed, the community as a whole has contributed by submitting papers and proposals for workshops, demos, and tutorials, by making thoughtful judgments as members of the many review committees, and for coming to participate in the events this week. These contributions are very much appreciated. The heaviest burdens have been shared by the people who agreed to lead the major subcommittees of the conference, and I want to recognize them here and explicitly thank them for their service.

To begin, I want to express my gratitude to Jill Burstein, Mary Harper, and Gerald Penn, the co-Chairs of the Program Committee. They supervised the selection of papers and scheduling for the main conference, recruiting the Area Chairs and managing the overall process. They chose the Noisy Genre theme of the conference, collaborated with the Area Chairs to select the Invited Speakers, administered the START reviewing system, and worked with the Area Chairs and the Local Arrangements Committee to assemble the final program. They also added a new feature to the program, a “one-minute madness” session to raise awareness and excitement about the poster and demo presentations.

The Program Committee co-Chairs and Area Chairs recommended a small number of papers for further consideration by the Best Papers Committee, chaired by Aravind Joshi. Tremendous thanks go to Aravind, Eugene Charniak, Michael Collins, Diane Litman, Daniel Marcu, and Drago Radev for their work in identifying the best examples of current work in the field.

The main-conference days include some other important activities. I appreciate Kristina Toutanova’s effort to organize a second lunch-time Industry Panel, a follow-on to the successful panel at NAACL HLT 2009. I thank Carolyn Penstein Rosé, Chair of the Demonstration Committee, for soliciting candidates for the Demo Session and overseeing the rigorous process of review. For organizing the Student Research Workshop I thank Adriane Boyd, Mahesh Joshi, and Frank Rudzicz, the student co-Chairs, and also Julia Hockenmaier and Diane Litman for the assistance and guidance they provided as Faculty Advisors. Financial support for the student workshop came from a grant from the National Science Foundation.

I thank Richard Sproat and David Traum for serving as co-Chairs of the Workshop Committee. The workshop proposal and selection process was a joint activity of committees representing all three of this year’s computational linguistics conferences, the ACL conference in Uppsala, Coling in Beijing, and NAACL HLT. Their challenge was to honor the location requests of the workshop proposers while
arranging for each conference to have a broad and balanced collection of workshops. A full complement of 16 workshops were chosen for NAACL HLT, and Richard and David then became the interface with the organizers of the individual workshops as they put out their calls, reviewed submissions, and assembled final papers for the Publications Committee.

I am grateful to Jason Baldridge, Peter Clark, and Gokhan Tur for volunteering to co-Chair the Tutorial Committee and for attracting and selecting tutorials that introduce a range of novel techniques and address a number of theoretical and practical problems.

The Publications Committee is responsible for constructing the written Proceedings of the conference from the materials that come from the many sources. The Publications Committee, with Claudia Leacock and Richard Wicentowski as co-Chairs, comes in at the end of the preparation stage and must operate on a strict schedule if the Proceedings are to be available by the time the conference begins. This year Claudia and Richard have been the pioneers for two major departures from past procedure. ACL proceedings in the past have been produced by a stand-alone community-developed software package, ACLPUB; this year we are using a version of that package that has been integrated directly into the START conference-management system. This should simplify the publication process for future conferences, but Claudia and Richard endured a fair amount of first-user suffering. The second departure from past practices is that for the first time we are providing the proceedings only on a USB memory stick, unaccompanied by a hardcopy volume. I deeply appreciate the care and attention with which Claudia and Richard have carried out their responsibilities.

We are all very much indebted to David Chiang, Jason Riesa, Jonathan May, and Eduard Hovy, the co-Chairs of the Local Arrangements Committee, and to the other members of the committee from the USC Information Sciences Institute. They have been hard at work for the longest time, and the comfort and elegance of the conference setting is the result of the many decisions they have made. To highlight just a few, they selected the hotel, made sure that the session rooms are properly laid out and equipped, and planned for the reception and banquet. They also designed and maintained the very attractive and informative conference web site. Liang Huang served as Coordinator of the Student Volunteers, and Jillian Gerten and Kenji Sagae served as Exhibit Coordinators.

I am grateful to the sponsoring organizations listed above for their financial support of the conference, and to the members of the Sponsorship Committee for identifying and nurturing those important relationships. The Sponsorship Committee—Srinivas Bangalore, Christy Doran, Eduard Hovy, Stephen Pulman, and Frédérique Segond—raised money jointly for NAACL HLT and ACL this year.

The NAACL executive committee, chaired by Owen Rambow and Rebecca Hwa, provides overall supervision and maintains the continuity and traditions of the conference from year to year. They helped by identifying candidates for many of the committee positions, by resolving several significant issues of conference policy, and by overseeing the budgeting process.

Finally, my heartfelt thanks go to Priscilla Rasmussen, the Business Manager of the ACL office and for the ACL conferences, for her steady guidance through all the stages of conference preparation. Priscilla, as always, played a critical role as the voice of experience and the source of wise advice that kept everything moving in the right direction.

Ronald M. Kaplan
Powerset division of Microsoft Bing
General Chair, NAACL HLT 2010
Preface: Program Chairs

Thanks for attending NAACL HLT 2010! As can be seen in the Conference Program, the NAACL HLT program contains innovative, high-quality work spanning a large array of disciplines within computational linguistics and human language technology. This year, we have included a special Noisy Genre theme to acknowledge the significant work in that area across several disciplines. We would like to thank L. Venkata Subramaniam of IBM Research-India for this suggestion.

NAACL HLT 2010 consists of oral and poster presentations of full and short papers, tutorials, application demonstrations, and workshops. A one-minute madness session has been introduced this year to highlight the poster and demo contributions. We are excited to have two very interesting and diverse keynote speakers: David Temperley, University of Rochester, whose talk is entitled, “Music, Language, and Computational Modeling: Lessons from the Key-Finding Problem”, and Steve Renals, University of Edinburgh, “Recognition and Understanding of Meetings.” In addition, we have a panel session Recent and Future HLT Challenges in Industry, chaired by Kristina Toutanova, which very appropriately reflects the conference theme.

This year, 291 full papers were submitted and reviewed, of which 90 papers were accepted (a 30.9% acceptance rate); 159 short papers were submitted and reviewed, of which 56 were accepted (a 35.2% acceptance rate). One of the accepted short papers was withdrawn to appear elsewhere, leaving a total of 55 short papers in the proceedings. Eighty-six full papers and 25 short papers will be presented orally. The remaining 34 accepted full and short papers will be presented as posters. We would like to thank all of the authors for submitting such remarkable papers to the conference.

Two best papers have been selected this year, and will be presented at the conference in a special awards session. The Best Full Paper, entitled Coreference Resolution in a Modular, Entity-Centered Model, was written by Aria Haghighi and Dan Klein. The Best Short Paper, entitled “cba to check the spelling”: Investigating Parser Performance on Discussion Forum Posts, was written by Jennifer Foster. Congratulations to the authors! The selection process worked as follows. The Senior Program Committee (SPC) nominated an initial set of best paper candidates for the awards; the final decisions were then made by a separate committee: Aravind Joshi (chair), Eugene Charniak, Michael Collins, Diane Litman, Daniel Marcu, and Dragomir Radev. We would like to thank the committee for reading, discussing, and contributing to the final selection process. The committee was selected to handle the breadth of expertise required to review the nominated best papers. Once the camera-ready versions of the papers were submitted by the authors, the Best Paper committee chair used the following process: (a) Committee members were asked to notify the chair about conflicts of interest. Members with conflicts of interest did not rank or discuss those papers with which they were conflicted. (b) Short papers were ranked first by committee members, and additional discussions were held to make a final decision. (c) Next, long papers were ranked by members and a smaller set of top papers were identified. Discussions were then held to make the final decision. (d) The committee chair was available to break any ties.

The review process was organized as a two-tier system with 18 SPC members and 382 reviewers. The SPC members managed the review process for both the full and short paper submissions: each paper received at least three reviews. Strict conflict-of-interest policies were in place during the review process. Specifically, authors who served on the Program Committee in any capacity were removed.
from any responsibility related to their paper. Any such conflict-of-interest paper was handled by another committee member. In addition, the author was prohibited from participating in any discussion or decision making related to the paper. A similar policy also applied if a Program Committee member had an institutional or personal conflict with an author. All decisions on papers with these types of conflicts were made by members without conflicts. We would not have been able to produce such an interesting conference program without the dedicated SPC members who spent many weeks handling and evaluating the submission reviews, nor without the reviewers who provided such thoughtful evaluations. The full list of the SPC members and reviewers is listed elsewhere in these Proceedings. We would also like to thank the SPC members for their best paper recommendations and suggestions for the program, and Chris Dyer for his suggestions on the Machine Translation sessions.

There were, of course, a number of additional people with whom we directly interacted, and who made significant contributions to the success of this conference. So, here are some well-deserved acknowledgements. We would like to thank Rich Gerber and the START team for their help with the system that managed paper submissions and reviews, and the Local Arrangement co-chairs, David Chiang, Eduard Hovy, Jonathan May, and Jason Riesa, for their help with organizing the program, the preparation and publication of the conference handbook, handling the NAACL HLT 2010 website, and various other tasks – a list too lengthy to name here. We would also like to thank the Publication Co-chairs, Claudia Leacock and Richard Wicentowski, for forging through a number of obstacles, and doing an excellent job of handling the preparation and printing of these proceedings. We would like to thank the Workshop Co-chairs, David Traum and Richard Sproat, the Demo Chair, Carolyn Penstein Rosé, the Tutorial Co-chairs, Jason Baldridge, Peter Clark and Gokhan Tur, and the Student Research Workshop Faculty Co-chairs, Julia Hockenmeier and Diane Litman, and Student Co-chairs, Adriane Boyd, Mahesh Joshi, and Frank Rudzicz. The hard work of all of these co-chairs contributed to the quality of the entire conference program. We would also like to thank Chris Callison-Burch for handling Student Author Support, and to Liang Huang for serving as the Student Volunteer Coordinator. We are grateful to Priscilla Rasmussen for supporting the visa application process, as well as answering a variety of our questions and concerns around general conference logistics and event planning. Finally, we would like to express our deepest thanks to the General Chair, Ron Kaplan, for his continual support and patience throughout this process.

We hope that you will have a unique and enriching conference experience!

Jill Burstein, Educational Testing Service
Mary Harper, University of Maryland; Johns Hopkins HLT COE
Gerald Penn, University of Toronto
Organizers

General Chair:
Ronald Kaplan, Powerset Division of Microsoft Bing

Program Co-Chairs:
Jill Burstein (NLP), Educational Testing Service
Mary Harper (Speech), University of Maryland and The Johns Hopkins University HLTCOE
Gerald Penn (NLP), University of Toronto

Workshop Chairs:
Richard Sproat, Oregon Health & Science University
David Traum, University of Southern California, Institute for Creative Technologies

Demo Chair:
Carolyn Penstein Rosé, Carnegie Mellon University

Tutorial Chairs:
Jason Baldridge, The University of Texas at Austin
Peter Clark, The Boeing Company
Gokhan Tur, SRI International

Publications Chairs:
Claudia Leacock, Butler Hill Group
Richard Wicentowski, Swarthmore College

Student Research Workshop Chairs:
Julia Hockenmaier (Faculty Advisor), University of Illinois at Urbana-Champaign
Diane Litman (Faculty Advisor), University of Pittsburgh
Adriane Boyd (NLP Co-Chair), University of Ohio
Mahesh Joshi (NLP Co-Chair), Carnegie Mellon University
Frank Rudzicz (Speech Co-Chair), University of Toronto

Local Arrangements Chairs:
David Chiang, University of Southern California, Information Sciences Institute
Eduard Hovy, University of Southern California, Information Sciences Institute
Jonathan May, University of Southern California, Information Sciences Institute
Jason Riesa, University of Southern California, Information Sciences Institute
Exhibits Chairs:
   - Jillian Gerten, University of Southern California, Institute for Creative Technologies
   - Kenji Sagae, University of Southern California, Information Sciences Institute

Student Volunteers Coordinator:
   - Liang Huang, University of Southern California, Information Sciences Institute

Sponsorship Chairs:
   - Srinivas Bangalore (North America), AT&T
   - Christy Doran (North America), MITRE
   - Eduard Hovy (Local), University of Southern California, Information Sciences Institute
   - Stephen Pulman (Europe), Oxford University
   - Frédérique Segond (Europe), Xerox Research Centre Europe

ACL Business Manager:
   - Priscilla Rasmussen
Program Committee

Senior Program Committee Members (Area Chairs):

Eugene Agichtein, Emory University
Yaser Al-Onaizan, IBM
Ciprian Chelba, Google
Mona Diab, Columbia University
Barbara Di Eugenio, University of Illinois at Chicago
Eric Fosler-Lussier, Ohio State University
Makoto Kanazawa, National Institute of Informatics, Tokyo
Damianos Karakos, Johns Hopkins University
Philip Koehn, University of Edinburgh
Mike Maxwell, University of Maryland
Diana McCarthy, Lexical Computing Ltd
Ani Nenkova, University of Pennsylvania
Stefan Oepen, University of Oslo
Dan Roth, University of Illinois at Urbana-Champaign
Noah Smith, Carnegie Mellon University
Amanda Stent, AT&T
Joel Tetreault, Educational Testing Service
Jan Wiebe, University of Pittsburgh

Paper Award Committee:

Aravind Joshi (Chair), University of Pennsylvania
Daniel Marcu, University of Southern California, Information Sciences Institute
Diane Litman, University of Pittsburgh
Drago Radev, University of Michigan
Eugene Charniak, Brown University
Michael Collins, Massachusetts Institute of Technology

Program Committee Members:

Steve Abney
Mikhail Ageev
Eneko Agirre
David Ahn
Gregory Aist
Salah Ait-Mokhtar
Cem Akkaya
Ingunn Amdal
Ron Artstein
Abhishek Arun
Necip Fazil Ayan
Jason Baldridge
Tim Baldwin
Carmen Banea
Srinivas Bangalore
Regina Barzilay
Roberto Basili
Anja Belz
Yassine Benajiba
Emily M. Bender
Shane Bergsma
Steven Bethard
Pushpak Bhattacharyya
Jiang Bian
Dan Bikel
Alexandra Birch
Steven Bird
<table>
<thead>
<tr>
<th>Name</th>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippe Blache</td>
<td>Kordula De Kuthy</td>
<td>Nancy Green</td>
</tr>
<tr>
<td>Bernd Bohnet</td>
<td>Eric de la Clergerie</td>
<td>Ralph Grishman</td>
</tr>
<tr>
<td>Kristy Boyer</td>
<td>Dina Denner Fushman</td>
<td>Qi Guo</td>
</tr>
<tr>
<td>SRK Branavan</td>
<td>John DeNero</td>
<td>Weiwei Guo</td>
</tr>
<tr>
<td>Antonio Branco</td>
<td>David DeVault</td>
<td>Iryna Gurevych</td>
</tr>
<tr>
<td>Thorsten Brants</td>
<td>Doug Downey</td>
<td>Aria Haghighi</td>
</tr>
<tr>
<td>Chris Brew</td>
<td>Mark Dredze</td>
<td>Keith Hall</td>
</tr>
<tr>
<td>Sam Brody</td>
<td>Jasha Droppo</td>
<td>Mike Hammond</td>
</tr>
<tr>
<td>Razvan Bunescu</td>
<td>Amit Dubey</td>
<td>Sanda Harabagiu</td>
</tr>
<tr>
<td>Harry Bunt</td>
<td>Kevin Duh</td>
<td>Mary Harper</td>
</tr>
<tr>
<td>Lukas Burget</td>
<td>Markus Egg</td>
<td>Mark Hasegawa-Johnson</td>
</tr>
<tr>
<td>Bill Byrne</td>
<td>Andreas Eisele</td>
<td>Laura Hasler</td>
</tr>
<tr>
<td>Donna Byron</td>
<td>Jacob Eisenstein</td>
<td>Hany Hassan</td>
</tr>
<tr>
<td>Lynne Cahill</td>
<td>Jason Eisner</td>
<td>Xiaodong He</td>
</tr>
<tr>
<td>Aoife Cahill</td>
<td>Noemie Elhadad</td>
<td>Jeff Heinz</td>
</tr>
<tr>
<td>Chris Callison-Burch</td>
<td>Jonathan Elsas</td>
<td>James Henderson</td>
</tr>
<tr>
<td>Claire Cardie</td>
<td>Micha Elsner</td>
<td>Andy Hickl</td>
</tr>
<tr>
<td>Giuseppe Carenini</td>
<td>Ahmad Emami</td>
<td>Silja Hildebrand</td>
</tr>
<tr>
<td>Michael Carl</td>
<td>Andrea Esuli</td>
<td>Graeme Hirst</td>
</tr>
<tr>
<td>Marine Carpuat</td>
<td>Tanveer Farquie</td>
<td>Hieu Hoang</td>
</tr>
<tr>
<td>John Carroll</td>
<td>Benoit Favre</td>
<td>Julia Hockenmaier</td>
</tr>
<tr>
<td>Francisco Casacuberta</td>
<td>Elena Filatova</td>
<td>Kristy Hollingshead</td>
</tr>
<tr>
<td>Joyce Chai</td>
<td>Katja Filippova</td>
<td>Rebecca Hwa</td>
</tr>
<tr>
<td>Eugene Charniak</td>
<td>Jenny Finkel</td>
<td>Nancy Ide</td>
</tr>
<tr>
<td>Ciprian Chelba</td>
<td>Dan Flickinger</td>
<td>Diana Inkpen</td>
</tr>
<tr>
<td>Jinying Chen</td>
<td>Kate Forbes Riley</td>
<td>Abraham Ittycheriah</td>
</tr>
<tr>
<td>John Chen</td>
<td>Eric Fosler-Lussier</td>
<td>Aren Jansen</td>
</tr>
<tr>
<td>Harr Chen</td>
<td>Davide Fossati</td>
<td>Heng Ji</td>
</tr>
<tr>
<td>Yejin Choi</td>
<td>Jennifer Foster</td>
<td>Kristina Jokinen</td>
</tr>
<tr>
<td>Alexander Clark</td>
<td>George Foster</td>
<td>Doug Jones</td>
</tr>
<tr>
<td>Stephen Clark</td>
<td>Alexander Fraser</td>
<td>Laura Kallmeyer</td>
</tr>
<tr>
<td>James Clarke</td>
<td>Maria Fuentes</td>
<td>Hiroshi Kanayama</td>
</tr>
<tr>
<td>Martin Cmejrek</td>
<td>Pascale Fung</td>
<td>Damianos Karakos</td>
</tr>
<tr>
<td>Shay Cohen</td>
<td>Ryan Gabbard</td>
<td>Lauri Karttunen</td>
</tr>
<tr>
<td>Trevor Cohn</td>
<td>Michel Galley</td>
<td>Athanasios Katsamanis</td>
</tr>
<tr>
<td>Michael Collins</td>
<td>Michael Gamon</td>
<td>Frank Keller</td>
</tr>
<tr>
<td>Michael Connor</td>
<td>Albert Gatt</td>
<td>Cynthia Kersey</td>
</tr>
<tr>
<td>John Conroy</td>
<td>Panayiotis Georgiou</td>
<td>Tracy King</td>
</tr>
<tr>
<td>Mark Core</td>
<td>Dan Gildea</td>
<td>Brian Kingsbury</td>
</tr>
<tr>
<td>Mathias Creutz</td>
<td>Jesus Gimenez</td>
<td>Dan Klein</td>
</tr>
<tr>
<td>Aron Culotta</td>
<td>Roxana Girju</td>
<td>Kevin Knight</td>
</tr>
<tr>
<td>Robert Dale</td>
<td>Claudio Giuliano</td>
<td>Greg Kobele</td>
</tr>
<tr>
<td>Cristian Danescu-Niculescu-Mizil</td>
<td>Vaibhava Goel</td>
<td>Rob Koeling</td>
</tr>
<tr>
<td>Hal Daume</td>
<td>Dan Goldwasser</td>
<td>Greg Kondrak</td>
</tr>
<tr>
<td>Anne David</td>
<td>Carlos Gomez Rodriguez</td>
<td>Terry Koo</td>
</tr>
<tr>
<td></td>
<td>Jeff Good</td>
<td>Stefan Kopp</td>
</tr>
</tbody>
</table>
Valia Kordoni
Anna Korhonen
Sandra Kuebler
Marco Kuhlmann
Roland Kuhn
Jonas Kuhn
Seth Kulick
Mikko Kurimo
Oren Kurland
Sadao Kurohashi
Ard Christian Knig
Philippe Langlais
Mirella Lapata
Alberto Lavelli
Matt Lease
Lin-Shan Lee
Els Lefever
James Lester
Gregor Leusch
Haizhou Li
Zhifei Li
Henry Li
Mu Li
Percy Liang
Jimmy Lin
Diane Litman
Qun Liu
Yang Liu
Zhanyi Liu
Adam Lopez
Annie Louis
Bernardo Magnini
Wolfgang Maier
Rob Malouf
Arindam Mandal
Lidia Mangu
Christopher Manning
Daniel Marcu
Lluis Marquez Villodre
David Martinez
Andre Martins
Yuval Marton
Sameer Maskey
Yuji Matsumoto
Evgeny Matusov
Arne Mauser
Mike Maxwell
James Mayfield
David McClosky
Mark McConville
Nancy McCracken
David McDonald
Ryan McDonald
Kathy McKeown
Susan McRoy
Florian Metze
Eleni Miltsakaki
Gilad Mishne
Yusuke Miyao
Saif Mohammad
Bob Moore
Alessandro Moschitti
Dragos Munteanu
Smaranda Muresan
Gabriel Murray
Tor Andre Myrvoll
Roberto Navigli
Mark-Jan Nederhof
Sumit Negi
Hwee Tou Ng
Vincent Ng
Patrick Nguyen
Takashi Ninomiya
Joakim Nivre
Doug Oard
Franz Och
Kemal Oflazer
Alice Oh
Constantin Orasan
Miles Osborne
Lilja Ovrelid
Deepak Padmanabhan
Ulrike Pado
Alexis Palmer
Martha Palmer
Bo Pang
Marius Pasca
Becky Passonneau
Sid Patwardhan
Ted Pedersen
Slav Petrov
Christine Piatko
Daniele Pighin
Emily Pittler
Massimo Poesio
Joe Polifroni
Simone Ponzetto
Maja Popovic
Dan Povey
Sameer Pradhan
Rashmi Prasad
Chris Quirk
Stephan Raaijmakers
Bhuvana Ramabhadran
Allan Ramsay
Ari Rappoport
Ariya Rastrow
Lev Ratinov
Roi Reichart
Ehud Reiter
German Rigau
Michael Riley
Laura Rimell
Nicholas Rizzolo
Brian Roark
Horacio Rodriguez
Victoria Rosen
Antti-Veikko Rosti
Dan Roth
Shourya Roy
Marta Ruiz Costa-juss
Mark Sammons
George Saon
Murat Saraclar
Kevin Scannell
Odette Scharenborg
David Schlangen
Helmut Schmid
Hinrich Schuetze
Mike Seltzer
Izhak Shafran
Wade Shen
Libin Shen
Nobuyuki Shimizu
Advaith Siddharthan
Khalil Simaan

xi
# Table of Contents

Invited Talk: Recognition and Understanding of Meetings  
Steve Renals ................................................................. 1

Chart Mining-based Lexical Acquisition with Precision Grammars  
Yi Zhang, Timothy Baldwin, Valia Kordoni, David Martinez and Jeremy Nicholson ........ 10

Products of Random Latent Variable Grammars  
Slav Petrov ........................................................................ 19

Automatic Domain Adaptation for Parsing  
David McClosky, Eugene Charniak and Mark Johnson ............................... 28

Appropriately Handled Prosodic Breaks Help PCFG Parsing  
Zhongqiang Huang and Mary Harper ................................................. 37

Using Confusion Networks for Speech Summarization  
Shasha Xie and Yang Liu ................................................................ 46

Qme! : A Speech-based Question-Answering system on Mobile Devices  
Taniya Mishra and Srinivas Bangalore ............................................... 55

Dialogue-Oriented Review Summary Generation for Spoken Dialogue Recommendation Systems  
Jingjing Liu, Stephanie Seneff and Victor Zue ........................................ 64

Minimally-Supervised Extraction of Entities from Text Advertisements  
Sameer Singh, Dustin Hillard and Chris Leggetter ..................................... 73

Taxonomy Learning Using Word Sense Induction  
Ioannis P. Klapaftis and Suresh Manandhar ........................................... 82

Visual Information in Semantic Representation  
Yansong Feng and Mirella Lapata ....................................................... 91

Automatic Evaluation of Topic Coherence  
David Newman, Jey Han Lau, Karl Grieser and Timothy Baldwin ............... 100

Multi-Prototype Vector-Space Models of Word Meaning  
Joseph Reisinger and Raymond J. Mooney ........................................... 109

Unsupervised Syntactic Alignment with Inversion Transduction Grammars  
Adam Pauls, Dan Klein, David Chiang and Kevin Knight .......................... 118

Joint Parsing and Alignment with Weakly Synchronized Grammars  
David Burkett, John Blitzer and Dan Klein ............................................ 127

Learning Translation Boundaries for Phrase-Based Decoding  
Deyi Xiong, Min Zhang and Haizhou Li ............................................... 136
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitting the Right Paraphrases in Good Time</td>
<td>Stanley Kok and Chris Brockett</td>
<td>145</td>
</tr>
<tr>
<td>Training Paradigms for Correcting Errors in Grammar and Usage</td>
<td>Alla Rozovskaya and Dan Roth</td>
<td>154</td>
</tr>
<tr>
<td>Using Mostly Native Data to Correct Errors in Learners’ Writing</td>
<td>Michael Gamon</td>
<td>163</td>
</tr>
<tr>
<td>Unsupervised Modeling of Twitter Conversations</td>
<td>Alan Ritter, Colin Cherry and Bill Dolan</td>
<td>172</td>
</tr>
<tr>
<td>Streaming First Story Detection with application to Twitter</td>
<td>Saša Petrović, Miles Osborne and Victor Lavrenko</td>
<td>181</td>
</tr>
<tr>
<td>Unsupervised Model Adaptation using Information-Theoretic Criterion</td>
<td>Ariya Rastrow, Frederick Jelinek, Abhinav Sethy and Bhuvana Ramabhadran</td>
<td>190</td>
</tr>
<tr>
<td>Formatting Time-Aligned ASR Transcripts for Readability</td>
<td>Maria Shugrina</td>
<td>198</td>
</tr>
<tr>
<td>Cheap, Fast and Good Enough: Automatic Speech Recognition with Non-Expert Transcription</td>
<td>Scott Novotney and Chris Callison-Burch</td>
<td>207</td>
</tr>
<tr>
<td>Contextual Information Improves OOV Detection in Speech</td>
<td>Carolina Parada, Mark Dredze, Denis Filimonov and Frederick Jelinek</td>
<td>216</td>
</tr>
<tr>
<td>Improved Extraction Assessment through Better Language Models</td>
<td>Arun Ahuja and Doug Downey</td>
<td>225</td>
</tr>
<tr>
<td>Language Identification: The Long and the Short of the Matter</td>
<td>Timothy Baldwin and Marco Lui</td>
<td>229</td>
</tr>
<tr>
<td>Inducing Synchronous Grammars with Slice Sampling</td>
<td>Phil Blunsom and Trevor Cohn</td>
<td>238</td>
</tr>
<tr>
<td>Improving Semantic Role Labeling with Word Sense</td>
<td>Wanxiang Che, Ting Liu and Yongqiang Li</td>
<td>246</td>
</tr>
<tr>
<td>Extending the METEOR Machine Translation Evaluation Metric to the Phrase Level</td>
<td>Michael Denkowski and Alon Lavie</td>
<td>250</td>
</tr>
<tr>
<td>Testing a Grammar Customization System with Sahaptin</td>
<td>Scott Drellishak</td>
<td>254</td>
</tr>
<tr>
<td>Two monolingual parses are better than one (synchronous parse)</td>
<td>Chris Dyer</td>
<td>263</td>
</tr>
</tbody>
</table>
Fast Query for Large Treebanks
Sumukh Ghodke and Steven Bird ................................................................. 267

Efficient Parsing of Well-Nested Linear Context-Free Rewriting Systems
Carlos Gómez-Rodríguez, Marco Kuhlmann and Giorgio Satta ...................... 276

Utility Evaluation of Cross-document Information Extraction
Heng Ji, Zheng Chen, Jonathan Feldman, Antonio Gonzalez, Ralph Grishman and
Vivek Upadhyay ................................................................. 285

Evaluation Metrics for the Lexical Substitution Task
Sanaz Jabbari, Mark Hepple and Louise Guthrie ........................................ 289

Movie Reviews and Revenues: An Experiment in Text Regression
Mahesh Joshi, Dipanjan Das, Kevin Gimpel and Noah A. Smith ..................... 293

Using Gaussian Mixture Models to Detect Figurative Language in Context
Linlin Li and Caroline Sporleder ................................................................. 297

Improving Phrase-Based Translation with Prototypes of Short Phrases
Frank Liberato, Behrang Mohit and Rebecca Hwa ........................................ 301

Putting the User in the Loop: Interactive Maximal Marginal Relevance for Query-Focused
Summarization
Jimmy Lin, Nitin Madnani and Bonnie Dorr .............................................. 305

Improving Blog Polarity Classification via Topic Analysis and Adaptive Methods
Feifan Liu, Dong Wang, Bin Li and Yang Liu ............................................. 309

Creating Local Coherence: An Empirical Assessment
Annie Louis and Ani Nenkova ................................................................. 313

Time-Efficient Creation of an Accurate Sentence Fusion Corpus
Kathleen McKeown, Sara Rosenthal, Kapil Thadani and Coleman Moore ............. 317

Towards Cross-Lingual Textual Entailment
Yashar Mehdad, Matteo Negri and Marcello Federico ................................... 321

A Comparative Study of Word Co-occurrence for Term Clustering in Language Model-based
Sentence Retrieval
Saeedeh Momtazi, Sanjeev Khudanpur and Dietrich Klakow .......................... 325

Information Content Measures of Semantic Similarity Perform Better Without Sense-Tagged Text
Ted Pedersen ................................................................................ 329

Generating Expository Dialogue from Monologue: Motivation, Corpus and Preliminary Rules
Paul Piwek and Svetlana Stoyanchev ........................................................... 333

The Simple Truth about Dependency and Phrase Structure Representations: An Opinion Piece
Owen Rambow ................................................................................ 337
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Alignment with Stochastic Bracketing Linear Inversion Transduction Grammar</td>
<td>Markus Saers, Joakim Nivre and Dekai Wu</td>
<td>341</td>
</tr>
<tr>
<td>Crowdsourcing the evaluation of a domain-adapted named entity recognition system</td>
<td>Asad B. Sayeed, Timothy J. Meyer, Hieu C. Nguyen, Olivia Buzek and Amy Weinberg</td>
<td>345</td>
</tr>
<tr>
<td>Generalizing Hierarchical Phrase-based Translation using Rules with Adjacent Nonterminals</td>
<td>Hendra Setiawan and Philip Resnik</td>
<td>349</td>
</tr>
<tr>
<td>The Effect of Ambiguity on the Automated Acquisition of WSD Examples</td>
<td>Mark Stevenson and Yikun Gu</td>
<td>353</td>
</tr>
<tr>
<td>Word Sense Subjectivity for Cross-lingual Lexical Substitution</td>
<td>Fangzhong Su and Katja Markert</td>
<td>357</td>
</tr>
<tr>
<td>Query Ambiguity Revisited: Clickthrough Measures for Distinguishing Informational and Ambiguous Queries</td>
<td>Yu Wang and Eugene Agichtein</td>
<td>361</td>
</tr>
<tr>
<td>For the sake of simplicity: Unsupervised extraction of lexical simplifications from Wikipedia</td>
<td>Mark Yatskar, Bo Pang, Cristian Danescu-Niculescu-Mizil and Lillian Lee</td>
<td>365</td>
</tr>
<tr>
<td>Predicting Human-Targeted Translation Edit Rate via Untrained Human Annotators</td>
<td>Omar F. Zaidan and Chris Callison-Burch</td>
<td>369</td>
</tr>
<tr>
<td>Improving Semantic Role Classification with Selectional Preferences</td>
<td>Beñat Zapirain, Eneko Agirre, Lluis Marquez and Mihai Surdeanu</td>
<td>373</td>
</tr>
<tr>
<td>Generalizing Syntactic Structures for Product Attribute Candidate Extraction</td>
<td>Yanyan Zhao, Bing Qin, Shen Hu and Ting Liu</td>
<td>377</td>
</tr>
<tr>
<td>“cba to check the spelling”: Investigating Parser Performance on Discussion Forum Posts</td>
<td>Jennifer Foster</td>
<td>381</td>
</tr>
<tr>
<td>Coreference Resolution in a Modular, Entity-Centered Model</td>
<td>Aria Haghighi and Dan Klein</td>
<td>385</td>
</tr>
<tr>
<td>Stream-based Translation Models for Statistical Machine Translation</td>
<td>Abby Levenberg, Chris Callison-Burch and Miles Osborne</td>
<td>394</td>
</tr>
<tr>
<td>Extracting Parallel Sentences from Comparable Corpora using Document Level Alignment</td>
<td>Jason R. Smith, Chris Quirk and Kristina Toutanova</td>
<td>403</td>
</tr>
<tr>
<td>Statistical Machine Translation of Texts with Misspelled Words</td>
<td>Nicola Bertoldi, Mauro Cettolo and Marcello Federico</td>
<td>412</td>
</tr>
<tr>
<td>Everybody loves a rich cousin: An empirical study of transliteration through bridge languages</td>
<td>Mitesh M. Khapra, A Kumaran and Pushpak Bhattacharyya</td>
<td>420</td>
</tr>
<tr>
<td>Discriminative Learning over Constrained Latent Representations</td>
<td>Ming-Wei Chang, Dan Goldwasser, Dan Roth and Vivek Srikumar</td>
<td>429</td>
</tr>
</tbody>
</table>
Some Empirical Evidence for Annotation Noise in a Benchmarked Dataset
Beata Beigman Klebanov and Eyal Beigman ......................................................... 438

Bayesian Inference for Finite-State Transducers
David Chiang, Jonathan Graehl, Kevin Knight, Adam Pauls and Sujith Ravi ............ 447

Distributed Training Strategies for the Structured Perceptron
Ryan McDonald, Keith Hall and Gideon Mann ..................................................... 456

Term Weighting Schemes for Latent Dirichlet Allocation
Andrew T. Wilson and Peter A. Chew ................................................................. 465

Learning Dense Models of Query Similarity from User Click Logs
Fabio De Bona, Stefan Riezler, Keith Hall, Massimiliano Ciaramita, Amaç Herdağdelen and
Maria Holmqvist. ................................................................. 474

Learning to Link Entities with Knowledge Base
Zhicheng Zheng, Fangtao Li, Minlie Huang and Xiaoyan Zhu ............................... 483

Improving the Multilingual User Experience of Wikipedia Using Cross-Language Name Search
Raghavendra Udupa and Mitesh M. Khapra ......................................................... 492

Learning Words and Their Meanings from Unsegmented Child-directed Speech
Bevan K. Jones, Mark Johnson and Michael C. Frank ........................................... 501

Subword Variation in Text Message Classification
Robert Munro and Christopher D. Manning ....................................................... 510

Automatic Diacritization for Low-Resource Languages Using a Hybrid Word and Consonant CMM
Robbie Haertel, Peter McClanahan and Eric K. Ringger ....................................... 519

Urdu Word Segmentation
Nadir Durrani and Sarmad Hussain ................................................................. 528

Enabling Monolingual Translators: Post-Editing vs. Options
Philipp Koehn ................................................................. 537

Online Learning for Interactive Statistical Machine Translation
Daniel Ortiz-Martínez, Ismael García-Varea and Francisco Casacuberta .................... 546

The Best Lexical Metric for Phrase-Based Statistical MT System Optimization
Daniel Cer, Christopher D. Manning and Daniel Jurafsky .................................. 555

Variational Inference for Adaptor Grammars
Shay B. Cohen, David M. Blei and Noah A. Smith ........................................... 564

Type-Based MCMC
Percy Liang, Michael I. Jordan and Dan Klein ................................................ 573

Painless Unsupervised Learning with Features
Taylor Berg-Kirkpatrick, Alexandre Bouchard-Côté, John DeNero and Dan Klein .... 582
Linguistic Steganography Using Automatically Generated Paraphrases
Ching-Yun Chang and Stephen Clark .......................................................... 591

Prenominal Modifier Ordering via Multiple Sequence Alignment
Aaron Dunlop, Margaret Mitchell and Brian Roark ..................................... 600

Good Question! Statistical Ranking for Question Generation
Michael Heilman and Noah A. Smith ....................................................... 609

Not All Seeds Are Equal: Measuring the Quality of Text Mining Seeds
Zornitsa Kozareva and Eduard Hovy ....................................................... 618

Extracting Glosses to Disambiguate Word Senses
Weisi Duan and Alexander Yates .............................................................. 627

Can Recognising Multiword Expressions Improve Shallow Parsing?
Ioannis Korkontzelos and Suresh Manandhar .......................................... 636

A Simple Approach for HPSG Supertagging Using Dependency Information
Yao-zhong Zhang, Takuya Matsuzaki and Jun’ichi Tsujii ............................ 645

Ensemble Models for Dependency Parsing: Cheap and Good?
Mihai Surdeanu and Christopher D. Manning ......................................... 649

Enlarged Search Space for SITG Parsing
Guillem Gascó, Joan-Andreu Sánchez and José-Miguel Benedí .................... 653

Improving Data Driven Dependency Parsing using Clausal Information
Phani Gadde, Karan Jindal, Samar Husain, Dipti Misra Sharma and Rajeev Sangal 657

A Treebank Query System Based on an Extracted Tree Grammar
Seth Kulick and Ann Bies ........................................................................... 661

Reranking the Berkeley and Brown Parsers
Mark Johnson and Ahmet Engin Ural ...................................................... 665

An Exploration of Off Topic Conversation
Whitney L. Cade, Blair A. Lehman and Andrew Olney ............................ 669

Making Conversational Structure Explicit: Identification of Initiation-response Pairs within Online Discussions
Yi-Chia Wang and Carolyn P. Rosé ............................................................ 673

Engaging learning groups using Social Interaction Strategies
Rohit Kumar and Carolyn P. Rosé ............................................................ 677

Using Entity-Based Features to Model Coherence in Student Essays
Jill Burstein, Joel Tetreault and Slava Andreyev ....................................... 681

Summarizing Microblogs Automatically
Beaux Sharifi, Mark-Anthony Hutton and Jugal Kalita ............................. 685
Automatic Generation of Personalized Annotation Tags for Twitter Users
Wei Wu, Bin Zhang and Mari Ostendorf ................................................. 689

Language Identification of Names with SVMs
Aditya Bhargava and Grzegorz Kondrak ................................................. 693

Integrating Joint n-gram Features into a Discriminative Training Framework
Sittichai Jiampojamarn, Colin Cherry and Grzegorz Kondrak ....................... 697

A Hybrid Morphologically Decomposed Factored Language Models for Arabic LVCSR
Amr El-Desoky, Ralf Schlüter and Hermann Ney ........................................ 701

Is Arabic Part of Speech Tagging Feasible Without Word Segmentation?
Emad Mohamed and Sandra Kübler ...................................................... 705

Arabic Mention Detection: Toward Better Unit of Analysis
Yassine Benajiba and Imed Zitouni ...................................................... 709

An MDL-based Approach to Extracting Subword Units for Grapheme-to-Phoneme Conversion
Sravana Reddy and John Goldsmith ..................................................... 713

Extracting Phrase Patterns with Minimum Redundancy for Unsupervised Speaker Role Classification
Bin Zhang, Brian Hutchinson, Wei Wu and Mari Ostendorf ......................... 717

Classification of Prosodic Events Using Quantized Contour Modeling
Andrew Rosenberg ................................................................................. 721

Investigations into the Crandem Approach to Word Recognition
Rohit Prabhavalkar, Preethi Jyothi, William Hartmann, Jeremy Morris and Eric Fosler-Lussier ................................................................. 725

Constraint-Driven Rank-Based Learning for Information Extraction
Sameer Singh, Limin Yao, Sebastian Riedel and Andrew McCallum .............. 729

Softmax-Margin CRFs: Training Log-Linear Models with Cost Functions
Kevin Gimpel and Noah A. Smith .......................................................... 733

Bitext-Based Resolution of German Subject-Object Ambiguities
Florian Schwarck, Alexander Fraser and Hinrich Schütze ......................... 737

Invited Talk: Music, Language, and Computational Modeling: Lessons from the Key-Finding Problem
David Temperley .................................................................................... 741

An Efficient Algorithm for Easy-First Non-Directional Dependency Parsing
Yoav Goldberg and Michael Elhadad ..................................................... 742

From Baby Steps to Leapfrog: How “Less is More” in Unsupervised Dependency Parsing
Valentin I. Spitkovsky, Hiyan Alshawi and Daniel Jurafsky ........................... 751
Relaxed Marginal Inference and its Application to Dependency Parsing
  Sebastian Riedel and David A. Smith ................................................................. 760

Optimal Parsing Strategies for Linear Context-Free Rewriting Systems
  Daniel Gildea ........................................................................................................... 769

The viability of web-derived polarity lexicons
  Leonid Velikovich, Sasha Blair-Goldensohn, Kerry Hannan and Ryan McDonald ........ 777

Dependency Tree-based Sentiment Classification using CRFs with Hidden Variables
  Tetsuji Nakagawa, Kentaro Inui and Sadao Kurohashi ........................................ 786

Convolution Kernels for Opinion Holder Extraction
  Michael Wiegand and Dietrich Klakow .................................................................. 795

An Unsupervised Aspect-Sentiment Model for Online Reviews
  Samuel Brody and Noemie Elhadad ....................................................................... 804

Joint Inference for Knowledge Extraction from Biomedical Literature
  Hoifung Poon and Lucy Vanderwende ................................................................... 813

Clinical Information Retrieval using Document and PICO Structure
  Florian Boudin, Jian-Yun Nie and Martin Dawes ................................................... 822

Topic Models for Image Annotation and Text Illustration
  Yansong Feng and Mirella Lapata ......................................................................... 831

Learning about Voice Search for Spoken Dialogue Systems
  Rebecca Passonneau, Susan L. Epstein, Tiziana Ligorio, Joshua B. Gordon and Pravin Bhutada ................................................................. 840

A Direct Syntax-Driven Reordering Model for Phrase-Based Machine Translation
  Niyu Ge .................................................................................................................. 849

Context-free reordering, finite-state translation
  Chris Dyer and Philip Resnik ................................................................................ 858

Improved Models of Distortion Cost for Statistical Machine Translation
  Spence Green, Michel Galley and Christopher D. Manning .................................... 867

Why Synchronous Tree Substitution Grammars?
  Andreas Maletti .................................................................................................... 876

An extractive supervised two-stage method for sentence compression
  Dimitrios Galanis and Ion Androutsopoulos ....................................................... 885

Interpretation and Transformation for Abstracting Conversations
  Gabriel Murray, Giuseppe Carenini and Raymond Ng .......................................... 894

Quantifying the Limits and Success of Extractive Summarization Systems Across Domains
  Hakan Ceylan, Rada Mihalcea, Umut Özertem, Elena Lloret and Manuel Palomar .... 903
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-document Summarization via Budgeted Maximization of Submodular Functions</td>
<td>Hui Lin and Jeff Bilmes</td>
<td>912</td>
</tr>
<tr>
<td>Cross-lingual Induction of Selectional Preferences with Bilingual Vector Spaces</td>
<td>Yves Peirsman and Sebastian Padó</td>
<td>921</td>
</tr>
<tr>
<td>Latent SVMs for Semantic Role Labeling using LTAG Derivation Trees</td>
<td>Yudong Liu, Gholamreza Haffari and Anoop Sarkar</td>
<td>930</td>
</tr>
<tr>
<td>Unsupervised Induction of Semantic Roles</td>
<td>Joel Lang and Mirella Lapata</td>
<td>939</td>
</tr>
<tr>
<td>Probabilistic Frame-Semantic Parsing</td>
<td>Dipanjan Das, Nathan Schneider, Desai Chen and Noah A. Smith</td>
<td>948</td>
</tr>
<tr>
<td>Expected Sequence Similarity Maximization</td>
<td>Cyril Allauzen, Shankar Kumar, Wolfgang Macherey, Mehryar Mohri and Michael Riley</td>
<td>957</td>
</tr>
<tr>
<td>Accurate Non-Hierarchical Phrase-Based Translation</td>
<td>Michel Galley and Christopher D. Manning</td>
<td>966</td>
</tr>
<tr>
<td>Model Combination for Machine Translation</td>
<td>John DeNero, Shankar Kumar, Ciprian Chelba and Franz Och</td>
<td>975</td>
</tr>
<tr>
<td>Detecting Emails Containing Requests for Action</td>
<td>Andrew Lampert, Robert Dale and Cecile Paris</td>
<td>984</td>
</tr>
<tr>
<td>Evaluating Hierarchical Discourse Segmentation</td>
<td>Lucien Carroll</td>
<td>993</td>
</tr>
<tr>
<td>Reformulating Discourse Connectives for Non-Expert Readers</td>
<td>Advaith Siddharthan and Napoleon Katsos</td>
<td>1002</td>
</tr>
<tr>
<td>Tree Edit Models for Recognizing Textual Entailments, Paraphrases, and Answers to Questions</td>
<td>Michael Heilman and Noah A. Smith</td>
<td>1011</td>
</tr>
<tr>
<td>Syntactic/Semantic Structures for Textual Entailment Recognition</td>
<td>Yashar Mehdad, Alessandro Moschitti and Fabio Massimo Zanzotto</td>
<td>1020</td>
</tr>
<tr>
<td>Automatic Metaphor Interpretation as a Paraphrasing Task</td>
<td>Ekaterina Shutova</td>
<td>1029</td>
</tr>
</tbody>
</table>
Conference Program

Wednesday, June 2, 2010

Plenary Session I

8:45–9:00 Opening Ceremony

9:00–10:10 Invited Talk: Recognition and Understanding of Meetings
Steve Renals

10:10–10:40 Break

Parsing I

10:40–11:05 Chart Mining-based Lexical Acquisition with Precision Grammars
Yi Zhang, Timothy Baldwin, Valia Kordoni, David Martinez and Jeremy Nicholson

11:05–11:30 Products of Random Latent Variable Grammars
Slav Petrov

11:30–11:55 Automatic Domain Adaptation for Parsing
David McClosky, Eugene Charniak and Mark Johnson

11:55–12:20 Appropriately Handled Prosodic Breaks Help PCFG Parsing
Zhongqiang Huang and Mary Harper

Noisy Genre I

10:40–11:05 Using Confusion Networks for Speech Summarization
Shasha Xie and Yang Liu

11:05–11:30 Qme! : A Speech-based Question-Answering system on Mobile Devices
Taniya Mishra and Srinivas Bangalore

Jingjing Liu, Stephanie Seneff and Victor Zue
Wednesday, June 2, 2010 (continued)

11:55–12:20  *Minimally-Supervised Extraction of Entities from Text Advertisements*
Sameer Singh, Dustin Hillard and Chris Leggetter

**Semantics I**

10:40–11:05  *Taxonomy Learning Using Word Sense Induction*
Ioannis P. Klapaftis and Suresh Manandhar

11:05–11:30  *Visual Information in Semantic Representation*
Yansong Feng and Mirella Lapata

11:30–11:55  *Automatic Evaluation of Topic Coherence*
David Newman, Jey Han Lau, Karl Grieser and Timothy Baldwin

11:55–12:20  *Multi-Prototype Vector-Space Models of Word Meaning*
Joseph Reisinger and Raymond J. Mooney

**Student Research Workshop I**

Note: All student research workshop papers are located in a companion volume of the proceedings.

10:40–11:10  *Improving Syntactic Coordination Resolution using Language Modeling*
Philip Ogren

11:10–11:40  *On Automated Evaluation of Readability of Summaries: Capturing Grammaticality, Focus, Structure and Coherence*
Ravikiran Vadlapudi and Rahul Katragadda

11:40–12:10  *Detecting Novelty in the Context of Progressive Summarization*
Praveen Bysani

12:20–2:00  Lunch
Machine Translation I

2:00–2:25  Unsupervised Syntactic Alignment with Inversion Transduction Grammars
          Adam Pauls, Dan Klein, David Chiang and Kevin Knight

2:25–2:50  Joint Parsing and Alignment with Weakly Synchronized Grammars
          David Burkett, John Blitzer and Dan Klein

2:50–3:15  Learning Translation Boundaries for Phrase-Based Decoding
          Deyi Xiong, Min Zhang and Haizhou Li

3:15–3:40  Hitting the Right Paraphrases in Good Time
          Stanley Kok and Chris Brockett

Noisy Genre II

2:00–2:25  Training Paradigms for Correcting Errors in Grammar and Usage
          Alla Rozovskaya and Dan Roth

2:25–2:50  Using Mostly Native Data to Correct Errors in Learners’ Writing
          Michael Gamon

2:50–3:15  Unsupervised Modeling of Twitter Conversations
          Alan Ritter, Colin Cherry and Bill Dolan

3:15–3:40  Streaming First Story Detection with application to Twitter
          Saša Petrović, Miles Osborne and Victor Lavrenko
Wednesday, June 2, 2010 (continued)

Speech Processing

2:00–2:25  *Unsupervised Model Adaptation using Information-Theoretic Criterion*
Ariya Rastrow, Frederick Jelinek, Abhinav Sethy and Bhuvana Ramabhadran

2:25–2:50  *Formatting Time-Aligned ASR Transcripts for Readability*
Maria Shugrina

2:50–3:15  *Cheap, Fast and Good Enough: Automatic Speech Recognition with Non-Expert Transcription*
Scott Novotney and Chris Callison-Burch

3:15–3:40  *Contextual Information Improves OOV Detection in Speech*
Carolina Parada, Mark Dredze, Denis Filimonov and Frederick Jelinek

Student Research Workshop II

Note: All student research workshop papers are located in a companion volume of the proceedings.

2:00–2:30  *Extrinsic Parse Selection*
David Goss-Grubbs

2:30–3:00  *Towards a Matrix-based Distributional Model of Meaning*
Eugenie Giesbrecht

3:00–3:30  *Distinguishing Use and Mention in Natural Language*
Shomir Wilson

3:40–4:10  Break
Wednesday, June 2, 2010 (continued)

Poster Plenary Session

4:10–5:30 One-Minute Madness: Poster and Demo Previews

5:30–6:30 Break

6:30–8:30 Poster and Demo Session

Posters

*Improved Extraction Assessment through Better Language Models*
Arun Ahuja and Doug Downey

*Language Identification: The Long and the Short of the Matter*
Timothy Baldwin and Marco Lui

*Inducing Synchronous Grammars with Slice Sampling*
Phil Blunsom and Trevor Cohn

*Task-based Evaluation of Multiword Expressions: a Pilot Study in Statistical Machine Translation*
Marine Carpuat and Mona Diab

*Improving Semantic Role Labeling with Word Sense*
Wanxiang Che, Ting Liu and Yongqiang Li

*Extending the METEOR Machine Translation Evaluation Metric to the Phrase Level*
Michael Denkowski and Alon Lavie

*Testing a Grammar Customization System with Sahaptin*
Scott Drellishak

*Two monolingual parses are better than one (synchronous parse)*
Chris Dyer

*Fast Query for Large Treebanks*
Sumukh Ghodke and Steven Bird
Efficient Parsing of Well-Nested Linear Context-Free Rewriting Systems
Carlos Gómez-Rodríguez, Marco Kuhlmann and Giorgio Satta

Utility Evaluation of Cross-document Information Extraction
Heng Ji, Zheng Chen, Jonathan Feldman, Antonio Gonzalez, Ralph Grishman and Vivek Upadhyay

Evaluation Metrics for the Lexical Substitution Task
Sanaz Jabbari, Mark Hepple and Louise Guthrie

Movie Reviews and Revenues: An Experiment in Text Regression
Mahesh Joshi, Dipanjan Das, Kevin Gimpel and Noah A. Smith

Using Gaussian Mixture Models to Detect Figurative Language in Context
Linlin Li and Caroline Sporleder

Improving Phrase-Based Translation with Prototypes of Short Phrases
Frank Liberato, Behrang Mohit and Rebecca Hwa

Putting the User in the Loop: Interactive Maximal Marginal Relevance for Query-Focused Summarization
Jimmy Lin, Nitin Madnani and Bonnie Dorr

Improving Blog Polarity Classification via Topic Analysis and Adaptive Methods
Feifan Liu, Dong Wang, Bin Li and Yang Liu

Creating Local Coherence: An Empirical Assessment
Annie Louis and Ani Nenkova

Time-Efficient Creation of an Accurate Sentence Fusion Corpus
Kathleen McKeown, Sara Rosenthal, Kapil Thadani and Coleman Moore

Towards Cross-Lingual Textual Entailment
Yashar Mehdad, Matteo Negri and Marcello Federico

A Comparative Study of Word Co-occurrence for Term Clustering in Language Model-based Sentence Retrieval
Saeedeh Momtazi, Sanjeev Khudanpur and Dietrich Klakow
Wednesday, June 2, 2010 (continued)

Information Content Measures of Semantic Similarity Perform Better Without Sense-Tagged Text
Ted Pedersen

Generating Expository Dialogue from Monologue: Motivation, Corpus and Preliminary Rules
Paul Piwek and Svetlana Stoyanchev

The Simple Truth about Dependency and Phrase Structure Representations: An Opinion Piece
Owen Rambow

Word Alignment with Stochastic Bracketing Linear Inversion Transduction Grammar
Markus Saers, Joakim Nivre and Dekai Wu

Crowdsourcing the evaluation of a domain-adapted named entity recognition system
Asad B. Sayeed, Timothy J. Meyer, Hieu C. Nguyen, Olivia Buzek and Amy Weinberg

Generalizing Hierarchical Phrase-based Translation using Rules with Adjacent Nonterminals
Hendra Setiawan and Philip Resnik

The Effect of Ambiguity on the Automated Acquisition of WSD Examples
Mark Stevenson and Yikun Guo

Word Sense Subjectivity for Cross-lingual Lexical Substitution
Fangzhong Su and Katja Markert

Query Ambiguity Revisited: Clickthrough Measures for Distinguishing Informational and Ambiguous Queries
Yu Wang and Eugene Agichtein

For the sake of simplicity: Unsupervised extraction of lexical simplifications from Wikipedia
Mark Yatskar, Bo Pang, Cristian Danescu-Niculescu-Mizil and Lillian Lee

Predicting Human-Targeted Translation Edit Rate via Untrained Human Annotators
Omar F. Zaidan and Chris Callison-Burch

Improving Semantic Role Classification with Selectional Preferences
Beñat Zapirain, Eneko Agirre, Lluís Márquez and Mihai Surdeanu
Generalizing Syntactic Structures for Product Attribute Candidate Extraction
Yanyan Zhao, Bing Qin, Shen Hu and Ting Liu

Demonstrations

Note: Demo abstracts are located in a companion volume of the proceedings.

Camtology: Intelligent Information Access for Science
Ted Briscoe, Karl Harrison, Andrew Naish-Guzman, Andy Parker, Advaith Siddharthan, David Sinclair, Mark Slater and Rebecca Watson

Summarizing Textual Information about Locations In a Geo-Spatial Information Display System
Congxing Cai and Eduard Hovy

Phrasal: A Statistical Machine Translation Toolkit for Exploring New Model Features
Daniel Cer, Michel Galley, Daniel Jurafsky and Christopher D. Manning

Multilingual Propbank Annotation Tools: Cornerstone and Jubilee
Jinho Choi, Claire Bonial and Martha Palmer

KSC-PaL: A Peer Learning Agent that Encourages Students to take the Initiative
Cynthia Kersey, Barbara Di Eugenio, Pamela Jordan and Sandra Katz

A Detailed, Accurate, Extensive, Available English Lexical Database
Adam Kilgarriff

An Interactive Tool for Supporting Error Analysis for Text Mining
Elijah Mayfield and Carolyn Penstein-Rosé

Serious Game Environments for Language and Culture Education
Alicia Sagae, W. Lewis Johnson and Rebecca Row

Interpretation of Partial Utterances in Virtual Human Dialogue Systems
Kenji Sagae, David DeVault and David Traum

Interactive Predictive Parsing using a Web-based Architecture
Ricardo Sánchez-Sáez, Luis A. Leiva, Joan-Andreu Sánchez and José-Miguel Benedí

SIMPLIFICA: A tool for authoring simplified texts in Brazilian Portuguese guided by readability assessments
Carolina Scarton, Matheus Oliveira, Arnaldo Candido Jr., Caroline Gasperin and Sandra Aluísio
Wednesday, June 2, 2010 (continued)

An Overview of Microsoft Web N-gram Corpus and Applications
Kuansan Wang, Chris Thrasher, Evelyne Viegas, Xiaolong Li and Bo-june (Paul) Hsu

6:30–8:30

Student Research Workshop Poster Session

Note: All student research workshop papers are located in a companion volume of the proceedings.

A Learning-based Sampling Approach to Extractive Summarization
Vishal Juneja, Sebastian Germesin and Thomas Kleinbauer

Temporal Relation Identification with Endpoints
Chong Min Lee

Identifying Opinion Holders and Targets with Dependency Parser in Chinese News Texts
Bin Lu

A Data Mining Approach to Learn Reorder Rules for SMT
Avinesh PVS

Fine-Tuning in Brazilian Portuguese-English Statistical Transfer Machine Translation: Verbal Tenses
Lucia Silva

Improving Syntactic Coordination Resolution using Language Modeling
Philip Ogren

On Automated Evaluation of Readability of Summaries: Capturing Grammaticality, Focus, Structure and Coherence
Ravikiran Vadlapudi and Rahul Katragadda

Extrinsic Parse Selection
David Goss-Grubbs

Towards a Matrix-based Distributional Model of Meaning
Eugenie Giesbrecht

Distinguishing Use and Mention in Natural Language
Shomir Wilson
Thursday, June 3, 2010

Best Paper Award Plenary Session

9:00–9:10  Best Paper Award: Introduction

9:10–9:40  “cba to check the spelling”: Investigating Parser Performance on Discussion Forum Posts
Jennifer Foster

9:40–10:15 Coreference Resolution in a Modular, Entity-Centered Model
Aria Haghighi and Dan Klein

10:15–10:45  Break

Machine Translation II

10:45–11:10 Stream-based Translation Models for Statistical Machine Translation
Abby Levenberg, Chris Callison-Burch and Miles Osborne

11:10–11:35 Extracting Parallel Sentences from Comparable Corpora using Document Level Alignment
Jason R. Smith, Chris Quirk and Kristina Toutanova

11:35–12:00 Statistical Machine Translation of Texts with Misspelled Words
Nicola Bertoldi, Mauro Cettolo and Marcello Federico

12:00–12:25 Everybody loves a rich cousin: An empirical study of transliteration through bridge languages
Mitesh M. Khapra, A Kumaran and Pushpak Bhattacharyya
Thursday, June 3, 2010 (continued)

**Machine Learning I**

10:45–11:10  *Discriminative Learning over Constrained Latent Representations*
Ming-Wei Chang, Dan Goldwasser, Dan Roth and Vivek Srikumar

11:10–11:35  *Some Empirical Evidence for Annotation Noise in a Benchmarked Dataset*
Beata Beigman Klebanov and Eyal Beigman

11:35–12:00  *Bayesian Inference for Finite-State Transducers*
David Chiang, Jonathan Graehl, Kevin Knight, Adam Pauls and Sujith Ravi

12:00–12:25  *Distributed Training Strategies for the Structured Perceptron*
Ryan McDonald, Keith Hall and Gideon Mann

**Information Retrieval and Extraction I**

10:45–11:10  *Term Weighting Schemes for Latent Dirichlet Allocation*
Andrew T. Wilson and Peter A. Chew

11:10–11:35  *Learning Dense Models of Query Similarity from User Click Logs*
Fabio De Bona, Stefan Riezler, Keith Hall, Massimiliano Ciaramita, Amaç Herdağdelen and Maria Holmqvist

11:35–12:00  *Learning to Link Entities with Knowledge Base*
Zhicheng Zheng, Fangtao Li, Minlie Huang and Xiaoyan Zhu

12:00–12:25  *Improving the Multilingual User Experience of Wikipedia Using Cross-Language Name Search*
Raghavendra Udupa and Mitesh M. Khapra
Thursday, June 3, 2010 (continued)

**Morphology/Phonology**

10:45–11:10  *Learning Words and Their Meanings from Unsegmented Child-directed Speech*
Bevan K. Jones, Mark Johnson and Michael C. Frank

11:10–11:35  *Subword Variation in Text Message Classification*
Robert Munro and Christopher D. Manning

11:35–12:00  *Automatic Diacritization for Low-Resource Languages Using a Hybrid Word and Conso-
nant CMM*
Robbie Haertel, Peter McClanahan and Eric K. Ringger

12:00–12:25  *Urdu Word Segmentation*
Nadir Durrani and Sarmad Hussain

**Lunch**

12:40–2:00  Panel: *Recent and Future HLT Challenges in Industry*

12:25–2:15  Lunch

**Machine Translation III**

2:15–2:40  *Enabling Monolingual Translators: Post-Editing vs. Options*
Philipp Koehn

2:40–3:05  *Online Learning for Interactive Statistical Machine Translation*
Daniel Ortiz-Martínez, Ismael García-Varea and Francisco Casacuberta

3:05–3:30  *The Best Lexical Metric for Phrase-Based Statistical MT System Optimization*
Daniel Cer, Christopher D. Manning and Daniel Jurafsky
Thursday, June 3, 2010 (continued)

Machine Learning II

2:15–2:40  *Variational Inference for Adaptor Grammars*  
Shay B. Cohen, David M. Blei and Noah A. Smith

2:40–3:05  *Type-Based MCMC*  
Percy Liang, Michael I. Jordan and Dan Klein

3:05–3:30  *Painless Unsupervised Learning with Features*  
Taylor Berg-Kirkpatrick, Alexandre Bouchard-Côté, John DeNero and Dan Klein

Generation

2:15–2:40  *Linguistic Steganography Using Automatically Generated Paraphrases*  
Ching-Yun Chang and Stephen Clark

2:40–3:05  *Prenominal Modifier Ordering via Multiple Sequence Alignment*  
Aaron Dunlop, Margaret Mitchell and Brian Roark

3:05–3:30  *Good Question! Statistical Ranking for Question Generation*  
Michael Heilman and Noah A. Smith

Leixcal Semantics

2:15–2:40  *Not All Seeds Are Equal: Measuring the Quality of Text Mining Seeds*  
Zornitsa Kozareva and Eduard Hovy

2:40–3:05  *Extracting Glosses to Disambiguate Word Senses*  
Weisi Duan and Alexander Yates

3:05–3:30  *Can Recognising Multiword Expressions Improve Shallow Parsing?*  
Ioannis Korkontzelos and Suresh Manandhar

3:30–4:00  Break
Thursday, June 3, 2010 (continued)

Parsing: Short Papers

4:00–4:15  
A Simple Approach for HPSG Supertagging Using Dependency Information  
Yao-zhong Zhang, Takuya Matsuzaki and Jun’ichi Tsujii

4:15–4:30  
Ensemble Models for Dependency Parsing: Cheap and Good?  
Mihai Surdeanu and Christopher D. Manning

4:30–4:45  
Enlarged Search Space for SITG Parsing  
Guillem Gascó, Joan-Andreu Sánchez and José-Miguel Benedí

4:45–5:00  
Improving Data Driven Dependency Parsing using Clausal Information  
Phani Gadde, Karan Jindal, Samar Husain, Dipti Misra Sharma and Rajeev Sangal

5:00–5:15  
A Treebank Query System Based on an Extracted Tree Grammar  
Seth Kulick and Ann Bies

5:15–5:30  
Reranking the Berkeley and Brown Parsers  
Mark Johnson and Ahmet Engin Ural

Noisy Genre: Short Papers

4:00–4:15  
An Exploration of Off Topic Conversation  
Whitney L. Cade, Blair A. Lehman and Andrew Olney

4:15–4:30  
Making Conversational Structure Explicit: Identification of Initiation-response Pairs within Online Discussions  
Yi-Chia Wang and Carolyn P. Rosé

4:30–4:45  
Engaging learning groups using Social Interaction Strategies  
Rohit Kumar and Carolyn P. Rosé

4:45–5:00  
Using Entity-Based Features to Model Coherence in Student Essays  
Jill Burstein, Joel Tetreault and Slava Andreyev

5:00–5:15  
Summarizing Microblogs Automatically  
Beaux Sharifi, Mark-Anthony Hutton and Jugal Kalita
Thursday, June 3, 2010 (continued)

5:15–5:30  
*Automatic Generation of Personalized Annotation Tags for Twitter Users*  
Wei Wu, Bin Zhang and Mari Ostendorf

**Morphology/Phonology: Short Papers**

4:00–4:15  
*Language identification of names with SVMs*  
Aditya Bhargava and Grzegorz Kondrak

4:15–4:30  
*Integrating Joint n-gram Features into a Discriminative Training Framework*  
Sittichai Jiampojamarn, Colin Cherry and Grzegorz Kondrak

4:30–4:45  
*A Hybrid Morphologically Decomposed Factored Language Models for Arabic LVCSR*  
Amr El-Desoky, Ralf Schlüter and Hermann Ney

4:45–5:00  
*Is Arabic Part of Speech Tagging Feasible Without Word Segmentation?*  
Emad Mohamed and Sandra Kübler

5:00–5:15  
*Arabic Mention Detection: Toward Better Unit of Analysis*  
Yassine Benajiba and Imed Zitouni

5:15–5:30  
*An MDL-based approach to extracting subword units for grapheme-to-phoneme conversion*  
Sravana Reddy and John Goldsmith

**Machine Learning: Short Papers**

4:00–4:15  
*Extracting Phrase Patterns with Minimum Redundancy for Unsupervised Speaker Role Classification*  
Bin Zhang, Brian Hutchinson, Wei Wu and Mari Ostendorf

4:15–4:30  
*Classification of Prosodic Events using Quantized Contour Modeling*  
Andrew Rosenberg

4:30–4:45  
*Investigations into the Crandem Approach to Word Recognition*  
Rohit Prabhavalkar, Preethi Jyothi, William Hartmann, Jeremy Morris and Eric Fosler-Lussier

4:45–5:00  
*Constraint-Driven Rank-Based Learning for Information Extraction*  
Sameer Singh, Limin Yao, Sebastian Riedel and Andrew McCallum
Thursday, June 3, 2010 (continued)

5:00–5:15  Softmax-Margin CRFs: Training Log-Linear Models with Cost Functions
           Kevin Gimpel and Noah A. Smith

5:15–5:30  Bitext-Based Resolution of German Subject-Object Ambiguities
           Florian Schwarck, Alexander Fraser and Hinrich Schütze

Friday, June 4, 2010

Plenary Session II

9:00–10:10 Invited Talk: Music, Language, and Computational Modeling: Lessons from the Key-Finding Problem
           David Temperley

10:10–10:40 Break

Parsing II

10:40–11:05 An Efficient Algorithm for Easy-First Non-Directional Dependency Parsing
           Yoav Goldberg and Michael Elhadad

11:05–11:30 From Baby Steps to Leapfrog: How “Less is More” in Unsupervised Dependency Parsing
           Valentin I. Spitkovsky, Hiyan Alshawi and Daniel Jurafsky

11:30–11:55 Relaxed Marginal Inference and its Application to Dependency Parsing
           Sebastian Riedel and David A. Smith

11:55–12:20 Optimal Parsing Strategies for Linear Context-Free Rewriting Systems
           Daniel Gildea
Friday, June 4, 2010 (continued)

**Sentiment Analysis**

10:40–11:05  *The viability of web-derived polarity lexicons*  
Leonid Velikovich, Sasha Blair-Goldensohn, Kerry Hannan and Ryan McDonald

11:05–11:30  *Dependency Tree-based Sentiment Classification using CRFs with Hidden Variables*  
Tetsuji Nakagawa, Kentaro Inui and Sadao Kurohashi

11:30–11:55  *Convolution Kernels for Opinion Holder Extraction*  
Michael Wiegand and Dietrich Klakow

11:55–12:20  *An Unsupervised Aspect-Sentiment Model for Online Reviews*  
Samuel Brody and Noemie Elhadad

**Information Retrieval and Extraction II**

10:40–11:05  *Joint Inference for Knowledge Extraction from Biomedical Literature*  
Hoifung Poon and Lucy Vanderwende

11:05–11:30  *Clinical Information Retrieval using Document and PICO Structure*  
Florian Boudin, Jian-Yun Nie and Martin Dawes

11:30–11:55  *Topic Models for Image Annotation and Text Illustration*  
Yansong Feng and Mirella Lapata

11:55–12:20  *Learning about Voice Search for Spoken Dialogue Systems*  
Rebecca Passonneau, Susan L. Epstein, Tiziana Ligorio, Joshua B. Gordon and Pravin Bhutada
Friday, June 4, 2010 (continued)

Lunch

12:20–2:00 Lunch

1:00–2:00 NAACL Business Meeting

Machine Translation IV

2:00–2:25 A Direct Syntax-Driven Reordering Model for Phrase-Based Machine Translation
Niyu Ge

2:25–2:50 Context-free reordering, finite-state translation
Chris Dyer and Philip Resnik

2:50–3:15 Improved Models of Distortion Cost for Statistical Machine Translation
Spence Green, Michel Galley and Christopher D. Manning

3:15–3:40 Why Synchronous Tree Substitution Grammars?
Andreas Maletti

Summarization

2:00–2:25 An extractive supervised two-stage method for sentence compression
Dimitrios Galanis and Ion Androutsopoulos

2:25–2:50 Interpretation and Transformation for Abstracting Conversations
Gabriel Murray, Giuseppe Carenini and Raymond Ng

2:50–3:15 Quantifying the Limits and Success of Extractive Summarization Systems Across Domains
Hakan Ceylan, Rada Mihalcea, Umut Özertem, Elena Lloret and Manuel Palomar

3:15–3:40 Multi-document Summarization via Budgeted Maximization of Submodular Functions
Hui Lin and Jeff Bilmes
Friday, June 4, 2010 (continued)

**Semantics II**

2:00–2:25 *Cross-lingual Induction of Selectional Preferences with Bilingual Vector Spaces*
Yves Peirsman and Sebastian Padó

2:25–2:50 *Latent SVMs for Semantic Role Labeling using LTAG Derivation Trees*
Yudong Liu, Gholamreza Haffari and Anoop Sarkar

2:50–3:15 *Unsupervised Induction of Semantic Roles*
Joel Lang and Mirella Lapata

3:15–3:40 *Probabilistic Frame-Semantic Parsing*
Dipanjan Das, Nathan Schneider, Desai Chen and Noah A. Smith

3:40–4:00 **Break**

**Machine Translation V**

4:00–4:25 *Expected Sequence Similarity Maximization*
Cyril Allauzen, Shankar Kumar, Wolfgang Macherey, Mehryar Mohri and Michael Riley

4:25–4:50 *Accurate Non-Hierarchical Phrase-Based Translation*
Michel Galley and Christopher D. Manning

4:50–5:15 *Model Combination for Machine Translation*
John DeNero, Shankar Kumar, Ciprian Chelba and Franz Och
Friday, June 4, 2010 (continued)

Discourse

4:00–4:25  
Detecting Emails Containing Requests for Action  
Andrew Lampert, Robert Dale and Cecile Paris

4:25–4:50  
Evaluating Hierarchical Discourse Segmentation  
Lucien Carroll

4:50–5:15  
Reformulating Discourse Connectives for Non-Expert Readers  
Advaith Siddharthan and Napoleon Katsos

Semantics III

4:00–4:25  
Tree Edit Models for Recognizing Textual Entailments, Paraphrases, and Answers to Questions  
Michael Heilman and Noah A. Smith

4:25–4:50  
Syntactic/Semantic Structures for Textual Entailment Recognition  
Yashar Mehdad, Alessandro Moschitti and Fabio Massimo Zanzotto

4:50–5:15  
Automatic Metaphor Interpretation as a Paraphrasing Task  
Ekaterina Shutova

5:15–5:30  
End of Main Conference