



# CONFERENCE PROCEEDINGS

SEPTEMBER 17-21

# EMNLP

CONFERENCE ON EMPIRICAL METHODS  
IN NATURAL LANGUAGE PROCESSING

# 2015 LISBON

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## Preface by the General Chair

August 25, 2015

Welcome to the 2015 Conference on Empirical Methods in Natural Language Processing. EMNLP is annually organized by SIGDAT, the Association for Computational Linguistics' special interest group on linguistic data and corpus-based approaches to NLP. This year the conference will be held on September 17–21 in the enchanting city of Lisbon, Portugal.<sup>1</sup>

EMNLP has continued to increase in prominence as one of the most important conferences in Natural Language Processing (NLP). This year the conference has experienced an unprecedented boost in submitted papers. I believe that this reflects both the growth of the NLP field and also the health and strength of the conference itself, with a history of many years of solid work. With this level of interest at submission time, we are also expecting a record attendance. The conference will span a five-day period this year, and it requires a growing organization structure.

Some of the features introduced in EMNLP 2014 will continue this year (e.g., tutorials, new chairs, posters as parallel sessions, flat rates and flexibility for tutorials and workshops, etc.). We also introduce some innovations, like a revised selection process for which talks are presented as talks versus posters.

This year I had the privilege of coordinating the conference from my General Chair position. This has been a very instructive and enriching exercise which showed me the conference as a whole, from many different angles. Prefaces in the proceedings invariably praise the team of organizers. This one will not be an exception. Organizing a large conference as EMNLP requires excellent people working as a team in multiple interrelated tasks. I have been lucky to work with an outstanding team of people, from whom I learnt a lot. These aren't empty words. I would like to thank each and every chair for the hard work that made the conference a reality.

The Program Chairs, Jian Su and Chris Callison-Burch, did an excellent job at putting together a very interesting program with over 300 papers. They had to deal with a very large number of submissions, which exceeded even our most optimistic expectations. As a consequence, they were forced to be creative and to find solutions on the fly to adapt to the situation. They recruited the largest ever program committee and successfully managed a huge reviewing and decision making process under a very tight schedule. A real gift for the general chair. They complemented the program with very interesting keynote speakers, Yoshua Bengio and Justin Grimmer who will present exciting research topics for our community.

The EMNLP 2015 main conference is accompanied by 7 workshops and 8 tutorials during the first two days. The Workshops Chairs, Zornitsa Kozareva and Jörg Tiedemann, and the Tutorials Chairs, Maggie Li and Khalil Sima'an, conducted the selection processes in a joint effort with the other ACL conferences in 2015 (NAACL and ACL-IJCNLP). This has been the standard procedure from last years. It has the advantage of starting early, avoiding duplicated reviewing and allowing a more balanced selection among conferences. EMNLP attracted a varied and interesting set of workshops and tutorials, which gives more value to the conference.

Daniele Pighin and Yuval Marton were responsible for the always difficult and sometimes thankless task of putting together the conference publications. This is a very complex effort which involves coordination with almost everyone in the team under the pressure of hard publication deadlines. Yuval is serving in this position for a second year. Staggered two year terms for publication chairs is a new addition for

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<sup>1</sup>Conference website: <http://www.emnlp2015.org>

EMNLP starting this year, and we hope that it will be a permanent feature. In the first year, publication chairs will learn and do the bulk of proceedings compilation. During the second year their role will be more advisory, instructing and helping the first-year chair. This procedure will help the transmission of the necessary know-how from year to year. Thanks to Yuval and Daniele for accepting the challenge and making it work wonderfully. Finally, this is the second year that EMNLP uses a mobile app for the conference program (Conference4me). The publication chairs also coordinated the integration of the app with SoftConf, which is now smoother and more seamless.

The local organization team was led by André Martins and João Graça. They did an amazing job, working hard and with all the complexities and subtleties of local arrangements. One of the keys for the success was the creation of a large team of local organizers with clearly defined roles and responsibilities. They appointed very committed people: Isabel Trancoso (Local Publicity Chair), Fernando Batista (Handbook Chair), Bruno Martins (Website and App Chair), Luísa Coheur (Student Volunteer Coordinator), and Helena Moniz (Local Arrangements Chair). Thanks to all. I am especially pleased about the new website, which was revamped and looks more professional everyday. This is certainly a good investment for the future.

A large conference as EMNLP needs to focus on dissemination activities too. Barbara Plank acted as the international Publicity Chair. She did a fantastic job and coordinated very well with the local publicity and the website chairs. The calls for papers, calls for participation, and main news of the conference were timely distributed through ACL, the usual distribution lists, and also through the conference website and two Facebook and Twitter accounts. The EMNLP2015 Twitter account garnered more followers than in previous years.

I am really grateful to SIGDAT. Its secretary, Noah Smith, acted as the liaison between SIGDAT and the conference organizers. He was always available and ready to help with very good advice. SIGDAT also provided the funds for the student scholarship program. These grants help covering traveling expenses to a dozen of students. The committee appointed for collecting the applications and making the decisions was formed by Francisco Guzmán and Lluís Padró, who had to analyze all the information and decide the awardees in only a few days.

Another sign of the health of EMNLP and the field in general is the interest showed by sponsors. Thanks to the work of our sponsorship team, formed by João Graça and Hang Li, in coordination with the ACL International Sponsorship Committee, we got a record number of 13 sponsors for EMNLP 2015 (2 platinum, 3 gold, 6 silver and 2 bronze). In addition to these direct sponsors, we also have several smaller supporters, exhibitors, and institutional partners. We are extremely grateful to all these companies and institutions, which make a better conference possible at a more affordable registration fee.

Additionally, we counted on the invaluable help of Priscilla Rasmussen, supporting the local organization in all fronts with her broad experience. She took care of the registration process too. We also got very good advice, know-how, and helpful software and forms from last year general chair and local organizers, Alessandro Moschitti and Kareem Darwish. Thank you.

Finally, I would like to thank the authors of submitted and accepted papers, and all the attendees to the conference, who will be the main actors from September 17 to September 21, 2015. I am convinced that we will experience a fantastic conference, scientifically exciting and full of fond memories, in the unique environment of Lisbon.

*Lluís Màrquez*  
EMNLP 2015 General Chair



## Preface by the Program Committee Co-Chairs

August 25, 2015

Welcome to the 2015 Conference on Empirical Methods in Natural Language Processing! This year we received a record number of submissions. There were 1300 valid submissions. The 600 long papers and 700 short papers were allocated to one of 15 areas. The most popular areas this year were Semantics, Statistical Models and Machine Learning Methods, Text Mining and NLP applications, and Machine Translation.

Reviewing for a conference this size involves an enormous volunteer effort from many individuals. We are very grateful to our 30 area chairs and to the more than 900 researchers who reviewed the submissions. We accepted 312 papers (157 long and 155 short papers), representing a global acceptance rate of 24%. An additional 17 papers accepted by the TACL journal were presented at the conference as well.

To decide whether the accepted papers should be presented as talks or posters, we asked the area chairs, the reviewers, and the authors of accepted papers to vote on which papers they would like to attend. We showed the title of each paper and its abstract, but not its authors. 400 people provided their input. We selected talks based on popularity, while ensuring that each area was represented by at least one session. Our rationale for taking a vote was that papers that many people wanted to attend would be better served by presenting a talk in a large room, while papers with more specialized interest would benefit from the one-on-one interactions facilitated by posters. Rather than doing large plenary poster sessions, we have scheduled two parallel poster sessions with small batches of thematically similar papers that will be run simultaneously with the talks.

We selected best papers from a shortlist of 20 papers that were nominated by the area chairs. The best paper committee ranked the nominees, and based on their rankings we selected the following papers for the best paper awards:

- Best paper - *Broad-coverage CCG Semantic Parsing with AMR* by Yoav Artzi, Kenton Lee and Luke Zettlemoyer.
- Best paper - *Semantically Conditioned LSTM-based Natural Language Generation for Spoken Dialogue Systems* by Tsung-Hsien Wen, Milica Gasic, Nikola Mrkšić, Pei-Hao Su, David Vandyke and Steve Young.

IBM has provided a cash scholarship for us to award to the best student paper. This will go to Tsung-Hsien Wen, since he is currently a student. The following papers received an honorable mention for the best paper award:

- Honorable mention for best paper - *Traversing Knowledge Graphs in Vector Space* by Kelvin Guu, John Miller and Percy Liang.
- Honorable mention for best paper - *Building a shared world: mapping distributional to model-theoretic semantic spaces* by Aurélie Herbelot and Eva Maria Vecchi.
- Honorable mention for best paper - *Language Understanding for Text-based Games using Deep Reinforcement Learning* by Karthik Narasimhan, Tejas Kulkarni and Regina Barzilay.
- Honorable mention for best short paper - *Joint Lemmatization and Morphological Tagging with Lemming* by Thomas Müller, Ryan Cotterell, Alexander Fraser and Hinrich Schütze.

- Honorable mention for best short paper - *Semi-Supervised Bootstrapping of Relationship Extractors with Distributional Semantics* by David S. Batista, Bruno Martins and Mário J. Silva.

This year we created a new “Best data set or resource” award, since so much work in our community is driven by data. The paper that receiving this inaugural distinction is:

- Best data set or resource - *A large annotated corpus for learning natural language inference* by Samuel R. Bowman, Gabor Angeli, Christopher Potts and Christopher D. Manning.

With two honorable mentions:

- Notable data set or resource - *That’s So Annoying!!!: A Lexical and Frame-Semantic Embedding Based Data Augmentation Approach to Automatic Categorization of Annoying Behaviors using #petpeeve Tweets* by William Yang Wang and Diyi Yang.
- Notable data set or resource - *Modeling Reportable Events as Turning Points in Narrative* by Jessica Ouyang and Kathy McKeown.

We decided to give more awards than in past years by recognizing papers with honorable mentions and by creating the new best data or resource award. Our goal was to recognize roughly the top 1% of all of the submissions to the conference with awards (recognizing approximately the top 5% of accepted papers). We are very grateful to our invited speakers Yoshua Bengio and Justin Grimmer.

Yoshua Bengio is professor of Computer Science and Operations Research at the Université de Montréal. He is the author of two books and more than 200 publications, the most cited being in the areas of deep learning, recurrent neural networks, probabilistic learning algorithms, natural language processing and manifold learning. He co-directs the Canadian Institute for Advanced Research’s program on deep learning. He is on the board of NIPS. Professor Bengio’s research into deep learning has had a dramatic impact on the field of NLP in the past few years, and has invigorated interest in AI through machine learning.

Justin Grimmer is an associate professor of Political Science at Stanford University. His research uses statistical methods to examine American politics. He is the author of two books on the topic “Representational Style in Congress: What Legislators Say and Why It Matters” and “The Impression of Influence: How Legislator Communication and Government Spending Cultivate a Personal Vote.” His work has appeared in the American Political Science Review, American Journal of Political Science, Journal of Politics, Political Analysis, Proceedings of the National Academy of Sciences, Regulation and Governance, and Poetics. Professor Grimmer’s research points to exciting new directions for computational social science and how the field of NLP can facilitate research in many areas.

We thank them in advance for coming to the conference and sharing their insights.

We would also like to thank our general chair Lluís Màrquez, André Martins and João Graça and colleagues for their excellent work with the local organization, and Yuval Marton and Daniele Pighin for doing an excellent job assembling these proceedings.

We thank SIGDAT for inviting us to serve as Program Co-Chairs of EMNLP 2015. We hope that the conference is an excellent one. Enjoy your stay in Lisbon!

*Chris Callison-Burch and Jian Su*  
EMNLP 2015 Program Committee Co-Chairs

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Deepak P; Ulrike Pado; Muntsa Padró; Gustavo Paetzold; Georgios Paliouras; Martha Palmer; Alessio Palmero Aprosio; Sinno J. Pan; Denis Paperno; Aasish Pappu; Rebecca J. Passonneau; Panupong Patsupat; Siddharth Patwardhan; Michael J. Paul; Adam Pauls; Ellie Pavlick; Lisa Pearl; Stephan Peitz; Filipa Peleja; Xiaochang Peng; Sergio Penkale; Gerald Penn; Bianca Pereira; Bryan Perozzi; Johann Petrak; Slav Petrov; Anselmo Peñas; Nghia The Pham; Lawrence Phillips; Karl Pichotta; Daniele Pighin; Mohammad Taher Pilehvar; Manfred Pinkal; Juan Pino; Yuval Pinter; Emily Pitler; Barbara Plank; Massimo Poesio; Tamara Polajnar; Heather Pon-Barry; Simone Paolo Ponzetto; Andrei Popescu-Belis; Maja Popović; Vinodkumar Prabhakaran; John Prager; Rashmi Prasad; Daniel Preoțiuc-Pietro; Prokopis Prokopidis; Matthew Purver; Verónica Pérez-Rosas;

Longhua Qian; Xian Qian; Lu Qin; Likun Qiu; Long Qiu; Xipeng Qiu; Lizhen Qu; Chris Quirk;

Ella Rabinovich; Will Radford; Preethi Raghavan; Altaf Rahman; Rafal Rak; Carlos Ramisch; Mohammad Sadegh Rasooli; Siva Reddy; Sravana Reddy; Marek Rei; Roi Reichart; Nils Reiter; Xiang Ren; Philip Resnik; Corentin Ribeyre; Kyle Richardson; Sebastian Riedel; Martin Riedl; Stefan Riezler; German Rigau; Laura Rimell; Fabio Rinaldi; Miguel Rios; Alan Ritter; Brian Roark; Angus Roberts; Kirk Roberts; Tim Rocktäschel; Horacio Rodriguez; Marcus Rohrbach; Stephen Roller; Francesco Ronzano; Andrew Rosenberg; Paolo Rosso; Michael Roth; Johann Roturier; Mickael Rouvier; Alla Rozovskaya; Eugen Ruppert;

Jun Sun; Markus Saers; Saurav Sahay; Hassan Saif; Hassan Sajjad; Keisuke Sakaguchi; Mohammad Salameh; Diarmuid Ó Séaghdha; Bahar Salehi; Tanja Samardžić; Mark Sammons; Germán Sanchis Trilles; Federico Sangati; Baskaran Sankaran; Motoki Sano; Felix Sasaki; Ryohei Sasano; Asad Sayeed; Carolina Scarton; David Schlangen; Natalie Schluter; Helmut Schmid; Nathan Schneider; Michael Schuhmacher; William Schuler; H. Andrew Schwartz; Lane Schwartz; Roy Schwartz; Holger Schwenk; Hinrich Schütze; Djamel Seddah; Satoshi Sekine; Jean Senellart; Rico Sennrich; Hendra Setiawan; Burr

Settles; Aliaksei Severyn; Serge Sharoff; Shuming Shi; Chaitanya Shivade; Maryam Siahbani; Carina Silberer; Yanchuan Sim; Khalil Sima'an; Patrick Simianer; Kiril Simov; Sameer Singh; Kevin Small; Peter Smit; Noah A. Smith; Jan Šnajder; Artem Sokolov; Swapna Somasundaran; Linfeng Song; Lucia Specia; Vivek Srikumar; Miloš Stanojević; Mark Steedman; Pontus Stenetorp; Brandon Stewart; Veselin Stoyanov; Carlo Strapparava; Karl Stratos; Emma Strubell; Jannik Strötgen; Jian Su; Qi Su; Kazunari Sugiyama; Le Sun; Weiwei Sun; Xu Sun; Mihai Surdeanu; Hisami Suzuki; Swabha Swayamdipta; György Szarvas; Stan Szpakowicz; Idan Szpektor; Felipe Sánchez-Martínez; Anders Sjøgaard; Patrick Saint-Dizier; Jinsong Su;

Hiroya Takamura; Partha P. Talukdar; Duyu Tang; Jian Tang; Jiliang Tang; Xavier Tannier; Kapil Thadani; Sam Thomson; Jörg Tiedemann; Christoph Tillmann; Ivan Titov; Nadi Tomeh; Sara Tonelli; Fatemeh Torabi Asr; Antonio Toral; Kristina Toutanova; Jun'ichi Tsujii; Oren Tsur; Yoshimasa Tsuruoka; Yulia Tsvetkov; Gokhan Tur; Francis Tyers; Oscar Täckström;

Raghavendra Udupa; Lyle Ungar; Olga Uryupina; Jakob Uszkoreit;

Sowmya Vajjala; Benjamin Van Durme; Daniele Vannella; Ashish Vaswani; Marc Verhagen; Yannick Versley; Laure Vieu; David Vilar; Luke Vilnis; Sami Virpioja; Karthik Visweswariah; Andreas Vlachos; Rob Voigt; Svitlana Volkova; Ivan Vulić; Vinod Vydiswaran; Marieke van Erp; Marten van Schijndel; Antal van den Bosch;

Houfeng Wang; Joachim Wagner; Aurelien Waite; Xiaojun Wan; Chi Wang; Chuan Wang; Hongling Wang; Hongning Wang; Lu Wang; Rui Wang; Sida I. Wang; Wen Wang; William Yang Wang; Zhiguo Wang; Zhongqing Wang; Zhuoran Wang; Taro Watanabe; Aleksander Wawer; Kellie Webster; Furu Wei; Zhongyu Wei; Daniel Weld; Janyce Wiebe; Michael Wiegand; John Wieting; Jason D Williams; Steven Wilson; Shuly Wintner; Guillaume Wisniewski; Silke Witt-Ehsani; Travis Wolfe; Kam-Fai Wong; Alina Wróblewska; Stephen Wu; Xianchao Wu; Yuanbin Wu; Joern Wuebker;

Yunqing Xia; Tong Xiao; Boyi Xie; Pengtao Xie; Deyi Xiong; Jia Xu; Liheng Xu; Ruifeng Xu; Wei Xu; Wenduan Xu; Ying Xu;

Rui Yan; Bin Yang; Weiwei Yang; Yaqin Yang; Yi Yang; Yi Yang; Helen Yannakoudakis; Jin-ge Yao; Xuchen Yao; Ainur Yessenalina; Xing Yi; Wen-tau Yih; Seid Muhie Yimam; Dani Yogatama; Bei Yu; Dianhai Yu; Liang-Chih Yu; Mo Yu; Zhou Yu; François Yvon; Tae Yano;

Deyu Zhou; Manzil Zaheer; Omar Zaidan; Fabio Massimo Zanzotto; Alessandra Zarcone; Sina Zarrieß; Rabih Zbib; Richard Zens; Torsten Zesch; Luke Zettlemoyer; Feifei Zhai; Ke Zhai; Jiajun Zhang; Kevin Zhang; Meishan Zhang; Min Zhang; Min Zhang; Qi Zhang; Wei Zhang; Wei-Nan Zhang; Yu Zhang; Yuan Zhang; Yuchen Zhang; Yue Zhang; Zhe Zhang; Zhichang Zhang; Hai Zhao; Jun Zhao; Kai Zhao; Qiuye Zhao; Shiqi Zhao; Wayne Xin Zhao; Xin Zhao; Yanyan Zhao; Zhi Zhong; Guangyou Zhou; Guodong Zhou; Junsheng Zhou; Mianwei Zhou; Xinjie Zhou; Jingbo Zhu; Muhua Zhu; Xiaodan Zhu; Imed Zitouni; Bowei Zou; Arkaitz Zubiaga; Pierre Zweigenbaum; Xiaoyan Zhu;

## **Additional Reviewers**

Abeed Sarker; Abouenour Lahsen; Afra Alishahi; Afshin Rahimi; Aitor García Pablos; Aitziber Atutxa Salazar; Alan Lee; Alicia Pérez Ramírez; Anders Johannsen; Anders Sjøgaard; Andreas Grivas; Anna Jørgensen; Annemarie Friedrich; Antonio Uva; Austin Matthews; Avihai Mejer; Baolin Peng; Benjamin Marie; Benjamin Yap; Bo Han; Bonnie Webber; Bradley Hauer; Camilo Thorne; Chong Zhou; Daniel Torregrosa; David Buttler; Davy Weissenbacher; Desmond Ong; Ehsan Emazadeh; Elias Zavitsanos; Enrique Vidal; Fandong Meng; Federico Nanni; Filipa Peleja; Francis Ferraro; Francisco Rangel; Gözde Özbal; Henry Anaya-Sanchez; Hieu Pham; Ignacio Iacobacci; I-Ta Lee; Jack Hessel; James Cross; Jing Li; Jing Ma; Jintao Ye; Joost Bastings; Kai Zhao; Kateryna Tymoshenko; Kazuya Kawakami; Ke Tao; Ke Zhai; Keith Stevens; Lane Schwartz; Lasse Borgholt; Leila Wehbe; Long Duong; Lucie Flekova; Marc Franco-Salvador; Marco Del Tredici; Maximin Coavoux; Meng Zhang; Michal Lukasik; Mingxuan Wang; Mohamed Mouine; Mohammad Salameh; Muhua Zhu; Nadir Durrani; Nan Yang; Nichola Lubold; Nima Pourdamghani; Nina Zhou; Phil Williams; Prodromos Malakasiotis; Rachel Rudinger; Rui Xia; Serra Sinem Tekiroglu; Shachi H Kumar; Shruti Rijhwani; Songxian Xie; Stas Semeniuta; Stefano Faralli; Stephan Gouws; Stephen Maddock; Sungjoon Park; Susana Palmaz; Tobias Domhan; Tomer Levinboim; Vaggelis Michelioudakis; Vassilis Papavassiliou; Vivek Kulkarni; Wang Ling; Wen Wang; Weston Feely; Wu Kui; Xanda Schofield; Xiang Li; Xiaodong He; Yan Fu; Yanran Li; Yi Luan; Yijia Liu; Yulia Tsvetkov; Zhihua Zhang.



# Invited Speaker: Yoshua Bengio

## Deep Learning of Semantic Representations

**Abstract:** The core ingredient of deep learning is the notion of distributed representation. This talk will start by explaining its theoretical advantages, in comparison with non-parametric methods based on counting frequencies of occurrence of observed tuples of values (like with n-grams). The talk will then explain how having multiple levels of representation, i.e., depth, can in principle give another exponential advantage. Neural language models have been extremely successful in recent years but extending their reach from language modeling to machine translation is very appealing because it forces the learned intermediate representations to capture meaning, and we found that the resulting word embeddings are qualitatively different. Recently, we introduced the notion of attention-based encoder-decoder systems, with impressive results on machine translation several language pairs and for mapping an image to a sentence, and these results will conclude the talk.

**Biography:** Yoshua Bengio received a PhD in Computer Science from McGill University, Canada in 1991. After two post-doctoral years, one at M.I.T. with Michael Jordan and one at AT&T Bell Laboratories with Yann LeCun and Vladimir Vapnik, he became professor at the Department of Computer Science and Operations Research at Université de Montréal. He is the author of two books and more than 200 publications, the most cited being in the areas of deep learning, recurrent neural networks, probabilistic learning algorithms, natural language processing and manifold learning. He is among the most cited Canadian computer scientists and is or has been associate editor of the top journals in machine learning and neural networks. Since '2000 he holds a Canada Research Chair in Statistical Learning Algorithms, since '2006 an NSERC Industrial Chair, since '2005 his is a Senior Fellow of the Canadian Institute for Advanced Research and since 2014 he co-directs its program focused on deep learning. He is on the board of the NIPS foundation and has been program chair and general chair for NIPS. He has co-organized the Learning Workshop for 14 years and co-created the new International Conference on Learning Representations. His current interests are centered around a quest for AI through machine learning, and include fundamental questions on deep learning and representation learning, the geometry of generalization in high-dimensional spaces, manifold learning, biologically inspired learning algorithms, and challenging applications of statistical machine learning.



## **Invited Speaker: Justin Grimmer**

### **Measuring How Elected Officials and Constituents Communicate**

**Abstract:** This talk will show how elected officials use communication to cultivate support with constituents, how constituents express their views to elected officials, and why biases in both kinds of communication matter for political representation. To demonstrate the bias and its effects, I propose to use novel collections of political texts and new text as data methods. Using the new data and methods, I will show how the incentives of communication contribute to perceptions of an angry public and vitriolic politicians. Among elected officials, the ideologically extreme members of Congress disproportionately participate in policy debates, resulting in political debates that occur between the most extreme members of each party. Among constituents, the most ideologically extreme and angry voters disproportionately contact their member of Congress, creating the impression of a polarized and vitriolic public. The talk will explain how the findings help us to understand how representation occurs in American politics, while also explaining how computational tools can help address questions in the social sciences.

**Biography:** Justin Grimmer is an associate professor of political science at Stanford University. His research examines how representation occurs in American politics using new statistical methods. His first book *Representational Style in Congress: What Legislators Say and Why It Matters* (Cambridge University Press, 2013) shows how senators define the type of representation they provide constituents and how this affects constituents' evaluations and was awarded the 2014 Richard Fenno Prize. His second book *The Impression of Influence: How Legislator Communication and Government Spending Cultivate a Personal Vote* (Princeton University Press, 2014 with Sean J. Westwood and Solomon Messing) demonstrates how legislators ensure they receive credit for government actions. His work has appeared in the *American Political Science Review*, *American Journal of Political Science*, *Journal of Politics*, *Political Analysis*, *Proceedings of the National Academy of Sciences*, *Regulation and Governance*, and *Poetics*.





# Conference Program

**Friday, September 18, 2015**

**18:30–20:00** Welcome Reception

**Saturday, September 19, 2015**

**07:30–18:00** Registration

**08:40–10:00** Session P1: Plenary Session

08:40–09:00 *Opening Remarks and Introductory Speeches*  
General Chair, Program Co-Chairs and Local Co-Chairs

09:00–10:00 *Invited Talk: Deep Learning of Semantic Representations*  
Yoshua Bengio

**10:00–10:30** *Coffee break*

**10:30–12:10** Session 1A: Semantics (Long + TACL Papers)

10:30–10:55 *Language Understanding for Text-based Games using Deep Reinforcement Learning*  
Karthik Narasimhan, Tejas Kulkarni and Regina Barzilay

10:55–11:20 *Distributional vectors encode referential attributes*  
Abhijeet Gupta, Gemma Boleda, Marco Baroni and Sebastian Padó

11:20–11:45 *Building a shared world: mapping distributional to model-theoretic semantic spaces*  
Aurélie Herbelot and Eva Maria Vecchi

11:45–12:10 *[TACL] Deriving Boolean Structures from Distributional Vectors*  
Germán Kruszewski, Denis Paperno and Marco Baroni

**Saturday, September 19, 2015 (continued)**

**10:30–12:10 Session 1B: Machine Translation (Long + TACL Papers)**

10:30–10:55 *Dependency Graph-to-String Translation*

Liangyou Li, Andy Way and Qun Liu

10:55–11:20 *Reordering Grammar Induction*

Miloš Stanojević and Khalil Sima'an

11:20–11:45 *Syntax-based Rewriting for Simultaneous Machine Translation*

He He, Alvin Grissom II, John Morgan, Jordan Boyd-Graber and Hal Daumé III

11:45–12:10 *[TACL] Modelling and Optimizing on Syntactic N-Grams for Statistical Machine Translation*

Rico Sennrich

**10:30–12:10 Session 1C: NLP for Web and Social Media, including Computational Social Science (Long Papers)**

10:30–10:55 *Identifying Political Sentiment between Nation States with Social Media*

Nathanael Chambers, Victor Bowen, Ethan Genco, Xisen Tian, Eric Young, Ganesh Harihara and Eugene Yang

10:55–11:20 *Open Extraction of Fine-Grained Political Statements*

David Bamman and Noah A. Smith

11:20–11:45 *Using Personal Traits For Brand Preference Prediction*

Chao Yang, Shimei Pan, Jalal Mahmud, Huahai Yang and Padmini Srinivasan

11:45–12:10 *Semantic Annotation for Microblog Topics Using Wikipedia Temporal Information*

Tuan Tran, Nam Khanh Tran, Asmelash Teka Hadgu and Robert Jäschke

**10:30–12:10 Session 1D (P1-4): Summarization (Long Paper Posters)**

*System Combination for Multi-document Summarization*

Kai Hong, Mitchell Marcus and Ani Nenkova

*Phrase-based Compressive Cross-Language Summarization*

Jin-ge Yao, Xiaojun Wan and Jianguo Xiao

*Re-evaluating Automatic Summarization with BLEU and 192 Shades of ROUGE*

Yvette Graham

*Indicative Tweet Generation: An Extractive Summarization Problem?*

Priya Sidhaye and Jackie Chi Kit Cheung

**Saturday, September 19, 2015 (continued)**

**10:30–12:10 Session 1D (P5): Language and Vision (Long Paper Posters)**

*Visual Bilingual Lexicon Induction with Transferred ConvNet Features*

Douwe Kiela, Ivan Vulić and Stephen Clark

**10:30–12:10 Session 1D (P6-9): Sentiment Analysis and Opinion Mining (Long Paper Posters)**

*Cross Lingual Sentiment Analysis using Modified BRAE*

Sarthak Jain and Shashank Batra

*Monotone Submodularity in Opinion Summaries*

Jayanth Jayanth, Jayaprakash Sundararaj and Pushpak Bhattacharyya

*Joint Prediction for Entity/Event-Level Sentiment Analysis using Probabilistic Soft Logic Models*

Lingjia Deng and Janyce Wiebe

*Learning to Recognize Affective Polarity in Similes*

Ashequl Qadir, Ellen Riloff and Marilyn Walker

**10:30–12:10 Session 1E (P1-3): Language and Vision (Short Paper Posters)**

*Cross-document Event Coreference Resolution based on Cross-media Features*

Tongtao Zhang, Hongzhi Li, Heng Ji and Shih-Fu Chang

*A Survey of Current Datasets for Vision and Language Research*

Francis Ferraro, Nasrin Mostafazadeh, Ting-Hao Huang, Lucy Vanderwende, Jacob Devlin, Michel Galley and Margaret Mitchell

*Combining Geometric, Textual and Visual Features for Predicting Prepositions in Image Descriptions*

Arnau Ramisa, Josiah Wang, Ying Lu, Emmanuel Dellandrea, Francesc Moreno-Noguer and Robert Gaizauskas

**Saturday, September 19, 2015 (continued)**

**10:30–12:10 Session 1E (P4-16): Statistical Models and Machine Learning Methods (Short Paper Posters)**

*On A Strictly Convex IBM Model 1*

Andrei Simion, Michael Collins and Cliff Stein

*Factorization of Latent Variables in Distributional Semantic Models*

Arvid Österlund, David Ödling and Magnus Sahlgren

*Non-lexical neural architecture for fine-grained POS Tagging*

Matthieu Labeau, Kevin Löser and Alexandre Allauzen

*Online Representation Learning in Recurrent Neural Language Models*

Marek Rei

*A Model of Zero-Shot Learning of Spoken Language Understanding*

Majid Yazdani and James Henderson

*Modeling Tweet Arrival Times using Log-Gaussian Cox Processes*

Michal Lukasik, P. K. Srijith, Trevor Cohn and Kalina Bontcheva

*Pre-Computable Multi-Layer Neural Network Language Models*

Jacob Devlin, Chris Quirk and Arul Menezes

*Birds of a Feather Linked Together: A Discriminative Topic Model using Link-based Priors*

Weiwei Yang, Jordan Boyd-Graber and Philip Resnik

*Aligning Knowledge and Text Embeddings by Entity Descriptions*

Huaping Zhong, Jianwen Zhang, Zhen Wang, Hai Wan and Zheng Chen

*An Empirical Analysis of Optimization for Max-Margin NLP*

Jonathan K. Kummerfeld, Taylor Berg-Kirkpatrick and Dan Klein

*Learning Better Embeddings for Rare Words Using Distributional Representations*

Irina Sergiyenya and Hinrich Schütze

*Composing Relationships with Translations*

Alberto Garcia-Duran, Antoine Bordes and Nicolas Usunier

*Noise or additional information? Leveraging crowdsource annotation item agreement for natural language tasks.*

Emily Jamison and Iryna Gurevych

**12:10–13:30 Lunch**

**Saturday, September 19, 2015 (continued)**

**13:30–15:10 Session 2A: Statistical Models and Machine Learning Methods (Long + TACL Papers)**

- 13:30–13:55 *Evaluation methods for unsupervised word embeddings*  
Tobias Schnabel, Igor Labutov, David Mimno and Thorsten Joachims
- 13:55–14:20 *Efficient Methods for Incorporating Knowledge into Topic Models*  
Yi Yang, Doug Downey and Jordan Boyd-Graber
- 14:20–14:45 *Traversing Knowledge Graphs in Vector Space*  
Kelvin Guu, John Miller and Percy Liang
- 14:45–15:10 *[TACL] Improving Topic Models with Latent Feature Word Representations*  
Dat Quoc Nguyen, Richard Billingsley, Lan Du and Mark Johnson

**13:30–15:10 Session 2B: Tagging, Chunking and Parsing (Long +TACL Papers)**

- 13:30–13:55 *Density-Driven Cross-Lingual Transfer of Dependency Parsers*  
Mohammad Sadegh Rasooli and Michael Collins
- 13:55–14:20 *A Neural Network Model for Low-Resource Universal Dependency Parsing*  
Long Duong, Trevor Cohn, Steven Bird and Paul Cook
- 14:20–14:45 *Improved Transition-based Parsing by Modeling Characters instead of Words with LSTMs*  
Miguel Ballesteros, Chris Dyer and Noah A. Smith
- 14:45–15:10 *[TACL] Approximation-Aware Dependency Parsing by Belief Propagation*  
Matthew R. Gormley, Mark Dredze and Jason Eisner

**13:30–15:10 Session 2C: Summarization (Long Papers)**

- 13:30–13:55 *Sentence Compression by Deletion with LSTMs*  
Katja Filippova, Enrique Alfonseca, Carlos A. Colmenares, Lukasz Kaiser and Oriol Vinyals
- 13:55–14:20 *An Empirical Comparison Between N-gram and Syntactic Language Models for Word Ordering*  
Jiangming Liu and Yue Zhang
- 14:20–14:45 *A Neural Attention Model for Abstractive Sentence Summarization*  
Alexander M. Rush, Sumit Chopra and Jason Weston
- 14:45–15:10 *Scientific Article Summarization Using Citation-Context and Article’s Discourse Structure*  
Arman Cohan and Nazli Goharian

**Saturday, September 19, 2015 (continued)**

**13:30–15:10 Session 2D (P1-9): Text Mining and NLP Applications (Long Paper Posters)**

*Hashtag Recommendation Using Dirichlet Process Mixture Models Incorporating Types of Hashtags*

Yeyun Gong, Qi Zhang and Xuanjing Huang

*A Graph-based Readability Assessment Method using Word Coupling*

Zhiwei Jiang, Gang Sun, Qing Gu, Tao Bai and Daoxu Chen

*More Features Are Not Always Better: Evaluating Generalizing Models in Incident Type Classification of Tweets*

Axel Schulz, Christian Guckelsberger and Benedikt Schmidt

*Flexible Domain Adaptation for Automated Essay Scoring Using Correlated Linear Regression*

Peter Phandi, Kian Ming A. Chai and Hwee Tou Ng

*Show Me Your Evidence - an Automatic Method for Context Dependent Evidence Detection*

Ruty Rinott, Lena Dankin, Carlos Alzate Perez, Mitesh M. Khapra, Ehud Aharoni and Noam Slonim

*Spelling Correction of User Search Queries through Statistical Machine Translation*

Saša Hasan, Carmen Heger and Saab Mansour

*Human Evaluation of Grammatical Error Correction Systems*

Roman Grundkiewicz, Marcin Junczys-Dowmunt and Edward Gillian

*Learning a Deep Hybrid Model for Semi-Supervised Text Classification*

Alexander Ororbia II, C. Lee Giles and David Reitter

*Joint Embedding of Query and Ad by Leveraging Implicit Feedback*

Sungjin Lee and Yifan Hu

Saturday, September 19, 2015 (continued)

**13:30–15:10 Session 2E (P1-11): Information Extraction (Short Paper Posters)**

*Automatic Extraction of Time Expressions Accross Domains in French Narratives*

Mike Donald Tapi Nzali, Xavier Tannier and Aurelie Neveol

*Semi-Supervised Bootstrapping of Relationship Extractors with Distributional Semantics*

David S. Batista, Bruno Martins and Mário J. Silva

*Extraction and generalisation of variables from scientific publications*

Erwin Marsi and Pinar Öztürk

*Named entity recognition with document-specific KB tag gazetteers*

Will Radford, Xavier Carreras and James Henderson

*"A Spousal Relation Begins with a Deletion of engage and Ends with an Addition of divorce": Learning State Changing Verbs from Wikipedia Revision History*

Derry Tanti Wijaya, Ndapandula Nakashole and Tom Mitchell

*Improving Distant Supervision for Information Extraction Using Label Propagation Through Lists*

Lidong Bing, Sneha Chaudhari, Richard Wang and William Cohen

*An Entity-centric Approach for Overcoming Knowledge Graph Sparsity*

Manjunath Hegde and Partha P. Talukdar

*Semantic Relation Classification via Convolutional Neural Networks with Simple Negative Sampling*

Kun Xu, Yansong Feng, Songfang Huang and Dongyan Zhao

*A Baseline Temporal Tagger for all Languages*

Jannik Strötgen and Michael Gertz

*Named Entity Recognition for Chinese Social Media with Jointly Trained Embeddings*

Nanyun Peng and Mark Dredze

*Inferring Binary Relation Schemas for Open Information Extraction*

Kangqi Luo, Xusheng Luo and Kenny Zhu

**Saturday, September 19, 2015 (continued)**

**13:30–15:10 Session 2E (P12-16): Information Retrieval and Question Answering (Short Paper Posters)**

*LDTM: A Latent Document Type Model for Cumulative Citation Recommendation*  
Jingang Wang, Dandan Song, Zhiwei Zhang, Lejian Liao, Luo Si and Chin-Yew Lin

*Online Sentence Novelty Scoring for Topical Document Streams*  
Sungjin Lee

*Global Thread-level Inference for Comment Classification in Community Question Answering*

Shafiq Joty, Alberto Barrón-Cedeño, Giovanni Da San Martino, Simone Filice, Luís Márquez, Alessandro Moschitti and Preslav Nakov

*Key Concept Identification for Medical Information Retrieval*  
Jiaping Zheng and Hong Yu

*Image-Mediated Learning for Zero-Shot Cross-Lingual Document Retrieval*  
Ruka Funaki and Hideki Nakayama

**15:10–15:40 Coffee break**

**15:40–17:20 Session 3A: Sentiment Analysis and Opinion Mining (Long Papers)**

15:40–16:05 *Detecting Risks in the Banking System by Sentiment Analysis*  
Clemens Nopp and Allan Hanbury

16:05–16:30 *Sentiment Flow - A General Model of Web Review Argumentation*  
Henning Wachsmuth, Johannes Kiesel and Benno Stein

16:30–16:55 *Neural Networks for Open Domain Targeted Sentiment*  
Meishan Zhang, Yue Zhang and Duy Tin Vo

16:55–17:20 *Extracting Condition-Opinion Relations Toward Fine-grained Opinion Mining*  
Yuki Nakayama and Atsushi Fujii



**Saturday, September 19, 2015 (continued)**

**15:40–17:20 Session 3B: Semantics (Long +TACL Papers)**

- 15:40–16:05 *A large annotated corpus for learning natural language inference*  
Samuel R. Bowman, Gabor Angeli, Christopher Potts and Christopher D. Manning
- 16:05–16:30 *Question-Answer Driven Semantic Role Labeling: Using Natural Language to Annotate Natural Language*  
Luheng He, Mike Lewis and Luke Zettlemoyer
- 16:30–16:55 *[TACL] It's All Fun and Games until Someone Annotates: Video Games with a Purpose for Linguistic Annotation.*  
David Jurgens and Roberto Navigli
- 16:55–17:20 *[TACL] Semantic Proto-Roles*  
Drew Reisinger, Rachel Rudinger, Francis Ferraro, Kyle Rawlins and Benjamin Van Durme

**15:40–17:20 Session 3C: Information Retrieval and Question Answering (Long Papers)**

- 15:40–16:05 *Name List Only? Target Entity Disambiguation in Short Texts*  
Yixin Cao, Juanzi Li, Xiaofei Guo, Shuanhu Bai, Heng Ji and Jie Tang
- 16:05–16:30 *Biography-Dependent Collaborative Entity Archiving for Slot Filling*  
Yu Hong, Xiaobin Wang, Yadong Chen, Jian Wang, Tongtao Zhang and Heng Ji
- 16:30–16:55 *Stochastic Top-k ListNet*  
Tianyi Luo, Dong Wang, Rong Liu and Yiqiao Pan
- 16:55–17:20 *Exploring Markov Logic Networks for Question Answering*  
Tushar Khot, Niranjan Balasubramanian, Eric Gribkoff, Ashish Sabharwal, Peter Clark and Oren Etzioni

Saturday, September 19, 2015 (continued)

15:40–17:20 Session 3D (P1-9): Information Extraction (Long + TACL Paper Posters)

*Language and Domain Independent Entity Linking with Quantified Collective Validation*

Han Wang, Jin Guang Zheng, Xiaogang Ma, Peter Fox and Heng Ji

*Modeling Relation Paths for Representation Learning of Knowledge Bases*

Yankai Lin, Zhiyuan Liu, Huanbo Luan, Maosong Sun, Siwei Rao and Song Liu

*Corpus-level Fine-grained Entity Typing Using Contextual Information*

Yadollah Yaghoobzadeh and Hinrich Schütze

*Knowledge Base Unification via Sense Embeddings and Disambiguation*

Claudio Delli Bovi, Luis Espinosa Anke and Roberto Navigli

*Open-Domain Name Error Detection using a Multi-Task RNN*

Hao Cheng, Hao Fang and Mari Ostendorf

*Extracting Relations between Non-Standard Entities using Distant Supervision and Imitation Learning*

Isabelle Augenstein, Andreas Vlachos and Diana Maynard

*Sieve-Based Spatial Relation Extraction with Expanding Parse Trees*

Jennifer D'Souza and Vincent Ng

*[TACL] Cross-Document Co-Reference Resolution using Sample-Based Clustering with Knowledge Enrichment*

Sourav Dutta and Gerhard Weikum

*[TACL] Combining Minimally-supervised Methods for Arabic Named Entity Recognition*

Maha Althobaiti, Udo Kruschwitz and Massimo Poesio

Saturday, September 19, 2015 (continued)

15:40–17:20 Session 3E (P1-13): Text Mining and NLP Applications (Short Paper Posters)

*Mr. Bennet, his coachman, and the Archbishop walk into a bar but only one of them gets recognized: On The Difficulty of Detecting Characters in Literary Texts*  
Hardik Vala, David Jurgens, Andrew Piper and Derek Ruths

*Convolutional Sentence Kernel from Word Embeddings for Short Text Categorization*  
Jonghoon Kim, Francois Rousseau and Michalis Vazirgiannis

*Predicting the Structure of Cooking Recipes*  
Jermsak Jermsurawong and Nizar Habash

*TSDPMM: Incorporating Prior Topic Knowledge into Dirichlet Process Mixture Models for Text Clustering*  
Linmei Hu, Juanzi Li, Xiaoli Li, Chao Shao and Xuzhong Wang

*Sentence Modeling with Gated Recursive Neural Network*  
Xinchi Chen, Xipeng Qiu, Chenxi Zhu, Shiyu Wu and Xuanjing Huang

*Learning Timeline Difference for Text Categorization*  
Fumiyo Fukumoto and Yoshimi Suzuki

*Summarizing Topical Contents from PubMed Documents Using a Thematic Analysis*  
Sun Kim, Lana Yeganova and W John Wilbur

*Recognizing Biographical Sections in Wikipedia*  
Alessio Palmero Aprosio and Sara Tonelli

*Learn to Solve Algebra Word Problems Using Quadratic Programming*  
Lipu Zhou, Shuaixiang Dai and Liwei Chen

*An Unsupervised Method for Discovering Lexical Variations in Roman Urdu Informal Text*  
Abdul Rafae, Abdul Qayyum, Muhammad Moeenuddin, Asim Karim, Hassan Sajjad and Faisal Kamiran

*Component-Enhanced Chinese Character Embeddings*  
Yanran Li, Wenjie Li, Fei Sun and Sujian Li

*Multi-label Text Categorization with Joint Learning Predictions-as-Features Method*  
Li Li, Houfeng Wang, Xu Sun, Baobao Chang, Shi Zhao and Lei Sha

*A Framework for Comparing Groups of Documents*  
Arun Maiya

**Saturday, September 19, 2015 (continued)**

**Sunday, September 20, 2015**

**07:30–18:00 Registration**

**09:00–10:00 Session P2: Plenary Session**

*Invited Talk: Measuring How Elected Officials and Constituents Communicate*  
Justin Grimmer

**10:00–10:30 Coffee break**

**10:30–12:10 Session 4A: Information Extraction (Long Papers)**

10:30–10:55 *C3EL: A Joint Model for Cross-Document Co-Reference Resolution and Entity Linking*  
Sourav Dutta and Gerhard Weikum

10:55–11:20 *Joint Mention Extraction and Classification with Mention Hypergraphs*  
Wei Lu and Dan Roth

11:20–11:45 *FINET: Context-Aware Fine-Grained Named Entity Typing*  
Luciano Del Corro, Abdalghani Abujabal, Rainer Gemulla and Gerhard Weikum

11:45–12:10 *Joint Entity Recognition and Disambiguation*  
Gang Luo, Xiaojiang Huang, Chin-Yew Lin and Zaiqing Nie

**10:30–12:10 Session 4B: Statistical Models and Machine Learning Methods (Long Papers)**

10:30–10:55 *How Much Information Does a Human Translator Add to the Original?*  
Barret Zoph, Marjan Ghazvininejad and Kevin Knight

10:55–11:20 *Hierarchical Recurrent Neural Network for Document Modeling*  
Rui Lin, Shujie Liu, Muyun Yang, Mu Li, Ming Zhou and Sheng Li

11:20–11:45 *Auto-Sizing Neural Networks: With Applications to n-gram Language Models*  
Kenton Murray and David Chiang

11:45–12:10 *Dual Decomposition Inference for Graphical Models over Strings*  
Nanyun Peng, Ryan Cotterell and Jason Eisner

**Sunday, September 20, 2015 (continued)**

**10:30–12:10 Session 4C: Discourse (Long +TACL Papers)**

- 10:30–10:55 *Discourse parsing for multi-party chat dialogues*  
Stergos Afantenos, Eric Kow, Nicholas Asher and Jérémy Perret
- 10:55–11:20 *Joint prediction in MST-style discourse parsing for argumentation mining*  
Andreas Peldszus and Manfred Stede
- 11:20–11:45 *[TACL] One Vector is Not Enough: Entity-Augmented Distributed Semantics for Discourse Relations*  
Yangfeng Ji and Jacob Eisenstein
- 11:45–12:10 *[TACL] Latent Structures for Coreference Resolution*  
Sebastian Martschat and Michael Strube

**10:30–12:10 Session 4D (P1-9): Semantics (Long Paper Posters)**

- Feature-Rich Two-Stage Logistic Regression for Monolingual Alignment*  
Md Arafat Sultan, Steven Bethard and Tamara Sumner
- Semantic Role Labeling with Neural Network Factors*  
Nicholas FitzGerald, Oscar Täckström, Kuzman Ganchev and Dipanjan Das
- RELLY: Inferring Hypernym Relationships Between Relational Phrases*  
Adam Grycner, Gerhard Weikum, Jay Pujara, James Foulds and Lise Getoor
- Mise en Place: Unsupervised Interpretation of Instructional Recipes*  
Chloé Kiddon, Ganesa Thandavam Ponnuraj, Luke Zettlemoyer and Yejin Choi
- Semantic Framework for Comparison Structures in Natural Language*  
Omid Bakhshandeh and James Allen
- Sarcastic or Not: Word Embeddings to Predict the Literal or Sarcastic Meaning of Words*  
Debanjan Ghosh, Weiwei Guo and Smaranda Muresan
- Incorporating Trustiness and Collective Synonym/Contrastive Evidence into Taxonomy Construction*  
Tuan Luu Anh, Jung-jae Kim and See Kiong Ng
- Learning to Automatically Solve Logic Grid Puzzles*  
Arindam Mitra and Chitta Baral

Sunday, September 20, 2015 (continued)

**10:30–12:10 Session 4E (P1-13): Machine Translation and Multilinguality (Short Paper Posters)**

*Improving fast\_align by Reordering*

Chenchen Ding, Masao Utiyama and Eiichiro Sumita

*Touch-Based Pre-Post-Editing of Machine Translation Output*

Benjamin Marie and Aurélien Max

*A Discriminative Training Procedure for Continuous Translation Models*

Quoc-Khanh DO, Alexandre Allauzen and François Yvon

*System Combination for Machine Translation through Paraphrasing*

Wei-Yun Ma and Kathleen McKeown

*Hierarchical Incremental Adaptation for Statistical Machine Translation*

Joern Wuebker, Spence Green and John DeNero

*ReVal: A Simple and Effective Machine Translation Evaluation Metric Based on Recurrent Neural Networks*

Rohit Gupta, Constantin Orasan and Josef van Genabith

*Investigating Continuous Space Language Models for Machine Translation Quality Estimation*

Kashif Shah, Raymond W. M. Ng, Fethi Bougares and Lucia Specia

*Supervised Phrase Table Triangulation with Neural Word Embeddings for Low-Resource Languages*

Tomer Levinboim and David Chiang

*Translation Invariant Word Embeddings*

Kejun Huang, Matt Gardner, Evangelos Papalexakis, Christos Faloutsos, Nikos Sidiropoulos, Tom Mitchell, Partha P. Talukdar and Xiao Fu

*Hierarchical Phrase-based Stream Decoding*

Andrew Finch, Xiaolin Wang, Masao Utiyama and Eiichiro Sumita

*Rule Selection with Soft Syntactic Features for String-to-Tree Statistical Machine Translation*

Fabienne Braune, Nina Seemann and Alexander Fraser

*Motivating Personality-aware Machine Translation*

Shachar Mirkin, Scott Nowson, Caroline Brun and Julien Perez

*Trans-gram, Fast Cross-lingual Word-embeddings*

Jocelyn Coulmance, Jean-Marc Marty, Guillaume Wenzek and Amine Benhalloum

**Sunday, September 20, 2015 (continued)**

**10:30–12:10 Session 4E (P14-16): Computational Psycholinguistics (Short Paper Posters)**

*The Overall Markedness of Discourse Relations*

Lifeng Jin and Marie-Catherine de Marneffe

*Experiments in Open Domain Deception Detection*

Verónica Pérez-Rosas and Rada Mihalcea

*A model of rapid phonotactic generalization*

Tal Linzen and Timothy O'Donnell

**12:10–12:50 Lunch**

**12:50–13:30 Session P3: SIGDAT business meeting**

**13:30–15:10 Session 5A: Text Mining and NLP Applications (Long + TACL Papers)**

13:30–13:55 *[TACL] Unsupervised Identification of Translationese*

Ella Rabinovich and Shuly Wintner

13:55–14:20 *Automatically Solving Number Word Problems by Semantic Parsing and Reasoning*

Shuming Shi, Yuehui Wang, Chin-Yew Lin, Xiaojiang Liu and Yong Rui

14:20–14:45 *[TACL] Which Step Do I Take First? Troubleshooting with Bayesian Models*

Annie Louis and Mirella Lapata

14:45–15:10 *[TACL] Problems in Current Text Simplification Research: New Data Can Help*

Wei Xu, Chris Callison-Burch and Courtney Napoles

**Sunday, September 20, 2015 (continued)**

**13:30–15:10 Session 5B: Semantics (Long +TACL Papers)**

13:30–13:55 *Parsing English into Abstract Meaning Representation Using Syntax-Based Machine Translation*

Michael Pust, Ulf Hermjakob, Kevin Knight, Daniel Marcu and Jonathan May

13:55–14:20 *The Forest Convolutional Network: Compositional Distributional Semantics with a Neural Chart and without Binarization*

Phong Le and Willem Zuidema

14:20–14:45 *Alignment-Based Compositional Semantics for Instruction Following*

Jacob Andreas and Dan Klein

14:45–15:10 *[TACL] Context-aware Frame-Semantic Role Labeling*

Michael Roth and Mirella Lapata

**13:30–15:10 Session 5C: Phonology and Word Segmentation (Long Papers)**

13:30–13:55 *Do we need bigram alignment models? On the effect of alignment quality on transduction accuracy in G2P*

Steffen Eger

13:55–14:20 *Keyboard Logs as Natural Annotations for Word Segmentation*

Fumihiko Takahasi and Shinsuke Mori

14:20–14:45 *Long Short-Term Memory Neural Networks for Chinese Word Segmentation*

Xinchi Chen, Xipeng Qiu, Chenxi Zhu, Pengfei Liu and Xuanjing Huang

14:45–15:10 *Semi-supervised Chinese Word Segmentation based on Bilingual Information*

Wei Chen and Bo Xu



Sunday, September 20, 2015 (continued)

13:30–15:10 **Session 5D (P1-8): Machine Translation and Multilinguality (Long Paper Posters)**

*Hierarchical Back-off Modeling of Hiero Grammar based on Non-parametric Bayesian Model*

Hidetaka Kamigaito, Taro Watanabe, Hiroya Takamura, Manabu Okumura and Ei-ichiro Sumita

*Consistency-Aware Search for Word Alignment*

Shiqi Shen, Yang Liu, Maosong Sun and Huanbo Luan

*Graph-Based Collective Lexical Selection for Statistical Machine Translation*

Jinsong Su, Deyi Xiong, Shujian Huang, Xianpei Han and Junfeng Yao

*Bilingual Correspondence Recursive Autoencoder for Statistical Machine Translation*

Jinsong Su, Deyi Xiong, Biao Zhang, Yang Liu, Junfeng Yao and Min Zhang

*How to Avoid Unwanted Pregnancies: Domain Adaptation using Neural Network Models*

Shafiq Joty, Hassan Sajjad, Nadir Durrani, Kamla Al-Mannai, Ahmed Abdelali and Stephan Vogel

*Detecting Content-Heavy Sentences: A Cross-Language Case Study*

Junyi Jessy Li and Ani Nenkova

*Search-Aware Tuning for Hierarchical Phrase-based Decoding*

Feifei Zhai, Liang Huang and Kai Zhao

*Part-of-speech Taggers for Low-resource Languages using CCA Features*

Young-Bum Kim, Benjamin Snyder and Ruhi Sarikaya

Sunday, September 20, 2015 (continued)

13:30–15:10 Session 5E (P1-12): Tagging, Syntax and Parsing (Short Paper Posters)

*An Improved Tag Dictionary for Faster Part-of-Speech Tagging*

Robert Moore

*Improving Arabic Diacritization through Syntactic Analysis*

Anas Shahrour, Salam Khalifa and Nizar Habash

*Combining Discrete and Continuous Features for Deterministic Transition-based Dependency Parsing*

Meishan Zhang and Yue Zhang

*Efficient Inner-to-outer Greedy Algorithm for Higher-order Labeled Dependency Parsing*

Xuezhe Ma and Eduard Hovy

*Online Updating of Word Representations for Part-of-Speech Tagging*

Wenpeng Yin, Tobias Schnabel and Hinrich Schütze

*Empty Category Detection using Path Features and Distributed Case Frames*

Shunsuke Takeno, Masaaki Nagata and Kazuhide Yamamoto

*Forebank: Syntactic Analysis of Customer Support Forums*

Rasoul Kaljahi, Jennifer Foster, Johann Roturier, Corentin Ribeyre, Teresa Lynn and Joseph Le Roux

*Semi-supervised Dependency Parsing using Bilexical Contextual Features from Auto-Parsed Data*

Eliyahu Kiperwasser and Yoav Goldberg

*Improved Transition-Based Parsing and Tagging with Neural Networks*

Chris Alberti, David Weiss, Greg Coppola and Slav Petrov

*Syntactic Parse Fusion*

Do Kook Choe, David McClosky and Eugene Charniak

*Not All Contexts Are Created Equal: Better Word Representations with Variable Attention*

Wang Ling, Yulia Tsvetkov, Silvio Amir, Ramon Fernandez, Chris Dyer, Alan W Black, Isabel Trancoso and Chu-Cheng Lin

*An Improved Non-monotonic Transition System for Dependency Parsing*

Matthew Honnibal and Mark Johnson

**Sunday, September 20, 2015 (continued)**

**15:10–15:40** *Coffee break*

**15:40–17:20** **Session 6A: Machine Translation (Long Papers)**

15:40–16:05 *Improving Statistical Machine Translation with a Multilingual Paraphrase Database*

Ramtin Mehdizadeh Seraj, Maryam Siahbani and Anoop Sarkar

16:05–16:30 *Learning Semantic Representations for Nonterminals in Hierarchical Phrase-Based Translation*

Xing Wang, Deyi Xiong and Min Zhang

16:30–16:55 *A Comparison between Count and Neural Network Models Based on Joint Translation and Reordering Sequences*

Andreas Guta, Tamer Alkhouli, Jan-Thorsten Peter, Joern Wuebker and Hermann Ney

16:55–17:20 *Effective Approaches to Attention-based Neural Machine Translation*

Thang Luong, Hieu Pham and Christopher D. Manning

**15:40–17:20** **Session 6B: Sentiment Analysis and Opinion Mining / Tagging, Chunking and Parsing (Long Papers)**

15:40–16:05 *Document Modeling with Gated Recurrent Neural Network for Sentiment Classification*

Duyu Tang, Bing Qin and Ting Liu

16:05–16:30 *Fine-grained Opinion Mining with Recurrent Neural Networks and Word Embeddings*

Pengfei Liu, Shafiq Joty and Helen Meng

16:30–16:55 *Joint A\* CCG Parsing and Semantic Role Labelling*

Mike Lewis, Luheng He and Luke Zettlemoyer

16:55–17:20 *Improving Semantic Parsing with Enriched Synchronous Context-Free Grammar*

Junhui Li, Muhua Zhu, Wei Lu and Guodong Zhou

**Sunday, September 20, 2015 (continued)**

**15:40–17:20 Session 6C: Language and Vision / Information Extraction (Long Papers)**

15:40–16:05 *Solving Geometry Problems: Combining Text and Diagram Interpretation*  
Minjoon Seo, Hannaneh Hajishirzi, Ali Farhadi, Oren Etzioni and Clint Malcolm

16:05–16:30 *Do You See What I Mean? Visual Resolution of Linguistic Ambiguities*  
Yevgeni Berzak, Andrei Barbu, Daniel Harari, Boris Katz and Shimon Ullman

16:30–16:55 *Efficient and Expressive Knowledge Base Completion Using Subgraph Feature Extraction*  
Matt Gardner and Tom Mitchell

16:55–17:20 *Representing Text for Joint Embedding of Text and Knowledge Bases*  
Kristina Toutanova, Danqi Chen, Patrick Pantel, Hoifung Poon, Pallavi Choudhury and Michael Gamon

**15:40–17:20 Session 6D (P1-11): Statistical Models and Machine Learning Methods (Long Paper Posters)**

*A Utility Model of Authors in the Scientific Community*  
Yanchuan Sim, Bryan Routledge and Noah A. Smith

*Finding Function in Form: Compositional Character Models for Open Vocabulary Word Representation*  
Wang Ling, Chris Dyer, Alan W Black, Isabel Trancoso, Ramon Fernandez, Silvio Amir, Luis Marujo and Tiago Luis

*Syntax-Aware Multi-Sense Word Embeddings for Deep Compositional Models of Meaning*  
Jianpeng Cheng and Dimitri Kartsaklis

*Conversation Trees: A Grammar Model for Topic Structure in Forums*  
Annie Louis and Shay B. Cohen

*Fast, Flexible Models for Discovering Topic Correlation across Weakly-Related Collections*  
Jingwei Zhang, Aaron Gerow, Jaan Altsosaar, James Evans and Richard Jean So

*Molding CNNs for text: non-linear, non-consecutive convolutions*  
Tao Lei, Regina Barzilay and Tommi Jaakkola

**Sunday, September 20, 2015 (continued)**

*Multi-Perspective Sentence Similarity Modeling with Convolutional Neural Networks*

Hua He, Kevin Gimpel and Jimmy Lin

*Posterior calibration and exploratory analysis for natural language processing models*

Khanh Nguyen and Brendan O'Connor

*A Generative Word Embedding Model and its Low Rank Positive Semidefinite Solution*

Shaohua Li, Jun Zhu and Chunyan Miao

*Reading Documents for Bayesian Online Change Point Detection*

Taehoon Kim and Jaesik Choi

**15:40–17:20 Session 6E (P1-13): Semantics (Short Paper Posters)**

*Recognizing Textual Entailment Using Probabilistic Inference*

Lei Sha, Sujian Li, Baobao Chang, Zhifang Sui and Tingsong Jiang

*Chinese Semantic Role Labeling with Bidirectional Recurrent Neural Networks*

Zhen Wang, Tingsong Jiang, Baobao Chang and Zhifang Sui

*Unsupervised Negation Focus Identification with Word-Topic Graph Model*

Bowei Zou, Guodong Zhou and Qiaoming Zhu

*Reverse-engineering Language: A Study on the Semantic Compositionality of German Compounds*

Corina Dima

*Event Detection and Factuality Assessment with Non-Expert Supervision*

Kenton Lee, Yoav Artzi, Yejin Choi and Luke Zettlemoyer

*Large-Scale Acquisition of Entailment Pattern Pairs by Exploiting Transitivity*

Julien Kloetzer, Kentaro Torisawa, Chikara Hashimoto and Jong-Hoon Oh

*Context-Dependent Knowledge Graph Embedding*

Yuanfei Luo, Quan Wang, Bin Wang and Li Guo

*Learning to Identify the Best Contexts for Knowledge-based WSD*

Evgenia Wasserman Pritsker, William Cohen and Einat Minkov

**Sunday, September 20, 2015 (continued)**

*Measuring Prerequisite Relations Among Concepts*

Chen Liang, Zhaohui Wu, Wenyi Huang and C. Lee Giles

*Adapting Phrase-based Machine Translation to Normalise Medical Terms in Social Media Messages*

Nut Limsopatham and Nigel Collier

*Script Induction as Language Modeling*

Rachel Rudinger, Pushpendre Rastogi, Francis Ferraro and Benjamin Van Durme

*Online Learning of Interpretable Word Embeddings*

Hongyin Luo, Zhiyuan Liu, Huanbo Luan and Maosong Sun

*A Strong Lexical Matching Method for the Machine Comprehension Test*

Ellery Smith, Nicola Greco, Matko Bosnjak and Andreas Vlachos

**19:00–23:00 Conference Dinner**

**Monday, September 21, 2015**

**07:30–18:00 Registration**

**09:00–10:00 Session P4: Plenary Session**

09:00–09:05 *Best Paper Awards*

Chris Callison-Burch and Jian Su

09:05–09:30 *Broad-coverage CCG Semantic Parsing with AMR*

Yoav Artzi, Kenton Lee and Luke Zettlemoyer

09:30–09:55 *Semantically Conditioned LSTM-based Natural Language Generation for Spoken Dialogue Systems*

Tsung-Hsien Wen, Milica Gasic, Nikola Mrkšić, Pei-Hao Su, David Vandyke and Steve Young

09:55–10:05 *A large annotated corpus for learning natural language inference*

Samuel R. Bowman, Gabor Angeli, Christopher Potts and Christopher D. Manning

**10:05–10:30 Coffee break**

**Monday, September 21, 2015 (continued)**

**10:30–12:10 Session 7A: Semantics (Long +TACL Papers)**

- 10:30–10:55 *Do Multi-Sense Embeddings Improve Natural Language Understanding?*  
Jiwei Li and Dan Jurafsky
- 10:55–11:20 *Learning Semantic Composition to Detect Non-compositionality of Multiword Expressions*  
Majid Yazdani, Meghdad Farahmand and James Henderson
- 11:20–11:45 *Solving General Arithmetic Word Problems*  
Subhro Roy and Dan Roth
- 11:45–12:10 *[TACL] From Paraphrase Database to Compositional Paraphrase Model and Back*  
John Wieting, Mohit Bansal, Kevin Gimpel, Karen Livescu and Dan Roth

**10:30–12:10 Session 7B: Information Extraction (Long Papers)**

- 10:30–10:55 *Distant Supervision for Relation Extraction via Piecewise Convolutional Neural Networks*  
Daojian Zeng, Kang Liu, Yubo Chen and Jun Zhao
- 10:55–11:20 *CORE: Context-Aware Open Relation Extraction with Factorization Machines*  
Fabio Petroni, Luciano Del Corro and Rainer Gemulla
- 11:20–11:45 *Improved Relation Extraction with Feature-Rich Compositional Embedding Models*  
Matthew R. Gormley, Mo Yu and Mark Dredze
- 11:45–12:10 *Classifying Relations via Long Short Term Memory Networks along Shortest Dependency Paths*  
Yan Xu, Lili Mou, Ge Li, Yunchuan Chen, Hao Peng and Zhi Jin

**10:30–12:10 Session 7C: Computational Psycholinguistics / Machine Translation (Long Papers)**

- 10:30–10:55 *A Computational Cognitive Model of Novel Word Generalization*  
Aida Nematzadeh, Erin Grant and Suzanne Stevenson
- 10:55–11:20 *Personality Profiling of Fictional Characters using Sense-Level Links between Lexical Resources*  
Lucie Flekova and Iryna Gurevych
- 11:20–11:45 *Leave-one-out Word Alignment without Garbage Collector Effects*  
Xiaolin Wang, Masao Utiyama, Andrew Finch, Taro Watanabe and Eiichiro Sumita
- 11:45–12:10 *Generalized Agreement for Bidirectional Word Alignment*  
Chunyang Liu, Yang Liu, Maosong Sun, Huanbo Luan and Heng Yu

Monday, September 21, 2015 (continued)

**10:30–12:10 Session 7D (P1-6): Word Segmentation, Tagging and Parsing (Long +TACL Paper Posters)**

*A Transition-based Model for Joint Segmentation, POS-tagging and Normalization*

Tao Qian, Yue Zhang, Meishan Zhang, Yafeng Ren and Donghong Ji

*Multilingual discriminative lexicalized phrase structure parsing*

Benoit Crabbé

*Hierarchical Low-Rank Tensors for Multilingual Transfer Parsing*

Yuan Zhang and Regina Barzilay

*Diversity in Spectral Learning for Natural Language Parsing*

Shashi Narayan and Shay B. Cohen

*Transition-based Dependency Parsing Using Two Heterogeneous Gated Recursive Neural Networks*

Xinchi Chen, Yaqian Zhou, Chenxi Zhu, Xipeng Qiu and Xuanjing Huang

*[TACL] A Graph-based Lattice Dependency Parser for Joint Morphological Segmentation and Syntactic Analysis*

Wolfgang Seeker and Özlem Çetinoğlu

**10:30–12:10 Session 7E (P1-3): Spoken Language Processing (Short Paper Posters)**

*Turn-taking phenomena in incremental dialogue systems*

Hatim Khouzaimi, Romain Laroche and Fabrice Lefevre

*Hierarchical Latent Words Language Models for Robust Modeling to Out-Of-Domain Tasks*

Ryo Masumura, Taichi Asami, Takanobu Oba, Hirokazu Masataki, Sumitaka Sakauchi and Akinori Ito

*A Coarse-Grained Model for Optimal Coupling of ASR and SMT Systems for Speech Translation*

Gaurav Kumar, Graeme Blackwood, Jan Trmal, Daniel Povey and Sanjeev Khudanpur



**Monday, September 21, 2015 (continued)**

**10:30–12:10 Session 7E (P4-18): Summarization (Short Paper Posters)**

*Abstractive Multi-document Summarization with Semantic Information Extraction*  
Wei Li

*Concept-based Summarization using Integer Linear Programming: From Concept Pruning to Multiple Optimal Solutions*  
Florian Boudin, Hugo Mougard and Benoit Favre

*GhostWriter: Using an LSTM for Automatic Rap Lyric Generation*  
Peter Potash, Alexey Romanov and Anna Rumshisky

*Better Summarization Evaluation with Word Embeddings for ROUGE*  
Jun-Ping Ng and Viktoria Abrecht

*Krimping texts for better summarization*  
Marina Litvak, Mark Last and Natalia Vanetik

*From the Virtual to the RealWorld: Referring to Objects in Real-World Spatial Scenes*  
Dimitra Gkatzia, Verena Rieser, Phil Bartie and William Mackaness

*An Unsupervised Bayesian Modelling Approach for Storyline Detection on News Articles*  
Deyu Zhou, Haiyang Xu and Yulan He

*Topical Coherence for Graph-based Extractive Summarization*  
Daraksha Parveen, Hans-Martin Ramsel and Michael Strube

**Monday, September 21, 2015 (continued)**

*Summarizing Student Responses to Reflection Prompts*

Wencan Luo and Diane Litman

*Extractive Summarization by Maximizing Semantic Volume*

Dani Yogatama, Fei Liu and Noah A. Smith

*LCSTS: A Large Scale Chinese Short Text Summarization Dataset*

Baotian Hu, Qingcai Chen and Fangze Zhu

*Discourse Planning with an N-gram Model of Relations*

Or Biran and Kathleen McKeown

*Experiments with Generative Models for Dependency Tree Linearization*

Richard Futrell and Edward Gibson

*Summarization Based on Embedding Distributions*

Hayato Kobayashi, Masaki Noguchi and Taichi Yatsuka

*Reversibility reconsidered: finite-state factors for efficient probabilistic sampling in parsing and generation*

Marc Dymetman, Sriram Venkatapathy and Chunyang Xiao

**12:10–13:30** *Lunch*

**13:30–15:15** **Session 8A: Fun and Quirky Topics (Short Papers)**

13:30–13:45 *A quantitative analysis of gender differences in movies using psycholinguistic norms*

Anil Ramakrishna, Nikolaos Malandrakis, Elizabeth Staruk and Shrikanth Narayanan

13:45–14:00 *EMNLP versus ACL: Analyzing NLP research over time*

Sujatha Das Gollapalli and Xiaoli Li

14:00–14:15 *Answering Elementary Science Questions by Constructing Coherent Scenes using Background Knowledge*

Yang Li and Peter Clark

14:15–14:30 *WikiQA: A Challenge Dataset for Open-Domain Question Answering*

Yi Yang, Wen-tau Yih and Christopher Meek

**Monday, September 21, 2015 (continued)**

- 14:30–14:45 *Personalized Machine Translation: Predicting Translational Preferences*  
Shachar Mirkin and Jean-Luc Meunier
- 14:45–15:00 *Talking to the crowd: What do people react to in online discussions?*  
Aaron Jaech, Victoria Zayats, Hao Fang, Mari Ostendorf and Hannaneh Hajishirzi
- 15:00–15:15 *What Your Username Says About You*  
Aaron Jaech and Mari Ostendorf
- 13:30–15:15 Session 8B: Semantics (Short Papers)**
- 13:30–13:45 *Knowledge Base Inference using Bridging Entities*  
Bhushan Kotnis, Pradeep Bansal and Partha P. Talukdar
- 13:45–14:00 *Specializing Word Embeddings for Similarity or Relatedness*  
Douwe Kiela, Felix Hill and Stephen Clark
- 14:00–14:15 *Evaluation of Word Vector Representations by Subspace Alignment*  
Yulia Tsvetkov, Manaal Faruqui, Wang Ling, Guillaume Lample and Chris Dyer
- 14:15–14:30 *Higher-order logical inference with compositional semantics*  
Koji Mineshima, Pascual Martínez-Gómez, Yusuke Miyao and Daisuke Bekki
- 14:30–14:45 *Any-language frame-semantic parsing*  
Anders Johannsen, Héctor Martínez Alonso and Anders Søgaard
- 15:00–15:15 *What's in an Embedding? Analyzing Word Embeddings through Multilingual Evaluation*  
Arne Köhn

**Monday, September 21, 2015 (continued)**

**13:30–15:15 Session 8C: Statistical Models and Machine Learning Methods, Machine Translation (Short Papers)**

13:30–13:45 *Joint Event Trigger Identification and Event Coreference Resolution with Structured Perceptron*  
Jun Araki and Teruko Mitamura

13:45–14:00 *A Joint Dependency Model of Morphological and Syntactic Structure for Statistical Machine Translation*  
Rico Sennrich and Barry Haddow

14:00–14:15 *Variable-Length Word Encodings for Neural Translation Models*  
Rohan Chitnis and John DeNero

14:15–14:30 *A Binarized Neural Network Joint Model for Machine Translation*  
Jingyi Zhang, Masao Utiyama, Eiichiro Sumita, Graham Neubig and Satoshi Nakamura

14:30–14:45 *Bayesian Optimization of Text Representations*  
Dani Yogatama, Lingpeng Kong and Noah A. Smith

14:45–15:00 *A Comparative Study on Regularization Strategies for Embedding-based Neural Networks*  
Hao Peng, Lili Mou, Ge Li, Yunchuan Chen, Yangyang Lu and Zhi Jin

15:00–15:15 *Efficient Hyper-parameter Optimization for NLP Applications*  
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*Improved Arabic Dialect Classification with Social Media Data*  
Fei Huang

*Exploiting Debate Portals for Semi-Supervised Argumentation Mining in User-Generated Web Discourse*  
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*Confounds and Consequences in Geotagged Twitter Data*  
Umashanthi Pavalanathan and Jacob Eisenstein

*Modeling Reportable Events as Turning Points in Narrative*  
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*Using Content-level Structures for Summarizing Microblog Repost Trees*  
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Ryu Iida, Kentaro Torisawa, Chikara Hashimoto, Jong-Hoon Oh and Julien Kloetzer

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Parminder Bhatia, Yangfeng Ji and Jacob Eisenstein

*Closing the Gap: Domain Adaptation from Explicit to Implicit Discourse Relations*  
Yangfeng Ji, Gongbo Zhang and Jacob Eisenstein

*Wikification of Concept Mentions within Spoken Dialogues Using Domain Constraints from Wikipedia*  
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*Shallow Convolutional Neural Network for Implicit Discourse Relation Recognition*  
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*On the Role of Discourse Markers for Discriminating Claims and Premises in Argumentative Discourse*  
Judith Eckle-Kohler, Roland Kluge and Iryna Gurevych

*Fatal or not? Finding errors that lead to dialogue breakdowns in chat-oriented dialogue systems*  
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Muhammad Attamimi, Yuji Ando, Tomoaki Nakamura, Takayuki Nagai, Daichi Mochihashi, Ichiro Kobayashi and Hideki Asoh

*Discourse Element Identification in Student Essays based on Global and Local Cohesion*

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*Adapting Coreference Resolution for Narrative Processing*

Quynh Ngoc Thi Do, Steven Bethard and Marie-Francine Moens

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Thomas Müller, Ryan Cotterell, Alexander Fraser and Hinrich Schütze

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*Morphological Analysis for Unsegmented Languages using Recurrent Neural Network Language Model*

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*Can Symbol Grounding Improve Low-Level NLP? Word Segmentation as a Case Study*

Hiroataka Kameko, Shinsuke Mori and Yoshimasa Tsuruoka

**15:15–15:40 Coffee break**

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15:40–16:05 *When Are Tree Structures Necessary for Deep Learning of Representations?*

Jiwei Li, Thang Luong, Dan Jurafsky and Eduard Hovy

16:05–16:30 *Discriminative Neural Sentence Modeling by Tree-Based Convolution*

Lili Mou, Hao Peng, Ge Li, Yan Xu, Lu Zhang and Zhi Jin

16:30–16:55 *Multi-Timescale Long Short-Term Memory Neural Network for Modelling Sentences and Documents*

Pengfei Liu, Xipeng Qiu, Xinchu Chen, Shiyu Wu and Xuanjing Huang

16:55–17:20 *[TACL] Learning Structural Kernels for Natural Language Processing*

Daniel Beck, Trevor Cohn, Christian Hardmeier and Lucia Specia

**15:40–17:20 Session 9B: Text Mining and NLP Applications (Long Papers)**

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Verónica Pérez-Rosas, Mohamed Abouelenen, Rada Mihalcea, Yao Xiao, CJ Linton and Mihai Burzo

16:05–16:30 *Social Media Text Classification under Negative Covariate Shift*

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16:30–16:55 *Co-Training for Topic Classification of Scholarly Data*

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16:55–17:20 *Humor Recognition and Humor Anchor Extraction*

Diyi Yang, Alon Lavie, Chris Dyer and Eduard Hovy

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16:05–16:30 *A Dynamic Programming Algorithm for Computing N-gram Posteriors from Lattices*  
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16:30–16:55 *Bilingual Structured Language Models for Statistical Machine Translation*  
Ekaterina Garmash and Christof Monz

16:55–17:20 *Compact, Efficient and Unlimited Capacity: Language Modeling with Compressed Suffix Trees*  
Ehsan Shareghi, Matthias Petri, Gholamreza Haffari and Trevor Cohn

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*A Single Word is not Enough: Ranking Multiword Expressions Using Distributional Semantics*  
Martin Riedl and Chris Biemann

*Syntactic Dependencies and Distributed Word Representations for Analogy Detection and Mining*  
Likun Qiu, Yue Zhang and Yanan Lu

*Navigating the Semantic Horizon using Relative Neighborhood Graphs*  
Amaru Cuba Gyllensten and Magnus Sahlgren

*Multi- and Cross-Modal Semantics Beyond Vision: Grounding in Auditory Perception*  
Douwe Kiela and Stephen Clark

*Automatic recognition of habituals: a three-way classification of clausal aspect*  
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*Distributed Representations for Unsupervised Semantic Role Labeling*  
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*A Tableau Prover for Natural Logic and Language*  
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Kun-Hu Luo, Zhi-Hong Deng, Hongliang Yu and Liang-Chen Wei

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Thien Hai Nguyen and Kiyooki Shirai

*ASTD: Arabic Sentiment Tweets Dataset*

Mahmoud Nabil, Mohamed Aly and Amir Atiya

*Adjective Intensity and Sentiment Analysis*

Raksha Sharma, Mohit Gupta, Astha Agarwal and Pushpak Bhattacharyya

*The Rating Game: Sentiment Rating Reproducibility from Text*

Lasse Borgholt, Peter Simonsen and Dirk Hovy

*A Multi-lingual Annotated Dataset for Aspect-Oriented Opinion Mining*

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*Deep Convolutional Neural Network Textual Features and Multiple Kernel Learning for Utterance-level Multimodal Sentiment Analysis*

Soujanya Poria, Erik Cambria and Alexander Gelbukh

*SLSA: A Sentiment Lexicon for Standard Arabic*

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William Yang Wang and Diyi Yang

*Detection of Steganographic Techniques on Twitter*

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*#SupportTheCause: Identifying Motivations to Participate in Online Health Campaigns*

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