## COLING 2014

## The 25th International Conference on Computational Linguistics

# **Proceedings of COLING 2014: Technical Papers**

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### Preface

This volume contains papers from the 25th International Conference on Computational Linguistics (Coling 2014) held in Dublin, Ireland. The conference is organized by the Centre for Global Intelligent Content (CNGL) and held at the Helix Conference Centre at Dublin City University (DCU) from 25–29 August 2014, under the auspices of the International Committee on Computational Linguistics (ICCL).

COLING is almost 50 years old, its first gathering having taken place in New York in 1965. It has been organized once every two years, initially in odd years and then in even years, after COLING 1976 in Ottawa. Throughout its long history, COLING's aspiration to provide an amicable forum for participants with broad backgrounds to present and share their ideas remains the same. We believe that the inherent complexity of language is worthy of study from diverse perspectives and that COLING provides a venue for fruitful interdisciplinary interaction.

We accepted 217 papers (138 oral presentations and 79 poster presentations) from 685 effective submissions, having received 705 submissions in total. Regardless of the format of presentation, all of the accepted papers were allocated 12 pages in the proceedings.

The review process of a large conference such as COLING is always complex and occasionally encounters difficulties. The program committee has to cope with the challenges of selecting which papers to accept among a large quantity of high quality submissions. The task of choosing 217 papers from 685 strong submissions covering the ever broadening fields of computational linguistics was not an easy one.

To cope with the anticipated difficulties, we asked six senior colleagues to join the Scientific Advisory Board (SAB) and help us through all stages of reviewing papers. They are: Ralph Grishman (New York University, USA), Yuji Matsumoto (NAIST, Japan), Joakim Nivre (Uppsala Univ., Sweden), Michael Picheny (IBM TJ Watson Research Center, USA), Donia Scott (Univ. of Sussex, UK), and Chengqing Zong (CAS, China).

We had 20 thematic areas and each area was chaired by two or more area chairs. Thanks to over 800 responsive reviewers, the review process proceeded in a very smooth manner, and each paper was read at least by three reviewers. In some cases, papers and their reviews were carefully assessed by Area Co-Chairs, one of the SAB members and by us, in our roles as Program Committee Co-Chairs. We are extremely happy with the very strong set of papers that has been accepted for presentation at the conference. It is, however, with regret that we had no choice but to reject a large number of high quality papers, due to the sheer volume of submissions received.

We would like to thank the SAB members and the Program Committee Area Chairs for their dedicated and efficient review work, and our reviewers for their professionalism in delivering high quality reviews. We also thank the authors of all the papers for submitting their fruits of labour to COLING. Although we were only able to accept a small subset of the submitted papers, we do hope that all authors and reviewers have benefited from this process of indirect dialogue.

Last but not least, we would like to thank the people who made COLING 2014 and this volume possible. We thank General Chairs, Josef van Genabith (Universität des Saarlandes/DFKI) and Andy Way (CNGL, DCU), and the chairs of the Local Organizing Committee, Cara Green (CNGL, DCU) and John Judge (CNGL/NCLT, DCU), for their tireless work. We are especially grateful to the Publications Chairs, Joachim Wagner (CNGL, DCU), Liadh Kelly (CNGL, DCU) and Lorraine Goeuriot (CNGL, DCU), for their hard work in preparing the proceedings.

Prof. Jan Hajic (Charles University, Czech Republic) Prof. Junichi Tsujii (Microsoft Research, China) COLING 2014 Program Committee Co-Chairs July 8, 2014

## Welcome from the General Chairs

We are very pleased indeed to welcome you all to COLING 2014, the 25th International Conference on Computational Linguistics. We are particularly proud that the ICCL selected Dublin City University (DCU) as the location of COLING 2014.

DCU and its National Centre for Language Technology (NCLT) have a long track record in NLP. Unlike India, the previous COLING host country, Ireland is a very small country. A unique feature of the Irish University landscape is that universities team up with industry partners and each other to pool expertise to form large research centres. DCU is a founding member of CNGL, the Centre for Gobal Intelligent Content. COLING 2014 is organised by DCU in partnership with the CNGL, and as General Chairs we are proud to represent both DCU and CNGL.

The conference is taking place at the Helix Conference Centre, a stunning building added to the DCU campus in 2002. DCU is a young, dynamic and ambitious university; since admitting its first students in 1980, DCU has grown in both student numbers and size and now occupies a 72-acre site in Glasnevin, just to the north of Dublin city centre. To date almost 50,000 students have graduated from DCU and are now playing significant roles in enterprise and business globally. Today in 2014, DCU delivers more than 200 programmes to over 12,000 students across its four faculties — Humanities and Social Sciences, Science and Health, Engineering and Computing and DCU Business School. DCU's excellence is recognised internationally and it is ranked among the top-50 young Universities worldwide (QS 'Top 50 under 50' 2013). In the last eight years, DCU has twice been named Sunday Times 'University of the Year'.

At the time of writing, the total number of people registered to attend COLING has exceeded 675. With delegates from 58 countries, COLING 2014 will witness a colourful diversity of language and culture, which is appropriate given that Dublin is known as the localisation capital of the world. Some evidence for this comes from our sponsors, to whom we are extremely grateful: Baidu, eBay, Microsoft, Symantec and Google.

We are very pleased with the programme that has been assembled for you, comprising of four days for the main conference with a total of 138 oral presentations, 79 posters and a special track with 28 demo presentations, two days of workshops and tutorials before the main conference, and other satellite workshops immediately after. 18 topical workshops with a sharp focus on issues of key interest today will be attended by about 191 delegates, and the 6 high-quality tutorials are sure to attract large crowds. Social events include a welcome reception on the evening of 24th August, the conference banquet in the Guinness Storehouse on 26th, and excursions to some beautiful places of interest on 27th.

When DCU was awarded COLING two years ago, our own personal situations were quite different. One of us was away working in the translation industry in the UK, while the other was leading the Science Foundation Ireland and Industry-funded CNGL research center. Over the past few months, we have changed countries, and jobs: Andy is back as Deputy Director of the CNGL's Centre for Intelligent Content, while Josef has moved to Saarbrücken to take up a Chair and a Scientific Directorship at DFKI.

While these changes were taking place, we both had the backing of a remarkable team. The organization of an event on the scale of COLING takes enormous energy, planning and commitment from a large number of individuals. We have assembled a large, competent team of volunteers who are available to assist you while you are here in Dublin. We are sure that all of you participating at COLING — at tutorials, workshops, or the main conference — will enjoy the time you spend here in Ireland, and will look back on the event as one of the most memorable that you attend. Finally, thanks to all of you for coming. We hope you all enjoy the conference, that you benefit from the excellent programme that has been assembled, and that you go away from here having made new friends.

Prof. Josef Van Genabith (Universität des Saarlandes/DFKI, Germany) Prof. Andy Way (CNGL, DCU, Ireland)

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#### **Invited Speakers**

Mary Harper — Learning from 26 languages: Program Management and Science in the Babel Program

Mary will give her invited talk on Monday August 25th.

Ted Gibson — *Language for Communication: Language as Rational Inference* Ted will give his invited talk on Tuesday August 26th.

Qun Liu — Annotation Adaptation and Language Adaptation in NLP Qun will give his invited talk on Thursday August 28th.

Martin Kay — *Does a Computational Linguist have to be a Linguist?* Martin will give his invited talk on Friday August 29th.

#### **After Dinner Speaker**

Tony Veale — *Creative Twitterbots: Putting Words (and Wit) Into the Mouths of Bots* Tony will give his talk after the conference dinner on Wednesday August 27th.

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## **Conference Program**

#### Monday, August 25, 2014

#### Session Mo11: (09:00-10:15) Invited Talk 1

- 09:00–10:15 Learning from 26 Languages: Program Management and Science in the Babel Program Mary Harper
- 10:15-10:45 Coffee Break

Session Mo21: (10:45-12:25) Modeling of Discourse and Dialogue I

- 10:45–11:10 *Unsupervised learning of rhetorical structure with un-topic models* Diarmuid Ó Séaghdha and Simone Teufel
- 11:10–11:35 Cross-lingual Coreference Resolution of Pronouns Michal Novak and Zdenek Zabokrtsky
- 11:35–12:00 A Context-Aware NLP Approach For Noteworthiness Detection in Cellphone Conversations Francesca Bonin, Jose San Pedro and Nuria Oliver
- 12:00–12:25 *Hierarchical Topical Segmentation with Affinity Propagation* Anna Kazantseva and Stan Szpakowicz

# Session Mo22: (10:45-12:25) Sentiment Analysis, Opinion Mining and Social Media I

- 10:45–11:10 *Capturing Cultural Differences in Expressions of Intentions* Marc Tomlinson, David Bracewell and Wayne Krug
- 11:10–11:35 Identification of Implicit Topics in Twitter Data Not Containing Explicit Search Queries Suzi Park and Hyopil Shin
- 11:35–12:00 *Deep Convolutional Neural Networks for Sentiment Analysis of Short Texts* Cicero dos Santos and Maira Gatti

12:00–12:25 Joint Inference and Disambiguation of Implicit Sentiments via Implicature Constraints Lingjia Deng, Janyce Wiebe and Yoonjung Choi

#### Session Mo23: (10:45-12:25) Information Retrieval and Question Answering

- 10:45–11:10 Group Non-negative Matrix Factorization with Natural Categories for Question Retrieval in Community Question Answer Archives Guangyou Zhou, Yubo Chen, Daojian Zeng and Jun Zhao
- 11:10–11:35 *Multi-Objective Search Results Clustering* Sudipta Acharya, Sriparna Saha, Jose G. Moreno and Gaël Dias
- 11:35–12:00 *Query-by-Example Image Retrieval using Visual Dependency Representations* Desmond Elliott, Victor Lavrenko and Frank Keller
- 12:00–12:25 *Augmenting Business Entities with Salient Terms from Twitter* Riham Mansour, Nesma Refaei and Vanessa Murdock

#### Session Mo24: (10:45-12:25) Machine Learning for CL and NLP

- 10:45–11:10 *A PAC-Bayesian Approach to Minimum Perplexity Language Modeling* Sujeeth Bharadwaj and Mark Hasegawa-Johnson
- 11:10–11:35 *Co-learning of Word Representations and Morpheme Representations* Siyu Qiu, Qing Cui, Jiang Bian, Bin Gao and Tie-Yan Liu
- 11:35–12:00 *A Probabilistic Model for Learning Multi-Prototype Word Embeddings* Fei Tian, Hanjun Dai, Jiang Bian, Bin Gao, Rui Zhang, Enhong Chen and Tie-Yan Liu
- 12:00–12:25 *Learning Task-specific Bilexical Embeddings* Pranava Swaroop Madhyastha, Xavier Carreras and Ariadna Quattoni
- 12:25-14:00 Lunch Break

#### Session Mo3P: (14:00-15:15) Posters I

Building Large-Scale Twitter-Specific Sentiment Lexicon : A Representation Learning Approach

Duyu Tang, Furu Wei, Bing Qin, Ming Zhou and Ting Liu

*Political Tendency Identification in Twitter using Sentiment Analysis Techniques* Ferran Pla and Lluís-F. Hurtado

A Study of using Syntactic and Semantic Structures for Concept Segmentation and Labeling

Iman Saleh, Scott Cyphers, Jim Glass, Shafiq Joty, Lluís Màrquez, Alessandro Moschitti and Preslav Nakov

*Time-aware Personalized Hashtag Recommendation on Social Media* Qi Zhang, Yeyun Gong, Xuyang Sun and Xuanjing Huang

Sarcasm Detection on Czech and English Twitter Tomáš Ptáček, Ivan Habernal and Jun Hong

A Three-Step Transition-Based System for Non-Projective Dependency Parsing Ophélie Lacroix and Denis Béchet

Collaborative Topic Regression with Multiple Graphs Factorization for Recommendation in Social Media Qing Zhang and Houfeng Wang

High Performance Word Sense Alignment by Joint Modeling of Sense Distance and Gloss Similarity

Michael Matuschek and Iryna Gurevych

*Multi-view Chinese Treebanking* Likun Qiu, Yue Zhang, Peng Jin and Houfeng Wang

Rapid Development of a Corpus with Discourse Annotations using Two-stage Crowdsourcing

Daisuke Kawahara, Yuichiro Machida, Tomohide Shibata, Sadao Kurohashi, Hayato Kobayashi and Manabu Sassano

Chinese Word Ordering Errors Detection and Correction for Non-Native Chinese Language Learners

Shuk-Man Cheng, Chi-Hsin Yu and Hsin-Hsi Chen

Unsupervised Training Set Generation for Automatic Acquisition of Technical Terminology in Patents Alex Judee, Hinrich Schütze and Seeren Bruegmann

Alex Judea, Hinrich Schütze and Soeren Bruegmann

A Data Driven Approach for Person Name Disambiguation in Web Search Results Agustín D. Delgado, Raquel Martínez, Víctor Fresno and Soto Montalvo

*Picking the Amateur's Mind - Predicting Chess Player Strength from Game Annotations* Christian Scheible and Hinrich Schütze

Zipf's Law and Statistical Data on Modern Tibetan Huidan Liu, Minghua Nuo and Jian Wu

*Simple or Complex? Assessing the readability of Basque Texts* Itziar Gonzalez-Dios, María Jesús Aranzabe, Arantza Díaz de Ilarraza and Haritz Salaberri

Influence of Target Reader Background and Text Features on Text Readability in Bangla: A Computational Approach Manjira Sinha, Tirthankar Dasgupta and Anupam Basu

*Inducing Word Sense with Automatically Learned Hidden Concepts* Baobao Chang, Wenzhe Pei and Miaohong Chen

Inferring Knowledge with Word Refinements in a Crowdsourced Lexical-Semantic Network Manel Zarrouk and Mathieu Lafourcade

A Supervised Learning Approach Towards Profiling the Preservation of Authorial Style in Literary Translations Gerard Lynch

Author Verification Using Common N-Gram Profiles of Text Documents Magdalena Jankowska, Evangelos Milios and Vlado Keselj

Dynamically Integrating Cross-Domain Translation Memory into Phrase-Based Machine Translation during Decoding Kun Wang, Chengqing Zong and Keh-Yih Su

Machine Translation Quality Estimation Across Domains José G. C. de Souza, Marco Turchi and Matteo Negri

*Investigating the Usefulness of Generalized Word Representations in SMT* Nadir Durrani, Philipp Koehn, Helmut Schmid and Alexander Fraser

Confusion Network for Arabic Name Disambiguation and Transliteration in Statistical Machine Translation Young-Suk Lee

*Fourteen Light Tasks for comparing Analogical and Phrase-based Machine Translation* Rafik Rhouma and Phillippe Langlais

*Finding Zelig in Text: A Measure for Normalising Linguistic Accommodation* Simon Jones, Rachel Cotterill, Nigel Dewdney, Kate Muir and Adam Joinson

The annotation of the Central Unit in Rhetorical Structure Trees: A Key Step in Annotating Rhetorical Relations Mikel Iruskieta, Arantza Díaz de Ilarraza and Mikel Lersundi

*Measuring Lexical Cohesion: Beyond Word Repetition* Anna Kazantseva and Stan Szpakowicz

*Fast Tweet Retrieval with Compact Binary Codes* Weiwei Guo, Wei Liu and Mona Diab

*Learning Sense-specific Word Embeddings By Exploiting Bilingual Resources* Jiang Guo, Wanxiang Che, Haifeng Wang and Ting Liu

Using unmarked contexts in nominal lexical semantic classification Lauren Romeo, Sara Mendes and Núria Bel

*Skill Inference with Personal and Skill Connections* Zhongqing Wang, Shoushan Li, Hanxiao Shi and Guodong Zhou

Jointly or Separately: Which is Better for Parsing Heterogeneous Dependencies? Meishan Zhang, Wanxiang Che, Yanqiu Shao and Ting Liu

An LR-inspired generalized lexicalized phrase structure parser Benoit Crabbé

*Modeling Review Argumentation for Robust Sentiment Analysis* Henning Wachsmuth, Martin Trenkmann, Benno Stein and Gregor Engels

*Biber Redux: Reconsidering Dimensions of Variation in American English* Rebecca J. Passonneau, Nancy Ide, Songqiao Su and Jesse Stuart

Cross-lingual Discourse Relation Analysis: A corpus study and a semi-supervised classification system Junyi Jessy Li, Marine Carpuat and Ani Nenkova

*Enforcing Topic Diversity in a Document Recommender for Conversations* Maryam Habibi and Andrei Popescu-Belis

*Identifying Important Features for Graph Retrieval* Zhuo Li, Sandra Carberry, Hui Fang and Kathleen McCoy

15:15-15:45 Coffee Break

#### Session Mo41: (15:45-17:25) Modeling of Discourse and Dialogue II

- 15:45–16:10 *Inducing Discourse Connectives from Parallel Texts* Majid Laali and Leila Kosseim
- 16:10–16:35 *Lyrics-based Analysis and Classification of Music* Michael Fell and Caroline Sporleder
- 16:35–17:00 Interpretation of Chinese Discourse Connectives for Explicit Discourse Relation Recognition
   Hen-Hsen Huang, Tai-Wei Chang, Huan-Yuan Chen and Hsin-Hsi Chen
- 17:00–17:25 *Unsupervised Coreference Resolution by Utilizing the Most Informative Relations* Nafise Sadat Moosavi and Michael Strube

Session Mo42: (15:45-17:25) Sentiment Analysis, Opinion Mining and Social Media II

- 15:45–16:10 Knowledge Sharing via Social Login: Exploiting Microblogging Service for Warming up Social Question Answering Websites Yang Xiao, Wayne Xin Zhao, Kun Wang and Zhen Xiao
- 16:10–16:35 *Review Topic Discovery with Phrases using the Pólya Urn Model* Geli Fei, Zhiyuan Chen and Bing Liu
- 16:35–17:00 Joint Opinion Relation Detection Using One-Class Deep Neural Network Liheng Xu, Kang Liu and Jun Zhao
- 17:00–17:25 *A Generative Model for Identifying Target Companies of Microblogs* Yeyun Gong, Yaqian Zhou, Ya Guo, Qi Zhang and Xuanjing Huang

# Session Mo43: (15:45-17:25) Semantic Processing, Distributional Semantics and Compositional Semantics I

- 15:45–16:10 *Inducing Latent Semantic Relations for Structured Distributional Semantics* Sujay Kumar Jauhar and Eduard Hovy
- 16:10–16:35 *Improving distributional thesauri by exploring the graph of neighbors* Vincent Claveau, Ewa Kijak and Olivier Ferret
- 16:35–17:00 *Towards Syntax-aware Compositional Distributional Semantic Models* Lorenzo Ferrone and Fabio Massimo Zanzotto
- 17:00–17:25 *Low-Dimensional Manifold Distributional Semantic Models* Georgia Athanasopoulou, Elias Iosif and Alexandros Potamianos

#### Session Mo44: (15:45-17:25) Software, Tools

- 15:45–16:10 An Entity-Centric Coreference Resolution System for Person Entities with Rich Linguistic Information Marcos Garcia and Pablo Gamallo
- 16:10–16:35 Unsupervised Multiword Segmentation of Large Corpora using Prediction-Driven Decomposition of n-grams
   Julian Brooke, Vivian Tsang, Graeme Hirst and Fraser Shein
- 16:35–17:00 *docrep: A lightweight and efficient document representation framework* Tim Dawborn and James R. Curran
- 17:00–17:25 *Why Implementation Matters: Evaluation of an Open-source Constraint Grammar Parser* Dávid Márk Nemeskey, Francis Tyers and Mans Hulden

#### Tuesday, August 26, 2014

#### Session Tu11: (09:00-10:15) Invited Talk 2

- 09:00–10:15 *Language for Communication: Language as Rational Inference* Edward Gibson
- 10:15-10:45 Coffee Break

# Session Tu21: (10:45-12:25) Syntax, Grammar Induction, Syntactic and Semantic Parsing I

- 10:45–11:10 *Soft Cross-lingual Syntax Projection for Dependency Parsing* Zhenghua Li, Min Zhang and Wenliang Chen
- 11:10–11:35 *Automatic Feature Selection for Agenda-Based Dependency Parsing* Miguel Ballesteros and Bernd Bohnet
- 11:35–12:00 Predicate-Argument Structure Analysis with Zero-Anaphora Resolution for Dialogue Systems Kenji Imamura, Ryuichiro Higashinaka and Tomoko Izumi
- 12:00–12:25 *Feature Embedding for Dependency Parsing* Wenliang Chen, Yue Zhang and Min Zhang

Session Tu22: (10:45-12:25) Sentiment Analysis, Opinion Mining and Social Media III

- 10:45–11:10 *Identifying Emotional and Informational Support in Online Health Communities* Prakhar Biyani, Cornelia Caragea, Prasenjit Mitra and John Yen
- 11:10–11:35 Identifying Emotion Labels from Psychiatric Social Texts Using Independent Component Analysis Liong Chib Yu and Chup Yuan Ha

Liang-Chih Yu and Chun-Yuan Ho

- 11:35–12:00 *Modeling Mutual Influence Between Social Actions and Social Ties* Xiaofeng Yu and Junqing Xie
- 12:00–12:25 *Discovering Topical Aspects in Microblogs* Abhimanyu Das and Anitha Kannan

#### Session Tu23: (10:45-12:25) Applications I

- 10:45–11:10 Utilizing Microblogs for Automatic News Highlights Extraction Zhongyu Wei and Wei Gao
- 11:10–11:35 *A Step Towards Usable Privacy Policy: Automatic Alignment of Privacy Statements* Fei Liu, Rohan Ramanath, Norman Sadeh and Noah A. Smith
- 11:35–12:00 An Off-the-shelf Approach to Authorship Attribution Jamal A. Nasir, Nico Görnitz and Ulf Brefeld
- 12:00–12:25 *Automatic Prediction of Aesthetics and Interestingness of Text Passages* Debasis Ganguly, Johannes Leveling and Gareth Jones

#### Session Tu24: (10:45-12:25) Modeling of Discourse and Dialogue III

- 10:45–11:10 *Triple based Background Knowledge Ranking for Document Enrichment* Muyu Zhang, Bing Qin, Ting Liu and Mao Zheng
- 11:10–11:35 Towards an open-domain conversational system fully based on natural language processing Ryuichiro Higashinaka, Kenji Imamura, Toyomi Meguro, Chiaki Miyazaki, Nozomi Kobayashi, Hiroaki Sugiyama, Toru Hirano, Toshiro Makino and Yoshihiro Matsuo
- 11:35–12:00 *The Impact of Deep Hierarchical Discourse Structures in the Evaluation of Text Coherence* Vanessa Wei Feng, Ziheng Lin and Graeme Hirst
- 12:00–12:25 *Lexical Chaining for Measuring Discourse Coherence Quality in Test-taker Essays* Swapna Somasundaran, Jill Burstein and Martin Chodorow
- 12:25-14:00 Lunch Break

Session Tu3P: (14:00-15:15) Posters II

*Improving Cloze Test Performance of Language Learners Using Web N-Grams* Martin Potthast, Matthias Hagen, Anna Beyer and Benno Stein

A Framework for Translating SMS Messages Vivek Kumar Rangarajan Sridhar, John Chen, Srinivas Bangalore and Ron Shacham

A Hybrid Approach to Features Representation for Fine-grained Arabic Named Entity Recognition Fahd Alotaibi and Mark Lee

*Prior-informed Distant Supervision for Temporal Evidence Classification* Ridho Reinanda and Maarten de Rijke

*Identification of Basic Phrases for Kazakh Language using Maximum Entropy Model* Gulila Altenbek, Xiaolong Wang and Gulizhada Haisha

*Collecting Bilingual Audio in Remote Indigenous Communities* Steven Bird, Lauren Gawne, Katie Gelbart and Isaac McAlister

*Inclusive yet Selective: Supervised Distributional Hypernymy Detection* Stephen Roller, Katrin Erk and Gemma Boleda

Automatic Discovery of Adposition Typology Rishiraj Saha Roy, Rahul Katare, Niloy Ganguly and Monojit Choudhury

What good are 'Nominalkomposita' for 'noun compounds': Multilingual Extraction and Structure Analysis of Nominal Compositions using Linguistic Restrictors Patrick Ziering and Lonneke van der Plas

Automatic Classification of Communicative Functions of Definiteness Archna Bhatia, Chu-Cheng Lin, Nathan Schneider, Yulia Tsvetkov, Fatima Talib Al-Raisi, Laleh Roostapour, Jordan Bender, Abhimanu Kumar, Lori Levin, Mandy Simons and Chris Dyer

Argument structure of adverbial derivatives in Russian Igor Boguslavsky

Active Learning in Noisy Conditions for Spoken Language Understanding Hossein Hadian and Hossein Sameti

A Self-adaptive Classifier for Efficient Text-stream Processing Naoki Yoshinaga and Masaru Kitsuregawa

A Dependency Edge-based Transfer Model for Statistical Machine Translation Hongshen Chen, Jun Xie, Fandong Meng, Wenbin Jiang and Qun Liu

*Fast Domain Adaptation of SMT models without in-Domain Parallel Data* Prashant Mathur, Sriram Venkatapathy and Nicola Cancedda

*Discriminative Language Models as a Tool for Machine Translation Error Analysis* Koichi Akabe, Graham Neubig, Sakriani Sakti, Tomoki Toda and Satoshi Nakamura

A Structured Language Model for Incremental Tree-to-String Translation Heng Yu, Haitao Mi, Liang Huang and Qun Liu

A Lexicalized Reordering Model for Hierarchical Phrase-based Translation Hailong Cao, Dongdong Zhang, Mu Li, Ming Zhou and Tiejun Zhao

Automatic Corpus Expansion for Chinese Word Segmentation by Exploiting the Redundancy of Web Information Xipeng Qiu, ChaoChao Huang and Xuanjing Huang

*Fast High-Accuracy Part-of-Speech Tagging by Independent Classifiers* Robert Moore

Morfessor FlatCat: An HMM-Based Method for Unsupervised and Semi-Supervised Learning of Morphology

Stig-Arne Grönroos, Sami Virpioja, Peter Smit and Mikko Kurimo

Japanese Word Reordering Integrated with Dependency Parsing Kazushi Yoshida, Tomohiro Ohno, Yoshihide Kato and Shigeki Matsubara

Query-focused Multi-Document Summarization: Combining a Topic Model with Graphbased Semi-supervised Learning Yanran Li and Sujian Li

*Ranking Multidocument Event Descriptions for Building Thematic Timelines* Kiem-Hieu Nguyen, Xavier Tannier and Véronique Moriceau

Integrating Language and Vision to Generate Natural Language Descriptions of Videos in the Wild

Jesse Thomason, Subhashini Venugopalan, Sergio Guadarrama, Kate Saenko and Raymond Mooney

*Cross-Topic Authorship Attribution: Will Out-Of-Topic Data Help?* Upendra Sapkota, Thamar Solorio, Manuel Montes, Steven Bethard and Paolo Rosso

Online Gaming for Crowd-sourcing Phrase-equivalents A Kumaran, Melissa Densmore and Shaishav Kumar

*Unsupervised Verb Inference from Nouns Crossing Root Boundary* Soon Gill Hong, Sin-hee Cho and Mun Yong Yi

Enriching Wikipedia's Intra-language Links by their Cross-language Transfer Takashi Tsunakawa, Makoto Araya and Hiroyuki Kaji

Chinese Irony Corpus Construction and Ironic Structure Analysis Yi-jie Tang and Hsin-Hsi Chen
*Global Methods for Cross-lingual Semantic Role and Predicate Labelling* Lonneke van der Plas, Marianna Apidianaki and Chenhua Chen

Multilingual Semantic Parsing : Parsing Multiple Languages into Semantic Representations Zhanming Jie and Wei Lu

Unsupervised Word Sense Induction using Distributional Statistics Kartik Goyal and Eduard Hovy

*Group based Self Training for E-Commerce Product Record Linkage* Xin Zhao, Yuexin Wu, Hongfei Yan and Xiaoming Li

*Reducing Over-Weighting in Supervised Term Weighting for Sentiment Analysis* Haibing Wu and Xiaodong Gu

Sentiment Classification with Graph Co-Regularization Guangyou Zhou, Jun Zhao and Daojian Zeng

*Hybrid Deep Belief Networks for Semi-supervised Sentiment Classification* Shusen Zhou, Qingcai Chen, Xiaolong Wang and Xiaoling Li

Latent Dynamic Model with Category Transition Constraint for Opinion Classification Takeshi Kobayakawa

Sentence Compression for Target-Polarity Word Collocation Extraction Yanyan Zhao, Wanxiang Che, Honglei Guo, Bing Qin, Zhong Su and Ting Liu

15:15-15:45 Coffee Break

Session Tu41: (15:45-17:25) Syntax, Grammar Induction, Syntactic and Semantic Parsing II

- 15:45–16:10 *Hybrid Grammars for Discontinuous Parsing* Mark-Jan Nederhof and Heiko Vogler
- 16:10–16:35 *From neighborhood to parenthood: the advantages of dependency representation over bigrams in Brown clustering* Simon Suster and Gertjan van Noord
- 16:35–17:00 An Empirical Evaluation of Automatic Conversion from Constituency to Dependency in Hungarian
   Katalin Ilona Simkó, Veronika Vincze, Zsolt Szántó and Richárd Farkas
- 17:00–17:25 *Deep-Syntactic Parsing* Miguel Ballesteros, Bernd Bohnet, Simon Mille and Leo Wanner

# Session Tu42: (15:45-17:25) Semantic Processing, Distributional Semantics and Compositional Semantics II

- 15:45–16:10 *Modeling Newswire Events using Neural Networks for Anomaly Detection* Pradeep Dasigi and Eduard Hovy
- 16:10–16:35 Million-scale Derivation of Semantic Relations from a Manually Constructed Predicate Taxonomy
   Motoki Sano, Kentaro Torisawa, Julien Kloetzer, Chikara Hashimoto, István Varga and Jong-Hoon Oh
- 16:35–17:00 *Combining Supervised and Unsupervised Parsing for Distributional Similarity* Martin Riedl, Irina Alles and Chris Biemann
- 17:00–17:25 A Markovian approach to distributional semantics with application to semantic compositionality Edouard Grave, Guillaume Obozinski and Francis Bach

# Session Tu43: (15:45-17:25) Applications II

15:45–16:10	A Beam-Search Decoder for Disfluency Detection Xuancong Wang, Hwee Tou Ng and Khe Chai Sim
16:10–16:35	Single Document Keyphrase Extraction Using Label Information Sumit Negi
16:35-17:00	<i>Predicting Interesting Things in Text</i> Michael Gamon, Arjun Mukherjee and Patrick Pantel
17:00–17:25	<i>Context Dependent Claim Detection</i> Ran Levy, Yonatan Bilu, Daniel Hershcovich, Ehud Aharoni and Noam Slonim
	Session Tu44: (15:45-17:25) Language Resources
15:45–16:10	Annotating Argument Components and Relations in Persuasive Essays Christian Stab and Iryna Gurevych
16:10–16:35	<b>Building a Hierarchically Aligned Chinese-English Parallel Treebank</b> Dun Deng and Nianwen Xue
16:35-17:00	<i>3arif: A Corpus of Modern Standard and Egyptian Arabic Tweets Annotated for Epistemic Modality Using Interactive Crowdsourcing</i> Rania Al-Sabbagh, Roxana Girju and Jana Diesner
17:00-17:25	<i>Empirical Analysis of Aggregation Methods for Collective Annotation</i> Ciyang Qing, Ulle Endriss, Raquel Fernandez and Justin Kruger

# Wednesday, August 27, 2014

Full Day Excursions

## Thursday, August 28, 2014

#### Session Th11: (09:00-10:15) Invited Talk 3

- 09:00–10:15 *Annotation Adaptation and Language Adaptation in NLP* Qun Liu
- 10:15-10:45 Coffee Break

Session Th21: (10:45-12:25) IE/Database Linking I

- 10:45–11:10 Collective Named Entity Disambiguation using Graph Ranking and Clique Partitioning Approaches Ayman Alhelbawy and Robert Gaizauskas
- 11:10–11:35 *Analysis and Refinement of Temporal Relation Aggregation* Taylor Cassidy and Heng Ji
- 11:35–12:00 The Wisdom of Minority: Unsupervised Slot Filling Validation based on Multi-dimensional Truth-Finding
   Dian Yu, Hongzhao Huang, Taylor Cassidy, Heng Ji, Chi Wang, Shi Zhi, Jiawei Han, Clare Voss and Malik Magdon-Ismail
- 12:00–12:25 *Common Space Embedding of Primal-Dual Relation Semantic Spaces* Hidekazu Oiwa and Jun'ichi Tsujii

#### Session Th22: (10:45-12:25) Lexical Semantics and Ontologies I

- 10:45–11:10 An Enhanced Lesk Word Sense Disambiguation Algorithm through a Distributional Semantic Model Pierpaolo Basile, Annalina Caputo and Giovanni Semeraro
- 11:10–11:35 *Word Sense Induction Using Lexical Chain based Hypergraph Model* Tao Qian, Donghong JI, Mingyao Zhang, Chong Teng and Congling Xia
- 11:35–12:00 *Minimally Supervised Classification to Semantic Categories using Automatically Acquired Symmetric Patterns* Roy Schwartz, Roi Reichart and Ari Rappoport
- 12:00–12:25 *Novel Word-sense Identification* Paul Cook, Jey Han Lau, Diana McCarthy and Timothy Baldwin

#### Session Th23: (10:45-12:25) Natural Language Generation and Summarization I

- 10:45–11:10 *Learning to Summarise Related Sentences* Emmanouil Tzouridis, Jamal Nasir and Ulf Brefeld
- 11:10–11:35 *Learning to Generate Coherent Summary with Discriminative Hidden Semi-Markov Model* Hitoshi Nishikawa, Kazuho Arita, Katsumi Tanaka, Tsutomu Hirao, Toshiro Makino and Yoshihiro Matsuo
- 11:35–12:00 *Query-Focused Opinion Summarization for User-Generated Content* Lu Wang, Hema Raghavan, Claire Cardie and Vittorio Castelli
- 12:00–12:25 *Generating Supplementary Travel Guides from Social Media* Liu Yang, Jing Jiang, Lifu Huang, Minghui Qiu and Lizi Liao

Session Th24: (10:45-12:25) Modeling of Discourse and Dialogue IV and Multimodal Processing

- 10:45–11:10 *Ensemble-Based Medical Relation Classification* Jennifer D'Souza and Vincent Ng
- 11:10–11:35 Combining Natural and Artificial Examples to Improve Implicit Discourse Relation Identification Chloé Breud and Pascel Danis

Chloé Braud and Pascal Denis

- 11:35–12:00 *Reinforcement Learning of Cooperative Persuasive Dialogue Policies using Framing* Takuya Hiraoka, Graham Neubig, Sakriani Sakti, Tomoki Toda and Satoshi Nakamura
- 12:00–12:25 *Towards multimodal modeling of physicians' diagnostic confidence and self-awareness using medical narratives* Joseph Bullard, Cecilia Ovesdotter Alm, Qi Yu, Pengcheng Shi and Anne Haake
- 12:25-14:00 Lunch Break

Session Th31: (14:00-15:15) Semantic Processing, Distributional Semantics and Compositional Semantics III

- 14:00–14:25 *Towards Semantic Validation of a Derivational Lexicon* Britta Zeller, Sebastian Padó and Jan Šnajder
- 14:25–14:50 Detecting Learner Errors in the Choice of Content Words Using Compositional Distributional Semantics Ekaterina Kochmar and Ted Briscoe
- 14:50–15:15 *A Novel Distributional Approach to Multilingual Conceptual Metaphor Recognition* Michael Mohler, Bryan Rink, David Bracewell and Marc Tomlinson

Session Th32: (14:00-15:15) Morphology, Word Segmentation, Tagging and Chunking I

- 14:00–14:25 *Part of Speech Tagging for French Social Media Data* Farhad Nooralahzadeh, Caroline Brun and Claude Roux
- 14:25–14:50 Morphological Analysis for Japanese Noisy Text based on Character-level and Word-level Normalization
   Itsumi Saito, Kugatsu Sadamitsu, Hisako Asano and Yoshihiro Matsuo
- 14:50–15:15 *Adapting taggers to Twitter with not-so-distant supervision* Barbara Plank, Dirk Hovy, Ryan McDonald and Anders Søgaard

# Session Th33: (14:00-15:15) Speech Recognition, Text-To-Speech, Spoken Language Understanding

- 14:00–14:25 Interpolated Dirichlet Class Language Model for Speech Recognition Incorporating Longdistance N-grams
   Md. Akmal Haidar and Douglas O'Shaughnessy
- 14:25–14:50 Situated Incremental Natural Language Understanding using a Multimodal, Linguistically-driven Update Model Casey Kennington, Spyros Kousidis and David Schlangen
- 14:50–15:15 *Quality Estimation for Automatic Speech Recognition* Matteo Negri, Marco Turchi, José G. C. de Souza and Falavigna Daniele

#### Session Th34: (14:00-15:15) Lesser Resourced Languages

- 14:00–14:25 *A Generic Anaphora Resolution Engine for Indian Languages* Sobha Lalitha Devi, Vijay Sundar Ram and Pattabhi RK Rao
- 14:25–14:50 *Converting Phrase Structures to Dependency Structures in Sanskrit* Pawan Goyal and Amba Kulkarni
- 14:50–15:15 *Uncertainty Detection in Hungarian Texts* Veronika Vincze
- 15:15-15:45 Coffee Break

Session Th41: (15:45-17:25) Syntax, Grammar Induction, Syntactic and Semantic Parsing III

- 15:45–16:10 *Rediscovering Annotation Projection for Cross-Lingual Parser Induction* Jörg Tiedemann
- 16:10–16:35 *Synchronous Constituent Context Model for Inducing Bilingual Synchronous Structures* Xiangyu Duan, Min Zhang and Qiaoming Zhu
- 16:35–17:00 Syntactic Parsing and Compound Recognition via Dual Decomposition: Application to French
  Joseph Le Roux, Antoine Rozenknop and Matthieu Constant
- 17:00–17:25 *Learning the Taxonomy of Function Words for Parsing* Dongchen Li, Xiantao Zhang, Dingsheng Luo and Xihong Wu

#### Session Th42: (15:45-17:25) Machine Translation I

- 15:45–16:10 *A Neural Reordering Model for Phrase-based Translation* Peng Li, Yang Liu, Maosong Sun, Tatsuya Izuha and Dakun Zhang
- 16:10–16:35 *Recurrent Neural Network-based Tuple Sequence Model for Machine Translation* Youzheng Wu, Taro Watanabe and Chiori Hori
- 16:35–17:00 *Class-Based Language Modeling for Translating into Morphologically Rich Languages* Arianna Bisazza and Christof Monz
- 17:00–17:25 *Latent Domain Translation Models in Mix-of-Domains Haystack* Cuong Hoang and Khalil Sima'an

#### Session Th43: (15:45-17:25) Linguistic and Cognitive Issues in CL and NLP I

- 15:45–16:10 Language Family Relationship Preserved in Non-native English Ryo Nagata
- 16:10–16:35 Why Gender and Age Prediction from Tweets is Hard: Lessons from a Crowdsourcing Experiment
  Dong Nguyen, Dolf Trieschnigg, A. Seza Doğruöz, Rilana Gravel, Mariet Theune, Theo Meder and Franciska De Jong
- 16:35–17:00 *Exploring Syntactic Features for Native Language Identification: A Variationist Perspective on Feature Encoding and Ensemble Optimization* Serhiy Bykh and Detmar Meurers
- 17:00–17:25 *Applying automatically parsed corpora to the study of language variation* Jelke Bloem, Arjen Versloot and Fred Weerman

# Session Th44: (15:45-17:25) Natural Language Generation and Summarization II and Paraphrasing

- 15:45–16:10 *Empirical analysis of exploiting review helpfulness for extractive summarization of online reviews* Wenting Xiong and Diane Litman
- 16:10–16:35 *Lexico-syntactic text simplification and compression with typed dependencies* Mandya Angrosh, Tadashi Nomoto and Advaith Siddharthan
- 16:35–17:00 *Learning when to point: A data-driven approach* Albert Gatt and Patrizia Paggio
- 17:00–17:25 *Generating Acrostics via Paraphrasing and Heuristic Search* Benno Stein, Matthias Hagen and Christof Bräutigam

#### Session Fr11: (09:00-10:15) Invited Talk 4

- 09:00–10:15 *Does a Computational Linguist have to be a Linguist?* Martin Kay
- 10:15-10:45 Coffee Break

Session Fr21: (10:45-12:25) Machine Translation II

- 10:45–11:10 *Query Lattice for Translation Retrieval* Meiping Dong, Yong Cheng, Yang Liu, Jia Xu, Maosong Sun, Tatsuya Izuha and Jie Hao
- 11:10–11:35 *RED: A Reference Dependency Based MT Evaluation Metric* Hui Yu, Xiaofeng Wu, Jun Xie, Wenbin Jiang, Qun Liu and Shouxun Lin
- 11:35–12:00 Quality Estimation of English-French Machine Translation: A Detailed Study of the Role of Syntax
  Rasoul Kaljahi, Jennifer Foster, Johann Roturier and Raphael Rubino
- 12:00–12:25 *Effective Incorporation of Source Syntax into Hierarchical Phrase-based Translation* Tong Xiao, Adrià de Gispert, Jingbo Zhu and Bill Byrne

#### Session Fr22: (10:45-12:25) IE/Database Linking II

- 10:45–11:10 *BEL: Bagging for Entity Linking* Zhe Zuo, Gjergji Kasneci, Toni Gruetze and Felix Naumann
- 11:10–11:35 *Exploratory Relation Extraction in Large Text Corpora* Alan Akbik, Thilo Michael and Christoph Boden
- 11:35–12:00 An Analysis of Causality between Events and its Relation to Temporal Information Paramita Mirza and Sara Tonelli
- 12:00–12:25 Exploring Fine-grained Entity Type Constraints for Distantly Supervised Relation Extraction Yang Liu, Kang Liu, Liheng Xu and Jun Zhao

# Friday, August 29, 2014 (continued)

#### Session Fr23: (10:45-12:25) Linguistic and Cognitive Issues in CL and NLP II

- 10:45–11:10 Using Collections of Human Language Intuitions to Measure Corpus Representativeness Reinhard Rapp
- 11:10–11:35 *Limited memory incremental coreference resolution* Kellie Webster and James R. Curran
- 11:35–12:00 *Left-corner Transitions on Dependency Parsing* Hiroshi Noji and Yusuke Miyao
- 12:00–12:25 Data-driven Measurement of Child Language Development with Simple Syntactic Templates Shannon Lubetich and Kenji Sagae

#### Session Fr24: (10:45-12:25) Lexical Semantics and Ontologies II

- 10:45–11:10 *Employing Event Inference to Improve Semi-Supervised Chinese Event Extraction* Peifeng Li, Qiaoming Zhu and Guodong Zhou
- 11:10–11:35 Supervised Ranking of Co-occurrence Profiles for Acquisition of Continuous Lexical Attributes Julian Brooke and Graeme Hirst
- 11:35–12:00 Unsupervised extraction of semantic relations using discourse cues Juliette Conrath, Stergos Afantenos, Nicholas Asher and Philippe Muller
- 12:00–12:25 *HARPY: Hypernyms and Alignment of Relational Paraphrases* Adam Grycner and Gerhard Weikum
- 12:25-14:00 Lunch Break

## Friday, August 29, 2014 (continued)

#### Session Fr31: (14:00-15:15) Machine Translation III

- 14:00–14:25 *Limitations of MT Quality Estimation Supervised Systems: The Tails Prediction Problem* Erwan Moreau and Carl Vogel
- 14:25–14:50 *Augment Dependency-to-String Translation with Fixed and Floating Structures* Jun Xie, Jinan Xu and Qun Liu
- 14:50–15:15 *Soft Dependency Matching for Hierarchical Phrase-based Machine Translation* Hailong Cao, Dongdong Zhang, Ming Zhou and Tiejun Zhao

Session Fr32: (14:00-15:15) Lexical Semantics and Ontologies III

- 14:00–14:25 *Using Spreading Activation to Evaluate and Improve Ontologies* Ronan Mac an tSaoir
- 14:25–14:50 *Learning to Distinguish Hypernyms and Co-Hyponyms* Julie Weeds, Daoud Clarke, Jeremy Reffin, David Weir and Bill Keller
- 14:50–15:15 "One Entity per Discourse" and "One Entity per Collocation" Improve Named-Entity Disambiguation
   Ander Barrena, Eneko Agirre, Bernardo Cabaleiro, Anselmo Peñas and Aitor Soroa

#### Session Fr33: (14:00-15:15) IE/Database Linking III

- 14:00–14:25 *Comparable Study of Event Extraction in Newswire and Biomedical Domains* Makoto Miwa, Paul Thompson, Ioannis Korkontzelos and Sophia Ananiadou
- 14:25–14:50 *A Probabilistic Co-Bootstrapping Method for Entity Set Expansion* Bei Shi, Zhenzhong Zhang, Le Sun and Xianpei Han
- 14:50–15:15 *Separating Brands from Types: an Investigation of Different Features for the Food Domain* Michael Wiegand and Dietrich Klakow

# Friday, August 29, 2014 (continued)

Session Fr34: (14:00-15:15) Morphology, Word Segmentation, Tagging and Chunking II

- 14:00–14:25 Unsupervised Instance-Based Part of Speech Induction Using Probable Substitutes Deniz Yuret, Mehmet Ali Yatbaz and Enis Sert
- 14:25–14:50 *Solving Substitution Ciphers with Combined Language Models* Bradley Hauer, Ryan Hayward and Grzegorz Kondrak
- 14:50–15:15 Unsupervised Word Segmentation in Context Gabriel Synnaeve, Isabelle Dautriche, Benjamin Börschinger, Mark Johnson and Emmanuel Dupoux
- 15:15-15:45 Coffee Break

#### Session Fr41: (15:45-17:25) Best Paper Talks and Closing

- 15:45–16:15 *Relation Classification via Convolutional Deep Neural Network* Daojian Zeng, Kang Liu, Siwei Lai, Guangyou Zhou and Jun Zhao
- 16:15–16:45 *A context-based model for Sentiment Analysis in Twitter* Andrea Vanzo, Danilo Croce and Roberto Basili
- 16:45-17:25 Closing Ceremony