emnlp2016

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Conference on Empirical Methods in Natural Language Processing

CONFERENCE PROCEEDINGS

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Preface by the General Chair

October 17, 2016

Welcome to the 2016 Conference on Empirical Methods in Natural Language Processing (EMNLP 2016) in Austin, Texas, USA!

EMNLP is annually organized by SIGDAT, the Association for Computational Linguistics' special interest group on linguistic data and corpus-based approaches to NLP. At EMNLP 2016, one of the top tier conferences in Natural Language Processing (NLP), we have witnessed how our field thrives. This is not only reflected in the number of paper submissions but also in the number of sponsors. The number of long paper submissions has increased 14.5% over that of 2015. This year, we also have seen a record high number of sponsors in EMNLP history. We're honored and grateful to have Amazon, Baidu, Google and Grammarly as the Platinum Sponsors, Bloomberg, Citadel, eBay, Facebook, IBM Research, Maluuba and Microsoft as the Gold Sponsors, AI@ISI as the Silver Sponsor, Nuance, VoiceBox and Yandex as the Bronze Sponsors. We also have Oracle as the Student Volunteer Sponsor.

A large number of people worked hard to bring this annual meeting to fruition, to whom I'm very grateful. Program Chairs, **Kevin Duh** and **Xavier Carreras**, the Area Chairs, reviewers, best paper committee members put in an immense amount of work to develop the technical program. Tutorial Chairs, **Bishan Yang** and **Rebecca Hwa**, Workshop Chairs, **Annie Louis** and **Greg Kondrak** conducted a competitive selection process in collaboration with NAACL and ACL to select 6 tutorials and 8 workshops. Sponsorship Chairs, **Michel Galley**, **Hang Li** (ACL International Sponsorship Committee Representative for EMNLP) did an excellent job to attract the record number of sponsors. Publication Chairs, **Siddharth Patwardhan**, **Daniele Pighin** (advisor), Handbook Chair, **Swapna Somasundaran** worked with a very tight schedule to assemble the proceedings, C4Me Mobile app, and handbooks. Publicity Chair, **Saif M. Mohammad** disseminated the call for papers, call for participation and other announcements in a timely manner. Webmaster, **Jackie C.K. Cheung** kept the website updated all the time, providing a professional outlook of the conference. Student Scholarship Chair and Student Volunteer Coordinator, **Vincent Ng**, played two critical roles, managing the NSF and SIGDAT scholarship, and the review of applications, coordinating the student volunteers to support the conference. SIGDAT Secretary, **Chris Callison-Burch** acted as the liaison between SIGDAT and the conference organizers. He is always available to provide great suggestions.

As usual, the conference cannot be done without Local Arrangements Chair, **Priscilla Rasmussen**, who single-handedly took care of all conference logistics. I would like to mention that I benefited greatly from last year's General Chair, **Lluís Màrquez**, for the monthly progress reports and other valuable experience. We are also grateful to the invited speakers, **Christopher Potts**, **Andreas Stolcke** and **Stefanie Tellex** who will share with us their exciting research.

I really appreciate the trust from SIGDAT officers, including previous secretary, **Noah Smith**, to coordinate the conference as the General Chair.

Finally, I'd like to thank all the authors and attendees. Your participation made a difference to the conference. I hope that you have an enjoyable and productive time at Austin. My best wishes for a successful conference!

Jian Su
EMNLP 2016 General Chair

Preface by the Program Committee Co-Chairs

October 17, 2016

Welcome to the 2016 Conference on Empirical Methods in Natural Language Processing! This year we received 1,087 valid submissions, of which 687 were long papers and 400 were short papers. We accepted 177 long papers (25.8% acceptance rate) and 87 short papers (21.8% acceptance rate), for a total of 264 papers and an overall acceptance rate of 24.3%.

The technical program at EMNLP 2016 consists of a total of 273 papers, including 9 journal papers accepted by the Transactions of ACL. We have structured the conference into three parallel oral sessions in the day and two poster sessions in the evening. Borrowing from recent NAACL conference innovations, we also run poster spotlight sessions (also called *HMM: Half-Minute Madness*[1]), where poster presenters of long papers have 30 seconds and one slide to advertise their work. Poster sessions are becoming larger due to the rapid growth in our field, and we believe it is important to ensure that all papers receive the exposure they deserve.

We are excited and grateful to have three distinguished speakers for our invited keynote talks. Christopher Potts (Stanford University) will present recent advances in rational speech acts and pragmatics. Andreas Stolcke (Microsoft Research) will talk about the challenges and opportunities in human-human-machine dialog. Stefanie Tellex (Brown University) will discuss novel methods and frameworks for enabling human-robot collaboration. We think that these are exciting research areas that can potentially impact—and be impacted by—the EMNLP community in the near future. We look forward to their keynotes and the conversations afterwards.

The program committee includes 823 primary reviewers and 99 secondary reviewers. The committee was structured into 12 thematic areas, handled by 41 area chairs. We are grateful to all program committee members for their effort and dedication during our tight reviewing schedule; without them we cannot create a strong high-quality program. We are also thankful for all authors who submitted papers, which overall cover a diverse range of topics.

Best paper awards were organized around three categories: best paper, best short paper, and best resource paper. The latter category was introduced at EMNLP 2015. Since resources have become central for scientific progress in our field, we would like this category of award to become a standard. The selection process was bottom-up: reviewers and area chairs suggested candidates, which were short-listed by us program chairs. Then, for each category we created a committee of experts to discuss the papers in depth, and we chaired the committees.

For **best paper**, the committee members were Stephen Clark, Hal Daumé III, Chris Dyer, and Julia

[1] Neologism coined by Joel Tetreault, our HMM chair.

	Long	Short	Total
Initial submissions	747	438	1,185
Withdrawn or rejected without review	60	38	98
Submissions reviewed	687	400	1,087
Submissions accepted	177	87	264
Acceptance rate	25.76%	21.75%	24.29%
TACL papers	9	0	9
Papers at EMNLP 2016	186	87	273
Oral talks	87	22	109
Poster presentations	99	65	164

Table 1: Submission statistics of EMNLP 2016

Hockenmaier. The committee selected two best long papers:

- Best Paper: *Improving Information Extraction by Acquiring External Evidence with Reinforcement Learning*, by Karthik Narasimhan, Adam Yala and Regina Barzilay.
- Best Paper: *Global Neural CCG Parsing with Optimality Guarantees*, by Kenton Lee, Mike Lewis and Luke Zettlemoyer.

In addition, two papers were given an honorable mention for best paper:

- Honorable Mention for Best Paper: *Span-Based Constituency Parsing with a Structure-Label System and Provably Optimal Dynamic Oracles*, by James Cross and Liang Huang.
- Honorable Mention for Best Paper: *Sequence-to-Sequence Learning as Beam-Search Optimization*, by Sam Wiseman and Alexander M. Rush.

For **best short paper**, the committee had Stefan Riezler, Anoop Sarkar, and Noah Smith, and the award went to:

- Best Short Paper: *Learning a Lexicon and Translation Model from Phoneme Lattices*, by Oliver Adams, Graham Neubig, Trevor Cohn, Steven Bird, Quoc Truong Do and Satoshi Nakamura.

For **best resource paper**, the committee consisted of Eneko Agirre, Mirella Lapata, and Sebastian Riedel, and the award went to:

- Best Resource Paper: *SQuAD: 100,000+ Questions for Machine Comprehension of Text*, by Pranav Rajpurkar, Jian Zhang, Konstantin Lopyrev and Percy Liang.

We are grateful to the many people who helped us at various stages of the program preparation. In particular, we would like to thank:

- Jian Su and Chris Callison-Burch, who gave us advice and support throughout the whole process, not only in their capacity as program chairs of EMNLP 2015, but also as general chair of EMNLP 2016 (Jian) and SIGDAT secretary-treasurer (Chris).
- The 41 area chairs, whose expertise and dedication we relied on heavily. They selected reviewers, coordinated the review process, led discussions, and made recommendations. We owe you a favor: Yoav Artzi, Tim Baldwin, Guillaume Bouchard, Nate Chambers, Kyunghyun Cho, Michael Collins, John DeNero, Georgiana Dinu, Sanja Fidler, Alex Fraser, Kuzman Ganchev, Ed Grefenstette, Julia Hockenmaier, Dirk Hovy, Liang Huang, Ruihong Huang, Min-Yen Kan, Daisuke Kawahara, Yang Liu, Bing Liu, André F.T. Martins, Saif Mohammad, Ray Mooney, Smaranda Muresan, Preslav Nakov, Vivi Nastase, Ariadna Quattoni, Laura Rimell, Eric Ringger, Alan Ritter, Brian Roark, David Smith, Manfred Stede, Suzanne Stevenson, Michael Strube, Joel Tetreault, Lucy Vanderwende, Dekai Wu, Wei Xu, Scott Wen-Tau Yih, and Geoff Zweig.
- Priscilla Rasmussen, our local organizer who performed amazing feats to make everything work.
- Siddharth Patwardhan and Daniele Pighin, the publication chairs.
- Swapna Somasundaran, handbook chair.
- Joel Tetreault, Brendan O'Connor, and Courtney Napoles for organizing and chairing *the HMM sessions*.
- The session chairs: Regina Barzilay, Alexandra Birch, Phil Blunsom, Yejin Choi, Ido Dagan, Marie-Catherine de Marneffe, Katrin Erk, Pascale Fung, Alona Fyshe, Rebecca Hwa, Heng Ji, Diane Litman, Yang Liu, Lluís Màrquez, André F.T. Martins, Kathy McKeown, Raymond Mooney, Preslav Nakov, Hinrich Schütze, Thamar Solorio, Hiroya Takamura, Kristina Toutanova, Bonnie Webber, and Wei Xu.
- Jackie C.K. Cheung, who maintained the EMNLP 2016 website with up-to-date information.
- Yejin Choi, who kept us connected with the ACL Exec.
- Kristina Toutanova and Lillian Lee, who helped us regarding TACL papers.
- Janyce Wiebe, Michael Strube, and Anoop Sarkar, who provided detailed advice about chairing a program committee of a large conference at the initial planning stages of the process.
- Ani Nenkova, Owen Rambow, Katrin Erk and Noah Smith (program co-chairs of NAACL and ACL this year), with which we coordinated several aspects of the major conferences this year.
- The Softconf support team, Rich Gerber and Paolo Gai, who assisted us in using the Start Conference Manager.

On behalf of all attendees at the conference, we would also like to acknowledge the generosity of our sponsors: Amazon, Baidu, Google, Grammarly, Bloomberg, Citadel, eBay, Facebook, IBM Research, Maluuba, Microsoft, AI@ISI, Nuance, VoiceBox, Yandex, and Oracle.

Chairing the program committee of EMNLP has been a great honor and a rich scientific experience. We are grateful to SIGDAT for giving us this opportunity. And we hope that you will find the program as exciting and enjoyable as we do!

Xavier Carreras and Kevin Duh
EMNLP 2016 Program Committee Co-Chairs

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Bishan Yang; Diyi Yang; Roman Yangarber; Helen Yannakoudakis; Mark Yatskar; Wenpeng Yin; Dani Yogatama; Kai Yu; Liang-Chih Yu; Lei Yu; Zhou Yu; François Yvon;

Marcos Zampieri; Fabio Massimo Zanzotto; Alessandra Zarcone; Amir Zeldes; Richard Zens; Torsten Zesch; Luke Zettlemoyer; Congle Zhang; Yue Zhang; Hao Zhang; Hui Zhang; Jiajun Zhang; Qi Zhang; Lei Zhang; Xingxing Zhang; Yuan Zhang; Min Zhang; Min Zhang; Wei Zhang; Hai Zhao; Wayne Xin Zhao; Jun Zhao; Bowen Zhou; Guodong Zhou; Yu Zhou; Xinjie Zhou; Xiaodan Zhu; Jingbo Zhu; Muhua Zhu; Larry Zitnick; Chengqing Zong; Pierre Zweigenbaum;

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Vit Baisa; JinYeong Bak; Jeremy Barnes;

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Abeed Sarker; Andrew Schneider; Minjoon Seo; Hui Shen; Prasha Shrestha; Vered Shwartz; Suzanna Sia; Edwin Simpson; Gaurav Singh; Edmundo Pavel Soriano Morales; P.K. Srijith; Gabriel Stanovsky;

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Jason Utt;

Esaú Villatoro-Tello; Yogarshi Vyas;

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Haitong Yang; Seid Muhie Yimam;

Yunxiao Zhou;

Invited Speaker: Christopher Potts

Learning in Extended and Approximate Rational Speech Acts Models

Abstract: The Rational Speech Acts (RSA) model treats language use as a recursive process in which probabilistic speaker and listener agents reason about each other's intentions to enrich, and negotiate, the semantics of their language along broadly Gricean lines. RSA builds on early work by the philosopher David Lewis and others on signaling systems as well as more recent developments in Bayesian cognitive modeling. Over the last five years, RSA has been shown to provide a unified account of numerous core phenomena in pragmatics, including metaphor, hyperbole, sarcasm, politeness, and a wide range of conversational implicatures. Its precise, quantitative nature has also facilitated an outpouring of new experimental work on these phenomena. However, applications of RSA to large-scale problems in NLP and AI have so far been limited, because the exact version of the model is intractable along several dimensions. In this talk, I'll report on recent progress in approximating RSA in ways that retains its core properties while enabling application to large datasets and complex environments in which language and action are brought together.

Bio: Christopher Potts is Professor of Linguistics and, by courtesy, of Computer Science, at Stanford, and Director of the Center for the Study of Language and Information (CSLI) at Stanford. He earned his BA in Linguistics from NYU in 1999 and his PhD from UC Santa Cruz in 2003. He was on the faculty in Linguistics at UMass Amherst from 2003 until 2009, when he headed west once again, to join Stanford Linguistics. He was a co-editor at Linguistic Inquiry 2004–2006, an associate editor at Linguistics and Philosophy 2009–2012, and has been an Action Editor at TACL since 2014. In his research, he uses computational methods to explore how emotion is expressed in language and how linguistic production and interpretation are influenced by the context of utterance. He is the author of the 2005 book The Logic of Conventional Implicatures as well as numerous scholarly papers in computational and theoretical linguistics.

Invited Speaker: Andreas Stolcke

You Talking to Me? Speech-based and Multimodal Approaches for Human versus Computer Addressee Detection

Abstract: As dialog systems become ubiquitous, we must learn how to detect when a system is spoken to, and avoid mistaking human-human speech as computer-directed input. In this talk I will discuss approaches to addressee detection in this human-human-machine dialog scenario, based on what is being said (lexical information), how it is being said (acoustic-prosodic properties), and non-speech multimodal and contextual information. I will present experimental results showing that a combination of these cues can be used effectively for human/computer address classification in several dialog scenarios.

Bio: Andreas Stolcke received a Ph.D. in computer science from the University of California at Berkeley. He was subsequently a Senior Research Engineer with the Speech Technology and Research Laboratory at SRI International, Menlo Park, CA, and is currently a Principal Researcher with the Speech and Dialog Research Group in the Microsoft Advanced Technology-Information Services group, working out of Mountain View, CA. His research interests include language modeling, speech recognition, speaker recognition, and speech understanding. He has published over 200 papers in these areas, as well as SRILM, a widely used open-source toolkit for statistical language modeling. He is a Fellow of the IEEE and of ISCA, the International Speech Communications Association.

Invited Speaker: Stefanie Tellex

Learning Models of Language, Action and Perception for Human-Robot Collaboration

Abstract: Robots can act as a force multiplier for people, whether a robot assisting an astronaut with a repair on the International Space station, a UAV taking flight over our cities, or an autonomous vehicle driving through our streets. To achieve complex tasks, it is essential for robots to move beyond merely interacting with people and toward collaboration, so that one person can easily and flexibly work with many autonomous robots. The aim of my research program is to create autonomous robots that collaborate with people to meet their needs by learning decision-theoretic models for communication, action, and perception. Communication for collaboration requires models of language that map between sentences and aspects of the external world. My work enables a robot to learn compositional models for word meanings that allow a robot to explicitly reason and communicate about its own uncertainty, increasing the speed and accuracy of human-robot communication. Action for collaboration requires models that match how people think and talk, because people communicate about all aspects of a robot's behavior, from low-level motion preferences (e.g., "Please fly up a few feet") to high-level requests (e.g., "Please inspect the building"). I am creating new methods for learning how to plan in very large, uncertain state-action spaces by using hierarchical abstraction. Perception for collaboration requires the robot to detect, localize, and manipulate the objects in its environment that are most important to its human collaborator. I am creating new methods for autonomously acquiring perceptual models in situ so the robot can perceive the objects most relevant to the human's goals. My unified decision-theoretic framework supports data-driven training and robust, feedback-driven human-robot collaboration.

Bio: Stefanie Tellex is an Assistant Professor of Computer Science and Assistant Professor of Engineering at Brown University. Her group, the Humans To Robots Lab, creates robots that seamlessly collaborate with people to meet their needs using language, gesture, and probabilistic inference, aiming to empower every person with a collaborative robot. She completed her Ph.D. at the MIT Media Lab in 2010, where she developed models for the meanings of spatial prepositions and motion verbs. Her postdoctoral work at MIT CSAIL focused on creating robots that understand natural language. She has published at SIGIR, HRI, RSS, AAAI, IROS, ICAPs and ICMI, winning Best Student Paper at SIGIR and ICMI, Best Paper at RSS, and an award from the CCC Blue Sky Ideas Initiative. Her awards include being named one of IEEE Spectrum's AI's 10 to Watch in 2013, the Richard B. Salomon Faculty Research Award at Brown University, a DARPA Young Faculty Award in 2015, and a 2016 Sloan Research Fellowship. Her work has been featured in the press on National Public Radio, MIT Technology Review, Wired UK and the Smithsonian. She was named one of Wired UK's Women Who Changed Science In 2015 and listed as one of MIT Technology Review's Ten Breakthrough Technologies in 2016.

Conference Program

Tuesday, November 1, 2016

18:30–20:00 Welcome Reception

Wednesday, November 2, 2016

07:30–17:30 Registration Day 1

08:00–08:40 ***Morning Coffee***

08:40–09:00 Session P1: Plenary Session: Opening Remarks

08:40–09:00 *Opening Remarks*
General Chair, PC Co-Chairs

09:00–10:00 Session P2: Plenary Session: Invited Talk by Christopher Potts

09:00–10:00 *Learning in Extended and Approximate Rational Speech Acts Models*
Christopher Potts

10:00–10:30 ***Coffee Break***

10:30–12:10 Session 1A: Parsing and Syntax (Long Papers)

10:30–10:55 *Span-Based Constituency Parsing with a Structure-Label System and Provably Optimal Dynamic Oracles*
James Cross and Liang Huang

10:55–11:20 *Rule Extraction for Tree-to-Tree Transducers by Cost Minimization*
Pascual Martínez-Gómez and Yusuke Miyao

11:20–11:45 *A Neural Network for Coordination Boundary Prediction*
Jessica Ficler and Yoav Goldberg

11:45–12:10 *Using Left-corner Parsing to Encode Universal Structural Constraints in Grammar Induction*
Hiroshi Noji, Yusuke Miyao and Mark Johnson

10:30–12:10 Session 1B: Information Extraction (Long Papers)

10:30–10:55 *Distinguishing Past, On-going, and Future Events: The EventStatus Corpus*
Ruihong Huang, Ignacio Cases, Dan Jurafsky, Cleo Condoravdi and Ellen Riloff

10:55–11:20 *Nested Propositions in Open Information Extraction*
Nikita Bhutani, H V Jagadish and Dragomir Radev

11:20–11:45 *A Position Encoding Convolutional Neural Network Based on Dependency Tree for Relation Classification*
Yunlun Yang, Yunhai Tong, Shulei Ma and Zhi-Hong Deng

11:45–12:10 *Learning to Recognize Discontiguous Entities*
Aldrian Obaja Muis and Wei Lu

10:30–12:10 Session 1C: Psycholinguistics / Machine Learning (Long Papers)

10:30–10:55 *Modeling Human Reading with Neural Attention*
Michael Hahn and Frank Keller

10:55–11:20 *Comparing Computational Cognitive Models of Generalization in a Language Acquisition Task*
Libby Barak, Adele E. Goldberg and Suzanne Stevenson

11:20–11:45 *Rationalizing Neural Predictions*
Tao Lei, Regina Barzilay and Tommi Jaakkola

11:45–12:10 *Deep Multi-Task Learning with Shared Memory for Text Classification*
Pengfei Liu, Xipeng Qiu and Xuanjing Huang

12:10–13:40 ***Lunch***

13:40–15:20 Session 2A: Reading Comprehension and Question Answering (Long Papers)

13:40–14:05 *Natural Language Comprehension with the EpiReader*
Adam Trischler, Zheng Ye, Xingdi Yuan, Philip Bachman, Alessandro Sordoni and Kaheer Suleman

14:05–14:30 *Creating Causal Embeddings for Question Answering with Minimal Supervision*
Rebecca Sharp, Mihai Surdeanu, Peter Jansen, Peter Clark and Michael Hammond

14:30–14:55 *Improving Semantic Parsing via Answer Type Inference*
Semih Yavuz, Izzeddin Gur, Yu Su, Mudhakar Srivatsa and Xifeng Yan

14:55–15:20 *Semantic Parsing to Probabilistic Programs for Situated Question Answering*
Jayant Krishnamurthy, Oyvind Tafjord and Aniruddha Kembhavi

13:40–15:20 Session 2B: Embeddings of Linguistic Structure (Long Papers)

13:40–14:05 *Event participant modelling with neural networks*
Ottokar Tilk, Vera Demberg, Asad Sayeed, Dietrich Klakow and Stefan Thater

14:05–14:30 *Context-Dependent Sense Embedding*
Lin Qiu, Kewei Tu and Yong Yu

14:30–14:55 *Jointly Embedding Knowledge Graphs and Logical Rules*
Shu Guo, Quan Wang, Lihong Wang, Bin Wang and Li Guo

14:55–15:20 *Learning Connective-based Word Representations for Implicit Discourse Relation Identification*
Chloé Braud and Pascal Denis

13:40–15:20 Session 2C: Sentiment and Opinion Analysis (Long Papers)

13:40–14:05 *Aspect Level Sentiment Classification with Deep Memory Network*
Duyu Tang, Bing Qin and Ting Liu

14:05–14:30 *Lifelong-RL: Lifelong Relaxation Labeling for Separating Entities and Aspects in Opinion Targets*
Lei Shu, Bing Liu, Hu Xu and Annice Kim

14:30–14:55 *Learning Sentence Embeddings with Auxiliary Tasks for Cross-Domain Sentiment Classification*
Jianfei Yu and Jing Jiang

14:55–15:20 *Attention-based LSTM Network for Cross-Lingual Sentiment Classification*
Xinjie Zhou, Xiaojun Wan and Jianguo Xiao

15:20–15:50 ***Coffee Break***

Wednesday, November 2, 2016 (continued)

15:50–17:30 Session 3A: Neural Machine Translation (Long + TACL Papers)

15:50–16:15 *[TACL] Deep Recurrent Models with Fast-Forward Connections for Neural Machine Translation*
Jie Zhou, Ying Cao, Xuguang Wang, Peng Li and Wei Xu

16:15–16:40 *Neural versus Phrase-Based Machine Translation Quality: a Case Study*
Luisa Bentivogli, Arianna Bisazza, Mauro Cettolo and Marcello Federico

16:40–17:05 *Zero-Resource Translation with Multi-Lingual Neural Machine Translation*
Orhan Firat, Baskaran Sankaran, Yaser Al-Onaizan, Fatos T. Yarman Vural and Kyunghyun Cho

17:05–17:30 *Memory-enhanced Decoder for Neural Machine Translation*
Mingxuan Wang, Zhengdong Lu, Hang Li and Qun Liu

15:50–17:30 Session 3B: Semi-supervised and Minimally Supervised Learning (Long + TACL Papers)

15:50–16:15 *Semi-Supervised Learning of Sequence Models with Method of Moments*
Zita Marinho, André F. T. Martins, Shay B. Cohen and Noah A. Smith

16:15–16:40 *[TACL] Minimally supervised models for number normalization*
Kyle Gorman and Richard Sproat

16:40–17:05 *Learning from Explicit and Implicit Supervision Jointly For Algebra Word Problems*
Shyam Upadhyay, Ming-Wei Chang, Kai-Wei Chang and Wen-tau Yih

17:05–17:30 *TweeTime : A Minimally Supervised Method for Recognizing and Normalizing Time Expressions in Twitter*
Jeniya Tabassum, Alan Ritter and Wei Xu

15:50–17:30 Session 3C: Summarization and Generation (Long Papers)

15:50–16:15 *Language as a Latent Variable: Discrete Generative Models for Sentence Compression*
Yishu Miao and Phil Blunsom

16:15–16:40 *Globally Coherent Text Generation with Neural Checklist Models*
Chloé Kiddon, Luke Zettlemoyer and Yejin Choi

16:40–17:05 *A Dataset and Evaluation Metrics for Abstractive Compression of Sentences and Short Paragraphs*
Kristina Toutanova, Chris Brockett, Ke M. Tran and Saleema Amershi

17:05–17:30 *PaCCSS-IT: A Parallel Corpus of Complex-Simple Sentences for Automatic Text Simplification*
Dominique Brunato, Andrea Cimino, Felice Dell'Orletta and Giulia Venturi

17:30–17:45 *Break*

17:45–18:15 Session P3: Plenary Session: Half Minute Madness A

18:15–20:15 Session P4: Poster Session A

[L01][DISCOURSE & DIALOGUE] *Discourse Parsing with Attention-based Hierarchical Neural Networks*
Qi Li, Tianshi Li and Baobao Chang

[L02][DISCOURSE & DIALOGUE] *Multi-view Response Selection for Human-Computer Conversation*
Xiangyang Zhou, Daxiang Dong, Hua Wu, Shiqi Zhao, Dianhai Yu, Hao Tian, Xuan Liu and Rui Yan

[L03][DISCOURSE & DIALOGUE] *Variational Neural Discourse Relation Recognizer*
Biao Zhang, Deyi Xiong, jinsong su, Qun Liu, Rongrong Ji, Hong Duan and Min Zhang

[L04][DISCOURSE & DIALOGUE] *Event Detection and Co-reference with Minimal Supervision*
Haoruo Peng, Yangqiu Song and Dan Roth

[L05][INFORMATION EXTRACTION] *Learning Term Embeddings for Taxonomic Relation Identification Using Dynamic Weighting Neural Network*
Tuan Luu Anh, Yi Tay, Siu Cheung Hui and See Kiong Ng

[L06][INFORMATION EXTRACTION] *Relation Schema Induction using Tensor Factorization with Side Information*
Madhav Nimishakavi, Uday Singh Saini and Partha Talukdar

[L07][INFORMATION EXTRACTION] *Supervised Distributional Hypernym Discovery via Domain Adaptation*
Luis Espinosa Anke, Jose Camacho-Collados, Claudio Delli Bovi and Horacio Saggion

[L08][LANGUAGE MODELING] *Latent Tree Language Model*
Tomáš Brychcín

[L09][LANGUAGE & VISION] *Comparing Data Sources and Architectures for Deep Visual Representation Learning in Semantics*
Douwe Kiela, Anita Lilla Verő and Stephen Clark

[L10][LANGUAGE & VISION] *Multimodal Compact Bilinear Pooling for Visual Question Answering and Visual Grounding*
Akira Fukui, Dong Huk Park, Daylen Yang, Anna Rohrbach, Trevor Darrell and Marcus Rohrbach

[L11][MACHINE LEARNING] *The Structured Weighted Violations Perceptron Algorithm*
Rotem Dror and Roi Reichart

[L12][MACHINE LEARNING] *How Transferable are Neural Networks in NLP Applications?*
Lili Mou, Zhao Meng, Rui Yan, Ge Li, Yan Xu, Lu Zhang and Zhi Jin

[L13][MACHINE LEARNING] *Morphological Priors for Probabilistic Neural Word Embeddings*
Parminder Bhatia, Robert Guthrie and Jacob Eisenstein

[L14][MACHINE TRANSLATION] *Automatic Cross-Lingual Similarization of Dependency Grammars for Tree-based Machine Translation*
Wenbin Jiang, Wen Zhang, Jinan Xu and Rangjia Cai

[L15][MACHINE TRANSLATION] *IRT-based Aggregation Model of Crowdsourced Pairwise Comparison for Evaluating Machine Translations*
Naoki Otani, Toshiaki Nakazawa, Daisuke Kawahara and Sadao Kurohashi

[L16][MACHINE TRANSLATION] *Variational Neural Machine Translation*
Biao Zhang, Deyi Xiong, jinsong su, Hong Duan and Min Zhang

[L17][MACHINE TRANSLATION] *Towards a Convex HMM Surrogate for Word Alignment*
Andrei Simion, Michael Collins and Cliff Stein

[L18][QUESTION ANSWERING] *Solving Verbal Questions in IQ Test by Knowledge-Powered Word Embedding*
Huazheng Wang, Fei Tian, Bin Gao, Chengjieren Zhu, Jiang Bian and Tie-Yan Liu

[L19][QUESTION ANSWERING] *Long Short-Term Memory-Networks for Machine Reading*
Jianpeng Cheng, Li Dong and Mirella Lapata

[L20][QUESTION ANSWERING] *On Generating Characteristic-rich Question Sets for QA Evaluation*
Yu Su, Huan Sun, Brian Sadler, Mudhakar Srivatsa, Izzeddin Gur, Zenghui Yan and Xifeng Yan

[L21][QUESTION ANSWERING] *Learning to Translate for Multilingual Question Answering*
Ferhan Ture and Elizabeth Boschee

[L22][QUESTION ANSWERING] *A Semiparametric Model for Bayesian Reader Identification*
Ahmed Abdelwahab, Reinhold Kliegl and Niels Landwehr

[L23][SENTIMENT ANALYSIS] *Inducing Domain-Specific Sentiment Lexicons from Unlabeled Corpora*
William L. Hamilton, Kevin Clark, Jure Leskovec and Dan Jurafsky

[L24][SENTIMENT ANALYSIS] *Attention-based LSTM for Aspect-level Sentiment Classification*
Yequan Wang, Minlie Huang, xiaoyan zhu and Li Zhao

[L25][SENTIMENT ANALYSIS] *Recursive Neural Conditional Random Fields for Aspect-based Sentiment Analysis*
Wenya Wang, Sinno Jialin Pan, Daniel Dahlmeier and Xiaokui Xiao

[L26][SENTIMENT ANALYSIS] *Extracting Aspect Specific Opinion Expressions*
Abhishek Laddha and Arjun Mukherjee

[L27][SENTIMENT ANALYSIS] *Emotion Distribution Learning from Texts*
Deyu ZHOU, Xuan Zhang, Yin Zhou, Quan Zhao and Xin Geng

[L28][SEMANTICS] *Building an Evaluation Scale using Item Response Theory*
John Lalor, Hao Wu and hong yu

[L29][SEMANTICS] *WordRank: Learning Word Embeddings via Robust Ranking*
Shihao Ji, Hyokun Yun, Pinar Yanardag, Shin Matsushima and S. V. N. Vishwanathan

[L30][SEMANTICS] *Exploring Semantic Representation in Brain Activity Using Word Embeddings*
Yu-Ping Ruan, Zhen-Hua Ling and Yu Hu

[L31][SEMANTICS] *AMR Parsing with an Incremental Joint Model*
Junsheng Zhou, Feiyu Xu, Hans Uszkoreit, Weiguang QU, Ran Li and Yanhui Gu

[L32][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Identifying Dogmatism in Social Media: Signals and Models*
Ethan Fast and Eric Horvitz

[L33][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Enhanced Personalized Search using Social Data*
Dong Zhou, Séamus Lawless, Xuan Wu, Wenyu Zhao and Jianxun Liu

[L34][SYNTAX & MORPHOLOGY] *Effective Greedy Inference for Graph-based Non-Projective Dependency Parsing*
Ilan Tchernowitz, Liron Yedidsion and Roi Reichart

[L35][SYNTAX & MORPHOLOGY] *Generating Abbreviations for Chinese Named Entities Using Recurrent Neural Network with Dynamic Dictionary*
Qi Zhang, Jin Qian, Ya Guo, Yaqian Zhou and Xuanjing Huang

[L36][SYNTAX & MORPHOLOGY] *Neural Network for Heterogeneous Annotations*
Hongshen Chen, Yue Zhang and Qun Liu

[L37][SYNTAX & MORPHOLOGY] *LAMB: A Good Shepherd of Morphologically Rich Languages*
Sebastian Ebert, Thomas Müller and Hinrich Schütze

[L38][SYNTAX & MORPHOLOGY] *Fast Coupled Sequence Labeling on Heterogeneous Annotations via Context-aware Pruning*
Zhenghua Li, Jiayuan Chao, Min Zhang and Jiwen Yang

[L39][SYNTAX & MORPHOLOGY] *Unsupervised Neural Dependency Parsing*
Yong Jiang, Wenjuan Han and Kewei Tu

[L40][SUMMARIZATION] *Generating Coherent Summaries of Scientific Articles Using Coherence Patterns*
Daraksha Parveen, Mohsen Mesgar and Michael Strube

[L41][SUMMARIZATION] *News Stream Summarization using Burst Information Networks*
Tao Ge, Lei Cui, Baobao Chang, Sujian Li, Ming Zhou and Zhifang Sui

[L42][TEXT MINING & APPLICATIONS] *Rationale-Augmented Convolutional Neural Networks for Text Classification*
Ye Zhang, Iain Marshall and Byron C. Wallace

[L43][TEXT MINING & APPLICATIONS] *Transferring User Interests Across Websites with Unstructured Text for Cold-Start Recommendation*
Yu-Yang Huang and Shou-De Lin

[L44][TEXT MINING & APPLICATIONS] *Speculation and Negation Scope Detection via Convolutional Neural Networks*
Zhong Qian, Peifeng Li, Qiaoming Zhu, Guodong Zhou, Zhunchen Luo and Wei Luo

[L45][TEXT MINING & APPLICATIONS] *Analyzing Linguistic Knowledge in Sequential Model of Sentence*
Peng Qian, Xipeng Qiu and Xuanjing Huang

[L46][TEXT MINING & APPLICATIONS] *Keyphrase Extraction Using Deep Recurrent Neural Networks on Twitter*
Qi Zhang, Yang Wang, Yeyun Gong and Xuanjing Huang

[L47][TEXT MINING & APPLICATIONS] *Solving and Generating Chinese Character Riddles*
Chuanqi Tan, Furu Wei, Li Dong, Weifeng Lv and Ming Zhou

[L48][TEXT MINING & APPLICATIONS] *Structured prediction models for RNN based sequence labeling in clinical text*
Abhyuday Jagannatha and hong yu

[L49][TEXT MINING & APPLICATIONS] *Learning to Represent Review with Tensor Decomposition for Spam Detection*
Xuepeng Wang, Kang Liu, Shizhu He and Jun Zhao

[L50][TEXT MINING & APPLICATIONS] *Stance Detection with Bidirectional Conditional Encoding*
Isabelle Augenstein, Tim Rocktäschel, Andreas Vlachos and Kalina Bontcheva

[S01][INFORMATION EXTRACTION] *Modeling Skip-Grams for Event Detection with Convolutional Neural Networks*
Thien Huu Nguyen and Ralph Grishman

[S02][INFORMATION EXTRACTION] *Porting an Open Information Extraction System from English to German*
Tobias Falke, Gabriel Stanovsky, Iryna Gurevych and Ido Dagan

[S03][INFORMATION EXTRACTION] *Named Entity Recognition for Novel Types by Transfer Learning*
Lizhen Qu, Gabriela Ferraro, Liyuan Zhou, Weiwei Hou and Timothy Baldwin

[S04][INFORMATION EXTRACTION] *Extracting Subevents via an Effective Two-phase Approach*
Allison Badgett and Ruihong Huang

[S05][LANGUAGE & VISION] *Gaussian Visual-Linguistic Embedding for Zero-Shot Recognition*
Tanmoy Mukherjee and Timothy Hospedales

[S06][LANGUAGE & VISION] *Question Relevance in VQA: Identifying Non-Visual And False-Premise Questions*
Arijit Ray, Gordon Christie, Mohit Bansal, Dhruv Batra and Devi Parikh

[S07][LANGUAGE & VISION] *Sort Story: Sorting Jumbled Images and Captions into Stories*
Harsh Agrawal, Arjun Chandrasekaran, Dhruv Batra, Devi Parikh and Mohit Bansal

[S08][LANGUAGE & VISION] *Human Attention in Visual Question Answering: Do Humans and Deep Networks look at the same regions?*
Abhishek Das, Harsh Agrawal, Larry Zitnick, Devi Parikh and Dhruv Batra

[S09][MACHINE LEARNING] *Recurrent Residual Learning for Sequence Classification*
Yiren Wang and Fei Tian

[S10][MACHINE LEARNING] *Richer Interpolative Smoothing Based on Modified Kneser-Ney Language Modeling*
Ehsan Shareghi, Trevor Cohn and Gholamreza Haffari

[S11][MACHINE LEARNING] *A General Regularization Framework for Domain Adaptation*
Wei Lu, Hai Leong Chieu and Jonathan Löfgren

[S12][MACHINE TRANSLATION] *Coverage Embedding Models for Neural Machine Translation*
Haitao Mi, Baskaran Sankaran, Zhiguo Wang and Abe Ittycheriah

[S13][SYNTAX & MORPHOLOGY] *Neural Morphological Analysis: Encoding-Decoding Canonical Segments*
Katharina Kann, Ryan Cotterell and Hinrich Schütze

[S14][SYNTAX & MORPHOLOGY] *Exploiting Mutual Benefits between Syntax and Semantic Roles using Neural Network*
Peng Shi, Zhiyang Teng and Yue Zhang

[S15][SEMANTICS] *The Effects of Data Size and Frequency Range on Distributional Semantic Models*
Magnus Sahlgren and Alessandro Lenci

[S16][SEMANTICS] *Multi-Granularity Chinese Word Embedding*
Rongchao Yin, Quan Wang, Peng Li, Rui Li and Bin Wang

[S17][SEMANTICS] *Numerically Grounded Language Models for Semantic Error Correction*
Georgios Spithourakis, Isabelle Augenstein and Sebastian Riedel

[S18][SEMANTICS] *Towards Semi-Automatic Generation of Proposition Banks for Low-Resource Languages*
Alan Akbik, vishwajeet kumar and Yunyao Li

[S19][SENTIMENT ANALYSIS] *A Hierarchical Model of Reviews for Aspect-based Sentiment Analysis*
Sebastian Ruder, Parsa Ghaffari and John G. Breslin

[S20][SENTIMENT ANALYSIS] *Are Word Embedding-based Features Useful for Sarcasm Detection?*
Aditya Joshi, Vaibhav Tripathi, Kevin Patel, Pushpak Bhattacharyya and Mark Carman

[S21][SENTIMENT ANALYSIS] *Weakly Supervised Tweet Stance Classification by Relational Bootstrapping*
Javid Ebrahimi, Dejing Dou and Daniel Lowd

[S22][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *The Gun Violence Database: A new task and data set for NLP*
Ellie Pavlick, Heng Ji, Xiaoman Pan and Chris Callison-Burch

[S23][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Fluency detection on communication networks*
Tom Lippincott and Benjamin Van Durme

[S25][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Characterizing the Language of Online Communities and its Relation to Community Reception*
Trang Tran and Mari Ostendorf

[S26][SPOKEN LANGUAGE PROCESSING] *Joint Transition-based Dependency Parsing and Disfluency Detection for Automatic Speech Recognition Texts*
Masashi Yoshikawa, Hiroyuki Shindo and Yuji Matsumoto

[S27][SPOKEN LANGUAGE PROCESSING] *Real-Time Speech Emotion and Sentiment Recognition for Interactive Dialogue Systems*
Dario Bertero, Farhad Bin Siddique, Chien-Sheng Wu, Yan Wan, Ricky Ho Yin Chan and Pascale Fung

[S28][SUMMARIZATION] *A Neural Network Architecture for Multilingual Punctuation Generation*
Miguel Ballesteros and Leo Wanner

[S29][SUMMARIZATION] *Neural Headline Generation on Abstract Meaning Representation*
Sho Takase, Jun Suzuki, Naoaki Okazaki, Tsutomu Hirao and Masaaki Nagata

[S30][TEXT MINING & APPLICATIONS] *Robust Gram Embeddings*
Taygun Kekec and David M. J. Tax

[S31][TEXT MINING & APPLICATIONS] *SimpleScience: Lexical Simplification of Scientific Terminology*
Yea Seul Kim, Jessica Hullman, Matthew Burgess and Eytan Adar

[S32][TEXT MINING & APPLICATIONS] *Automatic Features for Essay Scoring – An Empirical Study*
Fei Dong and Yue Zhang

Thursday, November 3, 2016

07:30–17:30 Registration Day 2

08:00–09:00 ***Morning Coffee***

09:00–10:00 Session P5: Plenary Session: Invited Talk by Stefanie Tellex

09:00–10:00 *Learning Models of Language, Action and Perception for Human-Robot Collaboration*
Stefanie Tellex

10:00–10:30 ***Coffee Break***

10:30–12:10 Session 4A: Semantics and Semantic Parsing (Long Papers)

10:30–10:55 *Semantic Parsing with Semi-Supervised Sequential Autoencoders*
Tomáš Kočiský, Gábor Melis, Edward Grefenstette, Chris Dyer, Wang Ling, Phil Blunsom and Karl Moritz Hermann

10:55–11:20 *Equation Parsing : Mapping Sentences to Grounded Equations*
Subhro Roy, Shyam Upadhyay and Dan Roth

11:20–11:45 *Automatic Extraction of Implicit Interpretations from Modal Constructions*
Jordan Sanders and Eduardo Blanco

11:45–12:10 *Understanding Negation in Positive Terms Using Syntactic Dependencies*
Zahra Sarabi and Eduardo Blanco

10:30–12:10 Session 4B: NLP for Social Science and Health (Long + TACL Papers)

10:30–10:55 *Demographic Dialectal Variation in Social Media: A Case Study of African-American English*
Su Lin Blodgett, Lisa Green and Brendan O'Connor

10:55–11:20 *Understanding Language Preference for Expression of Opinion and Sentiment: What do Hindi-English Speakers do on Twitter?*
Koustav Rudra, Shruti Rijhwani, Rafiya Begum, Kalika Bali, Monojit Choudhury and Niloy Ganguly

11:20–11:45 *Detecting and Characterizing Events*
Allison Chaney, Hanna Wallach, Matthew Connelly and David Blei

11:45–12:10 *[TACL] Large-scale Analysis of Counseling Conversations: An Application of Natural Language Processing to Mental Health*
Tim Althoff, Kevin Clark and Jure Leskovec

10:30–12:10 Session 4C: Language Models (Long + TACL Papers)

10:30–10:55 *[TACL] Fast, Small and Exact: Infinite-order Language Modelling with Compressed Suffix Trees*
Ehsan Shareghi, Matthias Petri, Gholamreza Haffari and Trevor Cohn

10:55–11:20 *Convolutional Neural Network Language Models*
Ngoc-Quan Pham, Germán Kruszewski and Gemma Boleda

11:20–11:45 *[TACL] Sparse Non-negative Matrix Language Modeling*
Joris Pelemans, Noam Shazeer and Ciprian Chelba

11:45–12:10 *Generalizing and Hybridizing Count-based and Neural Language Models*
Graham Neubig and Chris Dyer

12:10–13:40 *Lunch*

Thursday, November 3, 2016 (continued)

13:00–13:40 Session P6: SIGDAT Business Meeting

13:40–15:20 Session 5A: Text Generation (Long Papers)

13:40–14:05 *Reasoning about Pragmatics with Neural Listeners and Speakers*
Jacob Andreas and Dan Klein

14:05–14:30 *Generating Topical Poetry*
Marjan Ghazvininejad, Xing Shi, Yejin Choi and Kevin Knight

14:30–14:55 *Deep Reinforcement Learning for Dialogue Generation*
Jiwei Li, Will Monroe, Alan Ritter, Dan Jurafsky, Michel Galley and Jianfeng Gao

14:55–15:20 *Neural Text Generation from Structured Data with Application to the Biography Domain*
Rémi Lebret, David Grangier and Michael Auli

13:40–15:20 Session 5B: Discourse and Document Structure (Long Papers)

13:40–14:05 *What makes a convincing argument? Empirical analysis and detecting attributes of convincingness in Web argumentation*
Ivan Habernal and Iryna Gurevych

14:05–14:30 *Recognizing Implicit Discourse Relations via Repeated Reading: Neural Networks with Multi-Level Attention*
Yang Liu and Sujian Li

14:30–14:55 *Antecedent Selection for Sluicing: Structure and Content*
Pranav Anand and Daniel Hardt

14:55–15:20 *Intra-Sentential Subject Zero Anaphora Resolution using Multi-Column Convolutional Neural Network*
Ryu Iida, Kentaro Torisawa, Jong-Hoon Oh, Canasai Kruengkrai and Julien Kloetzer

Thursday, November 3, 2016 (continued)

13:40–15:20 Session 5C: Machine Translation and Multilingual Applications (Long Papers)

13:40–14:05 *An Unsupervised Probability Model for Speech-to-Translation Alignment of Low-Resource Languages*
Antonios Anastasopoulos, David Chiang and Long Duong

14:05–14:30 *HUME: Human UCCA-Based Evaluation of Machine Translation*
Alexandra Birch, Omri Abend, Ondřej Bojar and Barry Haddow

14:30–14:55 *Improving Multilingual Named Entity Recognition with Wikipedia Entity Type Mapping*
Jian Ni and Radu Florian

14:55–15:20 *Learning Crosslingual Word Embeddings without Bilingual Corpora*
Long Duong, Hiroshi Kanayama, Tengfei Ma, Steven Bird and Trevor Cohn

15:20–15:50 *Coffee Break*

15:50–17:30 Session 6A: Neural Sequence-to-Sequence Models (Long Papers)

15:50–16:15 *Sequence-to-Sequence Learning as Beam-Search Optimization*
Sam Wiseman and Alexander M. Rush

16:15–16:40 *Online Segment to Segment Neural Transduction*
Lei Yu, Jan Buys and Phil Blunsom

16:40–17:05 *Sequence-Level Knowledge Distillation*
Yoon Kim and Alexander M. Rush

17:05–17:30 *Controlling Output Length in Neural Encoder-Decoders*
Yuta Kikuchi, Graham Neubig, Ryohei Sasano, Hiroya Takamura and Manabu Okumura

15:50–17:30 Session 6B: Text Mining and NLP Applications (Long + TACL Papers)

15:50–16:15 *Poet Admits // Mute Cypher: Beam Search to find Mutually Enciphering Poetic Texts*
Cole Peterson and Alona Fyshe

16:15–16:40 *All Fingers are not Equal: Intensity of References in Scientific Articles*
Tanmoy Chakraborty and Ramasuri Narayanam

16:40–17:05 *Improving Users' Demographic Prediction via the Videos They Talk about*
Yuan Wang, Yang Xiao, Chao Ma and Zhen Xiao

17:05–17:30 *[TACL] Understanding Satirical Articles Using Common-Sense*
Dan Goldwasser and Xiao Zhang

15:50–17:30 Session 6C: Knowledge Base and Inference (Long Papers)

15:50–16:15 *AFET: Automatic Fine-Grained Entity Typing by Hierarchical Partial-Label Embedding*
Xiang Ren, Wenqi He, Meng Qu, Lifu Huang, Heng Ji and Jiawei Han

16:15–16:40 *Mining Inference Formulas by Goal-Directed Random Walks*
Zhuoyu Wei, Jun Zhao and Kang Liu

16:40–17:05 *Lifted Rule Injection for Relation Embeddings*
Thomas Demeester, Tim Rocktäschel and Sebastian Riedel

17:05–17:30 *Key-Value Memory Networks for Directly Reading Documents*
Alexander Miller, Adam Fisch, Jesse Dodge, Amir-Hossein Karimi, Antoine Bordes and Jason Weston

17:30–17:45 *Break*

Thursday, November 3, 2016 (continued)

17:45–18:15 Session P7: Plenary Session: Half-minute Madness B

18:15–20:15 Session P8: Poster Session B

[L01][DISCOURSE & DIALOGUE] *Analyzing Framing through the Casts of Characters in the News*
Dallas Card, Justin Gross, Amber Boydstun and Noah A. Smith

[L02][DISCOURSE & DIALOGUE] *The Teams Corpus and Entrainment in Multi-Party Spoken Dialogues*
Diane Litman, Susannah Paletz, Zahra Rahimi, Stefani Allegretti and Caitlin Rice

[L03][DISCOURSE & DIALOGUE] *Personalized Emphasis Framing for Persuasive Message Generation*
Tao Ding and Shimei Pan

[L04][INFORMATION EXTRACTION] *Cross Sentence Inference for Process Knowledge*
Samuel Louvan, Chetan Naik, Sadhana Kumaravel, Heeyoung Kwon, Niranjan Balasubramanian and Peter Clark

[L05][INFORMATION EXTRACTION] *Toward Socially-Infused Information Extraction: Embedding Authors, Mentions, and Entities*
Yi Yang, Ming-Wei Chang and Jacob Eisenstein

[L06][INFORMATION EXTRACTION] *Phonologically Aware Neural Model for Named Entity Recognition in Low Resource Transfer Settings*
Akash Bharadwaj, David Mortensen, Chris Dyer and Jaime Carbonell

[L07][LANGUAGE MODELING] *Long-Short Range Context Neural Networks for Language Modeling*
Youssef Oualil, Mittul Singh, Clayton Greenberg and Dietrich Klakow

[L08][LANGUAGE & VISION] *Jointly Learning Grounded Task Structures from Language Instruction and Visual Demonstration*
Changsong Liu, Shaohua Yang, Sari Saba-Sadiya, Nishant Shukla, Yunzhong He, Song-chun Zhu and Joyce Chai

[L09][LANGUAGE & VISION] *Resolving Language and Vision Ambiguities Together: Joint Segmentation & Prepositional Attachment Resolution in Captioned Scenes*
Gordon Christie, Ankit Laddha, Aishwarya Agrawal, Stanislaw Antol, Yash Goyal, Kevin Kochersberger and Dhruv Batra

Thursday, November 3, 2016 (continued)

[L10][MACHINE LEARNING] *Charagram: Embedding Words and Sentences via Character n-grams*
John Wieting, Mohit Bansal, Kevin Gimpel and Karen Livescu

[L11][MACHINE LEARNING] *Length bias in Encoder Decoder Models and a Case for Global Conditioning*
Pavel Sountsov and Sunita Sarawagi

[L12] *[TACL][Machine Learning] Comparing Apples to Apple: The Effects of Stemmers on Topic Models*
Alexandra Schofield and David Mimno

[L13][MACHINE TRANSLATION] *Does String-Based Neural MT Learn Source Syntax?*
Xing Shi, Inkit Padhi and Kevin Knight

[L14][MACHINE TRANSLATION] *Exploiting Source-side Monolingual Data in Neural Machine Translation*
Jiajun Zhang and Chengqing Zong

[L15][MACHINE TRANSLATION] *Phrase-based Machine Translation is State-of-the-Art for Automatic Grammatical Error Correction*
Marcin Junczys-Dowmunt and Roman Grundkiewicz

[L16][MACHINE TRANSLATION] *Incorporating Discrete Translation Lexicons into Neural Machine Translation*
Philip Arthur, Graham Neubig and Satoshi Nakamura

[L17][MACHINE TRANSLATION] *Transfer Learning for Low-Resource Neural Machine Translation*
Barret Zoph, Deniz Yuret, Jonathan May and Kevin Knight

[L18][QUESTION ANSWERING] *MixKMeans: Clustering Question-Answer Archives*
Deepak P

[L19][QUESTION ANSWERING] *It Takes Three to Tango: Triangulation Approach to Answer Ranking in Community Question Answering*
Preslav Nakov, Lluís Màrquez and Francisco Guzmán

[L20][QUESTION ANSWERING] *Character-Level Question Answering with Attention*
Xiaodong He and David Golub

[L21][QUESTION ANSWERING] *Learning to Generate Textual Data*
Guillaume Bouchard, Pontus Stenetorp and Sebastian Riedel

[L22][QUESTION ANSWERING] *A Theme-Rewriting Approach for Generating Algebra Word Problems*
Rik Koncel-Kedziorski, Ioannis Konstas, Luke Zettlemoyer and Hannaneh Hajishirzi

[L23][SENTIMENT ANALYSIS] *Context-Sensitive Lexicon Features for Neural Sentiment Analysis*
Zhiyang Teng, Duy Tin Vo and Yue Zhang

[L24][SENTIMENT ANALYSIS] *Event-Driven Emotion Cause Extraction with Corpus Construction*
Lin Gui, Dongyin Wu, Ruifeng Xu, Qin Lu and Yu Zhou

[L25][SENTIMENT ANALYSIS] *Neural Sentiment Classification with User and Product Attention*
Huimin Chen, Maosong Sun, Cunchao Tu, Yankai Lin and Zhiyuan Liu

[L26][SENTIMENT ANALYSIS] *Cached Long Short-Term Memory Neural Networks for Document-Level Sentiment Classification*
Jiacheng Xu, Danlu Chen, Xipeng Qiu and Xuanjing Huang

[L27][SENTIMENT ANALYSIS] *Deep Neural Networks with Massive Learned Knowledge*
Zhiting Hu, Zichao Yang, Ruslan Salakhutdinov and Eric Xing

[L28][SEMANTICS] *De-Conflated Semantic Representations*
Mohammad Taher Pilehvar and Nigel Collier

[L29][SEMANTICS] *Improving Sparse Word Representations with Distributional Inference for Semantic Composition*
Thomas Kober, Julie Weeds, Jeremy Reffin and David Weir

[L30][SEMANTICS] *Modelling Interaction of Sentence Pair with Coupled-LSTMs*
Pengfei Liu, Xipeng Qiu, Yaqian Zhou, Jifan Chen and Xuanjing Huang

[L31][SEMANTICS] *Universal Decompositional Semantics on Universal Dependencies*
Aaron Steven White, Drew Reisinger, Keisuke Sakaguchi, Tim Vieira, Sheng Zhang, Rachel Rudinger, Kyle Rawlins and Benjamin Van Durme

[L32][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Friends with Motives: Using Text to Infer Influence on SCOTUS*
Yanchuan Sim, Bryan Routledge and Noah A. Smith

Thursday, November 3, 2016 (continued)

[L33][SYNTAX & MORPHOLOGY] *Verb Phrase Ellipsis Resolution Using Discriminative and Margin-Infused Algorithms*
Kian Kenyon-Dean, Jackie Chi Kit Cheung and Doina Precup

[L34][SYNTAX & MORPHOLOGY] *Distilling an Ensemble of Greedy Dependency Parsers into One MST Parser*
Adhiguna Kuncoro, Miguel Ballesteros, Lingpeng Kong, Chris Dyer and Noah A. Smith

[L35][SYNTAX & MORPHOLOGY] *LSTM Shift-Reduce CCG Parsing*
Wenduan Xu

[L36][SYNTAX & MORPHOLOGY] *An Evaluation of Parser Robustness for Ungrammatical Sentences*
Homa B. Hashemi and Rebecca Hwa

[L37][SYNTAX & MORPHOLOGY] *Neural Shift-Reduce CCG Semantic Parsing*
Dipendra Kumar Misra and Yoav Artzi

[L38][SYNTAX & MORPHOLOGY] *Syntactic Parsing of Web Queries*
Xiangyan Sun, Haixun Wang, Yanghua Xiao and Zhongyuan Wang

[L39][SUMMARIZATION] *Unsupervised Text Recap Extraction for TV Series*
Hongliang Yu, Shikun Zhang and Louis-Philippe Morency

[L40][TEXT MINING & APPLICATIONS] *On- and Off-Topic Classification and Semantic Annotation of User-Generated Software Requirements*
Markus Dollmann and Michaela Geierhos

[L41][TEXT MINING & APPLICATIONS] *Deceptive Review Spam Detection via Exploiting Task Relatedness and Unlabeled Data*
Zhen Hai, Peilin Zhao, Peng Cheng, Peng Yang, Xiao-Li Li and Guangxia Li

[L42][TEXT MINING & APPLICATIONS] *Regularizing Text Categorization with Clusters of Words*
Konstantinos Skianis, Francois Rousseau and Michalis Vazirgiannis

[L43][TEXT MINING & APPLICATIONS] *Deep Reinforcement Learning with a Combinatorial Action Space for Predicting Popular Reddit Threads*
Ji He, Mari Ostendorf, Xiaodong He, Jianshu Chen, Jianfeng Gao, Lihong Li and Li Deng

Thursday, November 3, 2016 (continued)

[L44][TEXT MINING & APPLICATIONS] *Non-Literal Text Reuse in Historical Texts: An Approach to Identify Reuse Transformations and its Application to Bible Reuse*
Maria Moritz, Andreas Wiederhold, Barbara Pavlek, Yuri Bizzoni and Marco Büchler

[L45][TEXT MINING & APPLICATIONS] *A Graph Degeneracy-based Approach to Keyword Extraction*
Antoine Tixier, Fragkiskos Malliaros and Michalis Vazirgiannis

[L46][TEXT MINING & APPLICATIONS] *Predicting the Relative Difficulty of Single Sentences With and Without Surrounding Context*
Elliot Schumacher, Maxine Eskenazi, Gwen Frishkoff and Kevyn Collins-Thompson

[L47][TEXT MINING & APPLICATIONS] *A Neural Approach to Automated Essay Scoring*
Kaveh Taghipour and Hwee Tou Ng

[L48][TEXT MINING & APPLICATIONS] *Non-uniform Language Detection in Technical Writing*
Weibo Wang, Abidalrahman Moh'd, Aminul Islam, Axel Soto and Evangelos Milios

[L49][TEXT MINING & APPLICATIONS] *Adapting Grammatical Error Correction Based on the Native Language of Writers with Neural Network Joint Models*
Shamil Chollampatt, Duc Tam Hoang and Hwee Tou Ng

[S01][MACHINE TRANSLATION] *Orthographic Syllable as basic unit for SMT between Related Languages*
Anoop Kunchukuttan and Pushpak Bhattacharyya

[S02][TEXT MINING & APPLICATIONS] *Neural Generation of Regular Expressions from Natural Language with Minimal Domain Knowledge*
Nicholas Locascio, Karthik Narasimhan, Eduardo De Leon, Nate Kushman and Regina Barzilay

[S03][INFORMATION EXTRACTION] *Supervised Keyphrase Extraction as Positive Unlabeled Learning*
Lucas Sterckx, Cornelia Caragea, Thomas Demeester and Chris Develder

[S04][INFORMATION EXTRACTION] *Learning to Answer Questions from Wikipedia Infoboxes*
Alvaro Morales, Varot Premtoon, Cordelia Avery, Sue Felshin and Boris Katz

[S05][INFORMATION EXTRACTION] *Timeline extraction using distant supervision and joint inference*
Savelie Cornegruta and Andreas Vlachos

Thursday, November 3, 2016 (continued)

[S06][INFORMATION EXTRACTION] *Combining Supervised and Unsupervised Ensembles for Knowledge Base Population*
Nazneen Fatema Rajani and Raymond Mooney

[S07][LANGUAGE & VISION] *Character Sequence Models for Colorful Words*
Kazuya Kawakami, Chris Dyer, Bryan Routledge and Noah A. Smith

[S08][LANGUAGE & VISION] *Analyzing the Behavior of Visual Question Answering Models*
Aishwarya Agrawal, Dhruv Batra and Devi Parikh

[S09][LANGUAGE & VISION] *Improving LSTM-based Video Description with Linguistic Knowledge Mined from Text*
Subhashini Venugopalan, Lisa Anne Hendricks, Raymond Mooney and Kate Saenko

[S10][SEMANTICS] *Representing Verbs with Rich Contexts: an Evaluation on Verb Similarity*
Emmanuele Chersoni, Enrico Santus, Alessandro Lenci, Philippe Blache and Chu-Ren Huang

[S11][MACHINE LEARNING] *Speed-Accuracy Tradeoffs in Tagging with Variable-Order CRFs and Structured Sparsity*
Tim Vieira, Ryan Cotterell and Jason Eisner

[S12][MACHINE LEARNING] *Learning Robust Representations of Text*
Yitong Li, Trevor Cohn and Timothy Baldwin

[S13][MACHINE LEARNING] *Modified Dirichlet Distribution: Allowing Negative Parameters to Induce Stronger Sparsity*
Kewei Tu

[S14][MACHINE LEARNING] *Gated Word-Character Recurrent Language Model*
Yasumasa Miyamoto and Kyunghyun Cho

[S15][SYNTAX & MORPHOLOGY] *Unsupervised Word Alignment by Agreement Under ITG Constraint*
Hidetaka Kamigaito, Akihiro Tamura, Hiroya Takamura, Manabu Okumura and Eiichiro Sumita

[S16][SYNTAX & MORPHOLOGY] *Training with Exploration Improves a Greedy Stack LSTM Parser*
Miguel Ballesteros, Yoav Goldberg, Chris Dyer and Noah A. Smith

Thursday, November 3, 2016 (continued)

[S17][SEMANTICS] *Capturing Argument Relationship for Chinese Semantic Role Labeling*
Lei Sha, Sujian Li, Baobao Chang, Zhifang Sui and Tingsong Jiang

[S18][SEMANTICS] *BrainBench: A Brain-Image Test Suite for Distributional Semantic Models*
Haoyan Xu, Brian Murphy and Alona Fyshe

[S19][SEMANTICS] *Evaluating Induced CCG Parsers on Grounded Semantic Parsing*
Yonatan Bisk, Siva Reddy, John Blitzer, Julia Hockenmaier and Mark Steedman

[S20][SEMANTICS] *Vector-space models for PPDB paraphrase ranking in context*
Marianna Apidianaki

[S21][SENTIMENT ANALYSIS] *Interpreting Neural Networks to Improve Politeness Comprehension*
Malika Aubakirova and Mohit Bansal

[S22][SENTIMENT ANALYSIS] *Does 'well-being' translate on Twitter?*
Laura Smith, Salvatore Giorgi, Rishi Solanki, Johannes Eichstaedt, H. Andrew Schwartz, Muhammad Abdul-Mageed, Anneke Buffone and Lyle Ungar

[S23][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Beyond Canonical Texts: A Computational Analysis of Fanfiction*
Smitha Milli and David Bamman

[S24][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Using Syntactic and Semantic Context to Explore Psychodemographic Differences in Self-reference*
Masoud Rouhizadeh, Lyle Ungar, Anneke Buffone and H. Andrew Schwartz

[S25][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Learning to Identify Metaphors from a Corpus of Proverbs*
Gözde Özbal, Carlo Strapparava, Serra Sinem Tekiroglu and Daniele Pighin

[S26][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *An Embedding Model for Predicting Roll-Call Votes*
Peter Kraft, Hirsh Jain and Alexander M. Rush

[S27][SPOKEN LANGUAGE PROCESSING] *Natural Language Model Re-usability for Scaling to Different Domains*
Young-Bum Kim, Alexandre Rochette and Ruhi Sarikaya

[S28][SPOKEN LANGUAGE PROCESSING] *Leveraging Sentence-level Information with Encoder LSTM for Semantic Slot Filling*
Gakuto Kurata, Bing Xiang, Bowen Zhou and Mo Yu

Thursday, November 3, 2016 (continued)

[S29][SUMMARIZATION] *AMR-to-text generation as a Traveling Salesman Problem*
Linfeng Song, Yue Zhang, Xiaochang Peng, Zhiguo Wang and Daniel Gildea

[S30][TEXT MINING & APPLICATIONS] *Learning to Capitalize with Character-Level Recurrent Neural Networks: An Empirical Study*
Raymond Hendy Susanto, Hai Leong Chieu and Wei Lu

[S31][TEXT MINING & APPLICATIONS] *The Effects of the Content of FOMC Communications on US Treasury Rates*
Christopher Rohlfs, Sunandan Chakraborty and Lakshminarayanan Subramanian

[S32][TEXT MINING & APPLICATIONS] *Learning to refine text based recommendations*
Youyang Gu, Tao Lei, Regina Barzilay and Tommi Jaakkola

[S33][TEXT MINING & APPLICATIONS] *There's No Comparison: Reference-less Evaluation Metrics in Grammatical Error Correction*
Courtney Napoles, Keisuke Sakaguchi and Joel Tetreault

[S34][SOCIAL MEDIA & COMPUTATIONAL SOCIAL SCIENCE] *Cultural Shift or Linguistic Drift? Comparing Two Computational Measures of Semantic Change*
William L. Hamilton, Jure Leskovec and Dan Jurafsky

Friday, November 4, 2016

07:30–17:30 Registration Day 3

08:00–09:00 ***Morning Coffee***

09:00–10:00 Session P9: Plenary Session: Invited Talk by Andreas Stolcke

09:00–10:00 *You Talking to Me? Speech-based and Multimodal Approaches for Human versus Computer Addressee Detection*
Andreas Stolcke

10:00–10:30 ***Coffee Break***

Friday, November 4, 2016 (continued)

10:30–12:10 Session 7A: Dialogue Systems (Long Papers)

10:30–10:55 *How NOT To Evaluate Your Dialogue System: An Empirical Study of Unsupervised Evaluation Metrics for Dialogue Response Generation*
Chia-Wei Liu, Ryan Lowe, Iulian Serban, Mike Noseworthy, Laurent Charlin and Joelle Pineau

10:55–11:20 *Addressee and Response Selection for Multi-Party Conversation*
Hiroki Ouchi and Yuta Tsuboi

11:20–11:45 *Nonparametric Bayesian Models for Spoken Language Understanding*
Kei Wakabayashi, Johane Takeuchi, Kotaro Funakoshi and Mikio Nakano

11:45–12:10 *Conditional Generation and Snapshot Learning in Neural Dialogue Systems*
Tsung-Hsien Wen, Milica Gasic, Nikola Mrkšić, Lina M. Rojas Barahona, Pei-Hao Su, Stefan Ultes, David Vandyke and Steve Young

10:30–12:10 Session 7B: Semantic Similarity (Long Papers)

10:30–10:55 *Relations such as Hypernymy: Identifying and Exploiting Hearst Patterns in Distributional Vectors for Lexical Entailment*
Stephen Roller and Katrin Erk

10:55–11:20 *SimVerb-3500: A Large-Scale Evaluation Set of Verb Similarity*
Daniela Gerz, Ivan Vulić, Felix Hill, Roi Reichart and Anna Korhonen

11:20–11:45 *POLY: Mining Relational Paraphrases from Multilingual Sentences*
Adam Grycner and Gerhard Weikum

11:45–12:10 *Exploiting Sentence Similarities for Better Alignments*
Tao Li and Vivek Srikumar

Friday, November 4, 2016 (continued)

10:30–12:10 Session 7C: Dependency Parsing (Long + TACL Papers)

10:30–10:55 *Bi-directional Attention with Agreement for Dependency Parsing*
Hao Cheng, Hao Fang, Xiaodong He, Jianfeng Gao and Li Deng

10:55–11:20 *[TACL] The Galactic Dependencies Treebanks: Getting More Data by Synthesizing New Languages*
Dingquan Wang and Jason Eisner

11:20–11:45 *[TACL] Easy-First Dependency Parsing with Hierarchical Tree LSTMs*
Eliyahu Kiperwasser and Yoav Goldberg

11:45–12:10 *Anchoring and Agreement in Syntactic Annotations*
Yevgeni Berzak, Yan Huang, Andrei Barbu, Anna Korhonen and Boris Katz

12:10–13:40 ***Lunch***

13:40–15:25 Session 8A: Short Paper Oral Session I

13:40–13:55 *Tense Manages to Predict Implicative Behavior in Verbs*
Ellie Pavlick and Chris Callison-Burch

13:55–14:10 *Who did What: A Large-Scale Person-Centered Cloze Dataset*
Takeshi Onishi, Hai Wang, Mohit Bansal, Kevin Gimpel and David McAllester

14:10–14:25 *Building compositional semantics and higher-order inference system for a wide-coverage Japanese CCG parser*
Koji Mineshima, Ribeka Tanaka, Pascual Martínez-Gómez, Yusuke Miyao and Daisuke Bekki

14:25–14:40 *Learning to Generate Compositional Color Descriptions*
Will Monroe, Noah D. Goodman and Christopher Potts

14:40–14:55 *A Decomposable Attention Model for Natural Language Inference*
Ankur Parikh, Oscar Täckström, Dipanjan Das and Jakob Uszkoreit

14:55–15:10 *Deep Reinforcement Learning for Mention-Ranking Coreference Models*
Kevin Clark and Christopher D. Manning

Friday, November 4, 2016 (continued)

15:10–15:25 *A Stacking Gated Neural Architecture for Implicit Discourse Relation Classification*
Lianhui Qin, Zhisong Zhang and Hai Zhao

13:40–15:25 Session 8B: Short Paper Oral Session II

13:40–13:55 *Insertion Position Selection Model for Flexible Non-Terminals in Dependency Tree-to-Tree Machine Translation*
Toshiaki Nakazawa, John Richardson and Sadao Kurohashi

13:55–14:10 *Why Neural Translations are the Right Length*
Xing Shi, Kevin Knight and Deniz Yuret

14:10–14:25 *Supervised Attentions for Neural Machine Translation*
Haitao Mi, Zhiguo Wang and Abe Ittycheriah

14:25–14:40 *Learning principled bilingual mappings of word embeddings while preserving monolingual invariance*
Mikel Artetxe, Gorka Labaka and Eneko Agirre

14:40–14:55 *Measuring the behavioral impact of machine translation quality improvements with A/B testing*
Ben Russell and Duncan Gillespie

14:55–15:10 *Creating a Large Benchmark for Open Information Extraction*
Gabriel Stanovsky and Ido Dagan

15:10–15:25 *Bilingually-constrained Synthetic Data for Implicit Discourse Relation Recognition*
Changxing Wu, xiaodong shi, Yidong Chen, Yanzhou Huang and jinsong su

13:40–15:25 Session 8C: Short Paper Oral Session III

13:40–13:55 *Transition-Based Dependency Parsing with Heuristic Backtracking*
Jacob Buckman, Miguel Ballesteros and Chris Dyer

13:55–14:10 *Word Ordering Without Syntax*
Allen Schmaltz, Alexander M. Rush and Stuart Shieber

14:10–14:25 *Morphological Segmentation Inside-Out*
Ryan Cotterell, Arun Kumar and Hinrich Schütze

14:25–14:40 *Parsing as Language Modeling*
Do Kook Choe and Eugene Charniak

14:40–14:55 *Human-in-the-Loop Parsing*
Luheng He, Julian Michael, Mike Lewis and Luke Zettlemoyer

14:55–15:10 *Unsupervised Timeline Generation for Wikipedia History Articles*
Sandro Bauer and Simone Teufel

15:10–15:25 *Encoding Temporal Information for Time-Aware Link Prediction*
Tingsong Jiang, Tianyu Liu, Tao Ge, Lei Sha, Sujian Li, Baobao Chang and Zhifang Sui

15:25–15:50 *Coffee Break*

Friday, November 4, 2016 (continued)

15:50–17:25 Session P10: Plenary Session: Best Paper

15:50–15:55 *Introduction to Best Papers*
Program Chairs

15:55–16:20 *Improving Information Extraction by Acquiring External Evidence with Reinforcement Learning*
Karthik Narasimhan, Adam Yala and Regina Barzilay

16:20–16:45 *Global Neural CCG Parsing with Optimality Guarantees*
Kenton Lee, Mike Lewis and Luke Zettlemoyer

16:45–17:00 *Learning a Lexicon and Translation Model from Phoneme Lattices*
Oliver Adams, Graham Neubig, Trevor Cohn, Steven Bird, Quoc Truong Do and Satoshi Nakamura

17:00–17:25 *SQuAD: 100,000+ Questions for Machine Comprehension of Text*
Pranav Rajpurkar, Jian Zhang, Konstantin Lopyrev and Percy Liang

17:25–17:45 Session P11: Plenary Session: Closing Remarks

17:25–17:45 *Closing Remarks*
General Chair

List of Papers