EMNLP 2017

The Conference on Empirical Methods in Natural Language Processing

Proceedings of the Conference

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Preface by the General Chair

Thank you so much for joining us in Copenhagen! Welcome to a cosmopolitan city of fantastic restaurants, lovely seascapes, rich history, and lots and lots of cyclists!

We have an exciting program lined up for you, with three Invited talks, fifteen workshops, seven tutorials, nine TACL presentations, 322 reviewed papers presented as both oral talks and posters, and twenty-one demos. I am especially grateful to our Program Chairs, Rebecca Hwa and Sebastian Riedel, who did a fantastic job managing a backbreaking 1,500 paper submissions (1466 reviewed papers). This involved 51 Area chairs and 980 reviewers. We tried some new things this year (never conducive to a smooth process) including a more careful handling of the COIs that result from Area Chair submissions, and the addition of a meta-review step to encourage more thoughtful reviewing. We are soliciting feedback on the meta-review process, from both reviewers and authors. Despite the additional time involvement, many of the Area Chairs embraced this new approach, and would like to repeat it. However, there are clearly a few dissenters, since Rebecca and Sebastian ended up writing around 200 meta-reviews themselves at the last minute! We are also trying to raise the visibility and status of the poster sessions by integrating them as parallel sessions alongside oral talks, with poster session chairs. This is in response to the survey results from EMNLP 2015 that indicated a decided preference for smaller, more frequent poster sessions during the day rather than evening mega-sessions. Finally, Rebecca and Sebastian are bringing you three outstanding invited speakers, Dan Jurafsky, Sharon Goldwater, and Nando de Freitas. No program chairs ever worked harder to bring you a superb set of presentations in an attendee friendly setting.

I am also very grateful to Victoria Fossum and Karl Moritz Hermann, our Workshop Chairs, who put together a terrific slate of fifteen workshops, and paid meticulous attention to ensuring that each workshop could hold exactly the poster sessions, invited talks and special events that it required. Our tutorial chairs, Alexandra Birch and Nathan Schneider, also outdid themselves, providing especially tempting tutorial offerings. Matt Post deserves to be singled out, for being an Advisor to our conscientious and successful Handbook Chair, Joachim Bingel, as well as becoming a welcome last minute addition to our excellent team of Demo Chairs, Lucia Specia and Michael Paul. Thanks are due to our Website Chair, Anders Johannsen, who responded promptly and deftly to all of our requests, and to our Student Volunteer and Student Sponsorship Chairs, Zeljko Agic and Yonatan Bisk, who brought you the helpful and energetic volunteers who keep things running smoothly.

Last but not least, many thanks to your hosts, our Local Arrangements Chairs, Dirk Hovy and Anders Søgaard and their team. Their concern has been increasing the enjoyment of your experience, and to that end they proposed a stunning venue, put together an amazing reception and Social Event, chose your conference bags, issued all the invitation letters for visas, helped create all the signs, etc., etc., etc. Dan Hardt, our Sponsorship chair, working with Anders and Dirk, raised an unusual amount of local sponsorships, all to defray the cost of the Social Event.

As always, we are extremely indebted to our generous sponsors. Our platinum sponsors are Google, Amazon, Baidu, Apple, Facebook, Bloomberg and Siteimprove. Gold sponsors include IBM Research, Microsoft, eBay, SAP, Textkernel, Maluuba, Zalando, Recruit Institute of Technology and Deloitte. Silver sponsors are Nuance, Oracle, Sogou, Huawei, Duolingo, CVTE, Unsilo and Wizkids. Snap Inc., Grammarly and Yandex are our Bronze sponsors.

Finally, many, many thanks to our Area Chairs, our reviewers, and our authors, whose outstanding research is being showcased here for your delectation. *Nyd det mens det varer!*

Best Regards,
Martha Palmer
EMNLP 2017 General Chair

Preface by the Program Committee Co-Chairs

Welcome to the 2017 Conference on Empirical Methods in Natural Language Processing! This is an exciting year; we have received a new record-high in the number of submissions: 1,509 papers. After discounting early withdraws, duplicates, and other invalid submissions, we sent out 1,418 submissions (836 long papers, 582 short papers) to be reviewed by the program committee. Ultimately, 216 long papers (25.8% acceptance rate) and 107 short papers (18.4% acceptance rate) have been accepted for presentation, making a total of 323 papers and an overall acceptance rate of 22.8%.

This year's technical program consists of three invited talks and 113 oral presentations and 219 poster presentations for the 323 long and short accepted papers as well as nine papers accepted to the Transactions of the Association for Computational Linguistics. To accommodate all the presentations in a compressed timeframe, we opted to have plenary sessions for the invited talks and the winners of the Best Paper Awards, while allotting three parallel oral sessions and thematically related poster sessions for all other presentations. We chose to have concurrent poster and oral sessions for several reasons. First, this is the preferred model of the majority (51.6%) of participants who filled out the EMNLP 2015 post-conference survey. Second, this allows us to spread out the poster presentations across three days in smaller thematically related clusters. Finally, this maximises the number of acceptances for the high quality submissions we received; by having more poster sessions, we are able to maintain the acceptance rates at the previous year's level despite an increase in submissions by 40%.

It would not have been possible to properly handle such a large number of submissions without the generous voluntary help from all the members of the program committee, which consists of 980 reviewers overseen by 51 area chairs. We continued last year's experiment of defining twelve relatively broad topic areas and assigning multiple area chairs to facilitate consistent ranking of larger sets of papers. Most technical program decisions, from the selection of papers to the modes of presentation to the choice of outstanding papers, are primarily made in a bottom-up fashion: reviewers assessed and scored papers, made recommendations for oral vs poster decisions, and marked papers suitable for best paper awards; area chairs ensured the quality of assessments, encouraged discussions and assembled opinions into their own recommendations; finally, we construct the technical program, considering the recommendations from the area chairs while taking into account venue constraints and balance across areas. A new experimental feature of this year's EMNLP reviewing process is the "meta review," in which the area chairs briefly summarize the major discussions between the reviewers to give authors a more transparent view of the process.

Per EMNLP tradition, awards are given to outstanding papers in three categories: Best Long Paper, Best Short Paper, and Best Resource Paper. The selection process is bottom-up: based on the reviewers and area chairs' recommendations, we nominated four papers for each category; we invited expert members to form a Best Papers committee for each category; each committee reviews the candidates and select the winners. The awarded papers will be presented at a special plenary session on the last day of the conference.

We are extremely grateful that three amazing speakers have agreed to give invited talks at EMNLP. Nando de Freitas (Google Deepmind) will discuss simulated physical environments, and whether language would benefit from the development of such environments, and could contribute toward improving such environments and agents within them. Sharon Goldwater (University of Edinburgh) will describe work on developing unsupervised speech technology for those of the world's 7,000 or so languages not spoken in large rich countries. Dan Jurafsky (Stanford University) will talk about processing the language of policing to automatically measure linguistic aspects of the interaction from discourse factors like conversational structure to social factors like respect.

The conference would not have been possible without the support of various people inside and outside of the committee. In particular, we would like to thank:

- Martha Palmer, whose encouragement and advice as the general chair has been invaluable every step of the way;

- Chris Callison-Burch, who has given us excellent advice and support in his capacity as the SIGDAT Secretary;
- Priscilla Rasmussen, who always has the right answers;
- Xavier Carreras and Kevin Duh, who generously shared their experiences as the chairs of EMNLP 2016;
- Anders Johannsen, who is lightning fast with website updates;
- Our 51 area chairs: David Bamman, Mohit Bansal, Roberto Basili, Chris Biemann, Jordan Boyd-Graber, Marine Carpuat, Joyce Chai, David Chiang, Jinho Choi, Jennifer Chu-Carroll, Trevor Cohn, Cristian Danescu-Niculescu-Mizil, Dipanjan Das, Hal Daume, Mona Diab, Mark Dredze, Jacob Eisenstein, Sanja Fidler, Alona Fyshe, Dan Gildea, Ed Grefenstette, Hannaneh Hajishirzi, Julia Hockenmaier, Kentaro Inui, Jing Jiang, Philipp Koehn, Mamoru Komachi, Anna Korhonen, Tom Kwiatkowski, Gina Levow, Bing Liu, Nitin Madnani, Mausam, Rada Mihalcea, Marie-Francine Moens, Saif M. Mohammad, Mari Ostendorf, Sameer Pradhan, Alexander Rush, Anoop Sarkar, William Schuler, Hinrich Schütze, Sameer Singh, Thamar Solorio, Vivek Srikumar, Amanda Stent, Tomek Strzalkowski, Mihai Surdeanu, Andreas Vlachos, Scott Wen-tau Yih, Zhang Yue;
- The best papers award committee members: Chris Brew, Mike Collins, Kevin Duh, Adam Lopez, Ani Nenkova, Bonnie Webber, Luke Zettlemoyer;
- Preethi Raghavan and Siddharth Patwardhan, the publications co-chairs and Joachim Bingel, the conference handbook chair;
- Dirk Hovy and Anders Søgaard, the local arrangements co-chairs;
- Rich Gerber and Paolo Gai at SoftConf.

Finally, we'd like to thank SIGDAT for the opportunity to serve as Program Co-Chairs of EMNLP 2017. It is an honor and a rewarding learning experience. We hope you will be as inspired by the technical program as we are.

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Navarro; Roberto Navigli; Adeline Nazarenko; Mark-Jan Nederhof; Arvind Neelakantan; Sapna Negi; Aida Nematzadeh; Graham Neubig; Hwee Tou Ng; Jun-Ping Ng; Vincent Ng; Axel-Cyrille Ngonga Ngomo; Dong Nguyen; Thien Huu Nguyen; Toan Nguyen; Jian-Yun NIE; Nobal Bikram Niraula; Joakim Nivre; Hiroshi Noji; Joel Nothman; Pierre Nugues; Diarmuid Ó Séaghdha; Brendan O'Connor; Stephan Oepen; Kemal Oflazer; Alice Oh; Jong-Hoon Oh; Naoaki Okazaki; Manabu Okumura; Constantin Orasan; Vicente Ordonez; Myle Ott; Muntsa Padró; Alexis Palmer; Martha Palmer; Shimei Pan; Sinno Jialin Pan; Alexander Panchenko; Bo Pang; Denis Paperno; Aasish Pappu; Natalie Parde; Ankur Parikh; Niki Parmar; Patrick Paroubek; Rebecca J. Passonneau; Panupong Pasupat; John K Pate; Siddharth Patwardhan; Michael J. Paul; Adam Pauls; Umashanthi Pavalanathan; Ellie Pavlick; Adam Pease; Viktor Pekar; Anselmo Peñas; Xiaochang Peng; Sergio Penkale; Gerald Penn; Julien PEREZ; Verónica Pérez-Rosas; Johann Petrak; Slav Petrov; Nghia The Pham; Peter Phandi; Olivier Pietquin; Daniele Pighin; Mohammad Taher Pilehvar; Joelle Pineau; Yuval Pinter; Emily Pitler; Barbara Plank; Julien Plu; Massimo Poesio; Tamara Polajnar; Heather Pon-Barry; Simone Paolo Ponzetto; Ana-Maria Popescu; Andrei Popescu-Belis; Maja Popović; Fred Popowich; Soujanya Poria; Matt Post; Christopher Potts; Vinodkumar Prabhakaran; Daniel Preoţiuc-Pietro; Prokopis Prokopidis; Emily Prud'hommeaux; Jay Pujara; Matthew Purver; Ashequl Qadir; Longhua Qian; Xian Qian; Long Qiu; Minghui Qiu; Ella Rabinovich; Will Radford; Alessandro Raganato; Preethi Raghavan; Altaf Rahman; Nazneen Fatema Rajani; Rafal Rak; Bhuvana Ramabhadran; Carlos Ramisch; Delip Rao; Ari Rappoport; Mohammad Sadegh Rasooli; Sravana Reddy; Ines Rehbein; Roi Reichart; Nils Reimers; David Reitter; Steffen Remus; Xiang Ren; Adithya Renduchintala; Corentin Ribeyre; Giuseppe Riccardi; Matthew Richardson; Martin Riedl; Verena Rieser; Stefan Riezler; German Rigau; Ellen Riloff; Laura Rimell; Fabio Rinaldi; Eric Ringger; Brian Riordan; Alan Ritter; Brian Roark; Kirk Roberts; Molly Roberts; Tim Rocktäschel; Anna Rohrbach; Marcus Rohrbach; Lina M. Rojas Barahona; Stephen Roller; Salvatore Romeo; Paolo Rosso; Mihai Rotaru; Benjamin Roth; Michael Roth; Alla Rozovskaya; Vasile Rus; Attapol Rutherford; Derek Ruths; Fatiha Sadat; Mehrnoosh Sadrzadeh; Markus Saers; Kenji Sagae; Horacio Saggion; Rishiraj Saha Roy; Magnus Sahlgren; Keisuke Sakaguchi; Mohammad Salameh; Shimi Salant; Yunita Sari; Ruhi Sarikaya; Ryohei Sasano; Hassan Sawaf; Asad Sayeed; David Schlangen; Jonathan Schler; Natalie Schluter; Helmut Schmid; Sebastian Schuster; H. Andrew Schwartz; Lane Schwartz; Roy Schwartz; Stephanie Schwartz; Holger Schwenk; Djamé Seddah; Satoshi Sekine; Ethan Selfridge; Jean Senellart; Rico Sennrich; Minjoon Seo; BURR SETTLES; Izhak Shafran; Kashif Shah; Samira Shaikh; Amr Sharaf; Rebecca Sharp; Wade Shen; xiaodong shi; Chaitanya Shivade; Prasha Shrestha; Avirup Sil; Fabrizio Silvestri; Yanchuan Sim; Dan Simonson; Kiril Simov; Steve Skiena; Kevin Small; Sharon Small; Noah A. Smith; Jan Šnajder; Parinaz Sobhani; Richard Socher; Anders Søgaard; Swapna Somasundaran; Hyun-Je Song; Linfeng Song; Sandeep Soni; Alessandro Sordoni; Aitor Soroa; Victor Soto; Rohini Srihari; Somayajulu Sripada; Christian Stab; Sanja Štajner; Miloš Stanojević; Gabriel Stanovsky; Manfred Stede; Mark Steedman; Pontus Stenetorp; Lucas Sterckx; Mark Stevenson; Brandon Stewart; Ian Stewart; Svetlana Stoyanchev; Veselin Stoyanov; Carlo Strapparava; Karl Stratos; Keh-Yih Su; Qi Su; Yu Su; Fabian Suchanek; Alane Suhr; Fei Sun; Huan Sun; Le Sun; Ming Sun; Jun Suzuki; Swabha Swayamdipta; Idan Szpektor; Oscar Täckström; Shabnam Tafreshi; Hiroya Takamura; Partha Talukdar; Chenhao Tan; Hristo Tanev; Duyu Tang; Jian Tang; Xavier Tannier; Makarand Tapaswi; Christoph Teichmann; TestSeb TestRiedel; Joel Tetreault; Simone Teufel; Kapil Thadani; Sam Thomson; Jörg Tiedemann; Christoph Tillmann; Ivan Titov; Takenobu Tokunaga; Gaurav Singh Tomar; Nadi Tomeh; Marc Tomlinson; Sara Tonelli; Kentaro Torisawa; Lamia Tounsi; Isabel Trancoso; Adam Trischler; Yuta Tsuboi; Oren Tsur; Yoshimasa Tsuruoka; Yulia Tsvetkov; Marco Turchi; Ferhan Ture; Kateryna Tymoshenko; Raghavendra Udupa; Stefan Ultes; Lyle Ungar; Shyam Upadhyay; L. Alfonso Urena Lopez; Dmitry Ustalov; Jakob Uszkoreit; Masao Utiyama; Naushad UzZaman; Sowmya Vajjala;

Marco A. Valenzuela-Escárcega; Tim Van de Cruys; Kees van Deemter; Ielka van der Sluis; Benjamin Van Durme; Gertjan van Noord; Marten van Schijndel; David Vandyke; Tony Veale; Eva Maria Vecchi; sriram venkatapathy; Giulia Venturi; Ashish Venugopal; Patrick Verga; Marc Verhagen; Yannick Versley; Guido Vetere; Paul Vicol; David Vilar; Aline Villavicencio; Rob Voigt; Svitlana Volkova; Ivan Vulić; Yogarshi Vyas; V.G.Vinod Vydiswaran; Henning Wachsmuth; Joachim Wagner; Byron Wallace; Matthew Walter; Stephen Wan; Xiaojun Wan; Chuan Wang; Dingquan Wang; Hai Wang; Houfeng WANG; Lu Wang; Qin Iris Wang; Shuai Wang; Shuohang Wang; William Yang Wang; Zhiguo Wang; Zhongqing Wang; Leo Wanner; Taro Watanabe; Nick Webb; Bonnie Webber; Ingmar Weber; Kellie Webster; Julie Weeds; Furu Wei; Gerhard Weikum; David Weir; Ralph Weischedel; David Weiss; Dirk Weissenborn; Robert West; Michael White; Michael Wick; Michael Wiegand; John Wieting; Jason D Williams; Steven Wilson; Guillaume Wisniewski; Michael Wojatzki; Kam-Fai Wong; Hua Wu; Stephen Wu; Joern Wuebker; Rui Xia; Deyi Xiong; Wei Xu; Wenduan Xu; Yadollah Yaghoobzadeh; Adam Yala; Rui Yan; Bishan Yang; Diyi Yang; Yi Yang; Roman Yangarber; Berrin Yanikoglu; Helen Yannakoudakis; tae yano; Mark Yatskar; Seid Muhie Yimam; Wenpeng Yin; Dani Yogatama; Naoki Yoshinaga; Jianfei Yu; Mo Yu; Ning Yu; Zhuoran Yu; François Yvon; Taras Zagibalov; Marcos Zampieri; Fabio Massimo Zanzotto; Sina Zarrieß; Victoria Zayats; Richard Zens; Torsten Zesch; Luke Zettlemoyer; Congle Zhang; Hao Zhang; Justine Zhang; Lei Zhang; Meishan Zhang; Min Zhang; Qi Zhang; Yuan Zhang; Hai Zhao; Jun Zhao; Shiqi Zhao; Wayne Xin Zhao; Bowen Zhou; Muhua Zhu; Xiaodan Zhu; Yukun Zhu; Michael Zock; Chengqing Zong; Ingrid Zukerman; Pierre Zweigenbaum

Invited Speaker: Dan Jurafsky, Stanford University
"Does This Vehicle Belong to You"? Processing the Language of Policing for Improving Police-Community Relations"

Abstract: Police body-cameras have the potential to play an important role in understanding and improving police-community relations. In this talk I describe a series of studies conducted by our large interdisciplinary team at Stanford that use speech and natural language processing on body-camera recordings to model the interactions between police officers and community members in traffic stops. We use text and speech features to automatically measure linguistic aspects of the interaction, from discourse factors like conversational structure to social factors like respect. I describe the differences we find in the language directed toward black versus white community members, and offer suggestions for how these findings can be used to help improve the fraught relations between police officers and the communities they serve.

Bio: Dan Jurafsky is Professor and Chair of Linguistics and Professor of Computer Science, at Stanford University. His research has focused on the extraction of meaning, intention, and affect from text and speech, on the processing of Chinese, and on applying natural language processing to the cognitive and social sciences. Dan's deep interest in NLP education led him to co-write with Jim Martin the widely-used textbook "Speech and Language Processing" (whose 3rd edition is in (slow) progress) and co-teach with Chris Manning the first massive open online class on natural language processing. Dan was the recipient of the 2002 MacArthur Fellowship and is a 2015 James Beard Award Nominee for his book, "The Language of Food: A Linguist Reads the Menu".

Invited Speaker: Sharon Goldwater, University of Edinburgh
Towards more universal language technology: unsupervised learning from speech

Abstract: Speech and language processing has advanced enormously in the last decade, with successful applications in machine translation, voice-activated search, and even language-enabled personal assistants. Yet these systems typically still rely on learning from very large quantities of human-annotated data. These resource-intensive methods mean that effective technology is available for only a tiny fraction of the world's 7000 or so languages, mainly those spoken in large rich countries.

This talk describes our recent work on developing unsupervised speech technology, where transcripts and pronunciation dictionaries are not used. The work is inspired by considering both how young infants may begin to acquire the sounds and words of their language, and how we might develop systems to help linguists analyze and document endangered languages. I will first present work on learning from speech audio alone, where the system must learn to segment the speech stream into word tokens and cluster repeated instances of the same word together to learn a lexicon of vocabulary items. The approach combines Bayesian and neural network methods to address learning at the word and sub-word levels.

Bio: Sharon Goldwater is a Reader at the University of Edinburgh's School of Informatics, where she is a member of the Institute for Language, Cognition and Computation. She received her PhD in 2007 from Brown University and spent two years as a postdoctoral researcher at Stanford University before moving to Edinburgh. Her research interests include unsupervised learning for speech and language

processing, computer modelling of language acquisition in children, and computational studies of language use. Dr. Goldwater co-chaired the 2014 Conference of the European Chapter of the Association for Computational Linguistics and is Chair-Elect of EACL. She has served on the editorial boards of the Transactions of the Association for Computational Linguistics, the Computational Linguistics journal, and OPEN MIND: Advances in Cognitive Science (a new open-access journal). In 2016, she received the Roger Needham Award from the British Computer Society, awarded for "distinguished research contribution in computer science by a UK-based researcher who has completed up to 10 years of post-doctoral research."

Invited Speaker: Nando de Freitas, Google Deepmind
Physical simulation, learning and language

Abstract: Simulated physical environments, with common physical laws, objects and agents with bodies, provide us with consistency to facilitate transfer and continual learning. In such environments, research topics such as learning to experiment, learning to learn and emergent communication can be easily explored. Given the relevance of these topics to language, it is natural to ask ourselves whether research in language would benefit from the development of such environments, and whether language can contribute toward improving such environments and agents within them. This talk will provide an overview of some of these environments, discuss learning to learn and its potential relevance to language, and present some deep reinforcement learning agents that capitalize on formal language instructions to develop disentangled interpretable representations that allow them to generalize to a wide variety of zero-shot semantic tasks. The talk will pose more questions than answers in the hope of stimulating discussion.

Bio: I was born in Zimbabwe, with malaria. I was a refugee from the war in Mocambique and thanks to my parents getting in debt to buy me a passport from a corrupt official, I grew up in Portugal without water and electricity, before the EU got there, and without my parents who were busy making money to pay their debt. At 8, I joined my parents in Venezuela and began school in the hood; see City of God. I moved to South Africa after high-school and sold beer illegally in black-townships for a living until 1991. Apartheid was the worst thing I ever experienced. I did my BSc in electrical engineering and MSc in control at the University of the Witwatersrand, where I strived to be the best student to prove to racists that anyone can do it. I did my PhD on Bayesian methods for neural networks at Trinity College, Cambridge University. I did a postdoc in Artificial Intelligence at UC Berkeley. I became a Full Professor at the University of British Columbia, before joining the University of Oxford in 2013. I quit Oxford in 2017 to join DeepMind full-time, where I lead the Machine Learning team. I aim to solve intelligence so that future generations have a better life. I have been a Senior Fellow of the Canadian Institute for Advanced Research for a long time. Some of my recent awards, mostly thanks to my collaborators, include: Best Paper Award at the International Conference on Machine Learning (2016), Best Paper Award at the International Conference on Learning Representations (2016), Winner of round 5 of the Yelp Dataset Challenge (2015), Distinguished Paper Award at the International Joint Conference on Artificial Intelligence (2013), Charles A. McDowell Award for Excellence in Research (2012), and Mathematics of Information Technology and Complex Systems Young Researcher Award (2010).

Table of Contents

Conference Program

Friday, September 8, 2017

18:30–20:00 Welcome Reception

Saturday, September 9, 2017

7:30–17:30 Registration Day 1

8:00–8:30 ***Morning Coffee***

8:30–9:00 Session 1: Plenary Session. Opening Remarks

8:30–9:00 *Opening Remarks*
General Chair, PC Co-Chairs

9:00–10:00 Session 2: Plenary Session. Invited Talk by Nando de Freitas

9:00–10:00 *Physical simulation, learning and language*
Nando de Freitas

10:00–10:30 ***Coffee Break***

Saturday, September 9, 2017 (continued)

10:30–12:10 Session 3A: Syntax 1

10:30–10:55 *Monolingual Phrase Alignment on Parse Forests*
Yuki Arase and Jun'ichi Tsujii

10:55–11:20 *Fast(er) Exact Decoding and Global Training for Transition-Based Dependency Parsing via a Minimal Feature Set*
Tianze Shi, Liang Huang and Lillian Lee

11:20–11:45 *Parsing with Traces: An O(n^4) Algorithm and a Structural Representation*
Jonathan K. Kummerfeld and Dan Klein

11:45–12:10 *Quasi-Second-Order Parsing for 1-Endpoint-Crossing, Pagenumber-2 Graphs*
Junjie Cao, Sheng Huang, Weiwei Sun and Xiaojun Wan

10:30–12:10 Session 3B: Information Extraction 1

10:30–10:55 *Position-aware Attention and Supervised Data Improve Slot Filling*
Yuhao Zhang, Victor Zhong, Danqi Chen, Gabor Angeli and Christopher D. Manning

10:55–11:20 *Heterogeneous Supervision for Relation Extraction: A Representation Learning Approach*
Liyuan Liu, Xiang Ren, Qi Zhu, Shi Zhi, Huan Gui, Heng Ji and Jiawei Han

11:20–11:45 *Integrating Order Information and Event Relation for Script Event Prediction*
Zhongqing Wang, Yue Zhang and Ching-Yun Chang

11:45–12:10 *Entity Linking for Queries by Searching Wikipedia Sentences*
Chuanqi Tan, Furu Wei, Pengjie Ren, Weifeng Lv and Ming Zhou

Saturday, September 9, 2017 (continued)

10:30–12:10 Session 3C: Multilingual NLP

10:30–10:55 *Train-O-Matic: Large-Scale Supervised Word Sense Disambiguation in Multiple Languages without Manual Training Data*
Tommaso Pasini and Roberto Navigli

10:55–11:20 *Universal Semantic Parsing*
Siva Reddy, Oscar Täckström, Slav Petrov, Mark Steedman and Mirella Lapata

11:20–11:45 *Mimicking Word Embeddings using Subword RNNs*
Yuval Pinter, Robert Guthrie and Jacob Eisenstein

11:45–12:10 *Past, Present, Future: A Computational Investigation of the Typology of Tense in 1000 Languages*
Ehsaneddin Asgari and Hinrich Schütze

10:30–12:10 Demo

12:10–13:40 *Lunch*

13:40–15:20 Session 4A: Machine Translation 1

13:40–14:05 *Neural Machine Translation with Source-Side Latent Graph Parsing*
Kazuma Hashimoto and Yoshimasa Tsuruoka

14:05–14:30 *Neural Machine Translation with Word Predictions*
Rongxiang Weng, Shujian Huang, Zaixiang Zheng, XIN-YU DAI and Jiajun CHEN

14:30–14:55 *Towards Decoding as Continuous Optimisation in Neural Machine Translation*
Cong Duy Vu Hoang, Gholamreza Haffari and Trevor Cohn

14:55–15:20 *Google's Multilingual Neural Machine Translation System: Enabling Zero-Shot Translation*
Melvin Johnson, Mike Schuster, Quoc V. Le, Maxim Krikun, Yonghui Wu, Zhifeng Chen, Nikhil Thorat, Fernanda Viégas, Martin Wattenberg, Greg Corrado, Macduff Hughes and Jeffrey Dean

Saturday, September 9, 2017 (continued)

13:40–15:20 Session 4B: Language Grounding

13:40–14:05 *Where is Misty? Interpreting Spatial Descriptors by Modeling Regions in Space*
Nikita Kitaev and Dan Klein

14:05–14:30 *Continuous Representation of Location for Geolocation and Lexical Dialectology using Mixture Density Networks*
Afshin Rahimi, Timothy Baldwin and Trevor Cohn

14:30–14:55 *Colors in Context: A Pragmatic Neural Model for Grounded Language Understanding*
Will Monroe, Robert X. D. Hawkins, Noah D. Goodman and Christopher Potts

14:55–15:20 *Obj2Text: Generating Visually Descriptive Language from Object Layouts*
Xuwang Yin and Vicente Ordonez

13:40–15:20 Session 4C: Discourse and Summarization

13:40–14:05 *End-to-end Neural Coreference Resolution*
Kenton Lee, Luheng He, Mike Lewis and Luke Zettlemoyer

14:05–14:30 *Neural Net Models of Open-domain Discourse Coherence*
Jiwei Li and Dan Jurafsky

14:30–14:55 *Affinity-Preserving Random Walk for Multi-Document Summarization*
Kexiang Wang, Tianyu Liu, Zhifang Sui and Baobao Chang

14:55–15:20 *A Mention-Ranking Model for Abstract Anaphora Resolution*
Ana Marasovic, Leo Born, Juri Opitz and Anette Frank

13:40–15:20 Session 4D: Poster Session. Embeddings

Hierarchical Embeddings for Hypernymy Detection and Directionality
Kim Anh Nguyen, Maximilian Köper, Sabine Schulte im Walde and Ngoc Thang Vu

Ngram2vec: Learning Improved Word Representations from Ngram Co-occurrence Statistics
Zhe Zhao, Tao Liu, Shen Li, Bofang Li and Xiaoyong Du

Dict2vec : Learning Word Embeddings using Lexical Dictionaries
Julien Tissier, Christopher Gravier and Amaury Habrard

Learning Chinese Word Representations From Glyphs Of Characters
Tzu-ray Su and Hung-yi Lee

Learning Paraphrastic Sentence Embeddings from Back-Translated Bitext
John Wieting, Jonathan Mallinson and Kevin Gimpel

Joint Embeddings of Chinese Words, Characters, and Fine-grained Subcharacter Components
Jinxing Yu, Xun Jian, Hao Xin and Yangqiu Song

Exploiting Morphological Regularities in Distributional Word Representations
Arihant Gupta, Syed Sarfaraz Akhtar, Avijit Vajpayee, Arjit Srivastava, Madan Gopal Jhanwar and Manish Shrivastava

Exploiting Word Internal Structures for Generic Chinese Sentence Representation
Shaonan Wang, Jiajun Zhang and Chengqing Zong

High-risk learning: acquiring new word vectors from tiny data
Aurélie Herbelot and Marco Baroni

Word Embeddings based on Fixed-Size Ordinally Forgetting Encoding
Joseph Sanu, Mingbin Xu, Hui Jiang and Quan Liu

VecShare: A Framework for Sharing Word Representation Vectors
Jared Fernandez, Zhaocheng Yu and Doug Downey

Word Re-Embedding via Manifold Dimensionality Retention
Souleiman Hasan and Edward Curry

MUSE: Modularizing Unsupervised Sense Embeddings
Guang-He Lee and Yun-Nung Chen

13:40–15:20 Session 4E: Poster Session. Machine Learning 1

Reporting Score Distributions Makes a Difference: Performance Study of LSTM-networks for Sequence Tagging
Nils Reimers and Iryna Gurevych

Learning What's Easy: Fully Differentiable Neural Easy-First Taggers
André F. T. Martins and Julia Kreutzer

Incremental Skip-gram Model with Negative Sampling
Nobuhiro Kaji and Hayato Kobayashi

Learning to select data for transfer learning with Bayesian Optimization
Sebastian Ruder and Barbara Plank

Unsupervised Pretraining for Sequence to Sequence Learning
Prajit Ramachandran, Peter Liu and Quoc Le

Efficient Attention using a Fixed-Size Memory Representation
Denny Britz, Melody Guan and Minh-Thang Luong

Rotated Word Vector Representations and their Interpretability
Sungjoon Park, JinYeong Bak and Alice Oh

A causal framework for explaining the predictions of black-box sequence-to-sequence models
David Alvarez-Melis and Tommi Jaakkola

Piecewise Latent Variables for Neural Variational Text Processing
Iulian Vlad Serban, Alexander G. Ororbia, Joelle Pineau and Aaron Courville

Learning the Structure of Variable-Order CRFs: a finite-state perspective
Thomas Lavergne and François Yvon

Sparse Communication for Distributed Gradient Descent
Alham Fikri Aji and Kenneth Heafield

A Joint Many-Task Model: Growing a Neural Network for Multiple NLP Tasks
Kazuma Hashimoto, caiming xiong, Yoshimasa Tsuruoka and Richard Socher

Why ADAGRAD Fails for Online Topic Modeling
You Lu, Jeffrey Lund and Jordan Boyd-Graber

13:40–15:20 Session 4F: Poster Session. Sentiment Analysis 1

Recurrent Attention Network on Memory for Aspect Sentiment Analysis
Peng Chen, Zhongqian Sun, Lidong Bing and Wei Yang

A Cognition Based Attention Model for Sentiment Analysis
Yunfei Long, Lu Qin, Rong Xiang, Minglei Li and Chu-Ren Huang

Author-aware Aspect Topic Sentiment Model to Retrieve Supporting Opinions from Reviews
Lahari Poddar, Wynne Hsu and Mong Li Lee

Magnets for Sarcasm: Making Sarcasm Detection Timely, Contextual and Very Personal
Aniruddha Ghosh and Tony Veale

Identifying Humor in Reviews using Background Text Sources
Alex Morales and Chengxiang Zhai

Sentiment Lexicon Construction with Representation Learning Based on Hierarchical Sentiment Supervision
Leyi Wang and Rui Xia

Towards a Universal Sentiment Classifier in Multiple languages
Kui Xu and Xiaojun Wan

Capturing User and Product Information for Document Level Sentiment Analysis with Deep Memory Network
Zi-Yi Dou

Identifying and Tracking Sentiments and Topics from Social Media Texts during Natural Disasters
Min Yang, Jincheng Mei, Heng Ji, zhao wei, Zhou Zhao and Xiaojun Chen

Refining Word Embeddings for Sentiment Analysis
Liang-Chih Yu, Jin Wang, K. Robert Lai and Xuejie Zhang

A Multilayer Perceptron based Ensemble Technique for Fine-grained Financial Sentiment Analysis
Md Shad Akhtar, Abhishek Kumar, Deepanway Ghosal, Asif Ekbal and Pushpak Bhattacharyya

Sentiment Intensity Ranking among Adjectives Using Sentiment Bearing Word Embeddings
Raksha Sharma, Arpan Somani, Lakshya Kumar and Pushpak Bhattacharyya

Sentiment Lexicon Expansion Based on Neural PU Learning, Double Dictionary Lookup, and Polarity Association
Yasheng Wang, Yang Zhang and Bing Liu

15:50 *Break*
15:20

15:50–17:30 Session 5A: Machine Learning 2

15:50–16:15 *DeepPath: A Reinforcement Learning Method for Knowledge Graph Reasoning*
Wenhan Xiong, Thien Hoang and William Yang Wang

16:15–16:40 *Task-Oriented Query Reformulation with Reinforcement Learning*
Rodrigo Nogueira and Kyunghyun Cho

16:40–17:05 *Sentence Simplification with Deep Reinforcement Learning*
Xingxing Zhang and Mirella Lapata

17:05–17:30 *Learning how to Active Learn: A Deep Reinforcement Learning Approach*
Meng Fang, Yuan Li and Trevor Cohn

Saturday, September 9, 2017 (continued)

15:50–17:30 Session 5B: Generation

15:50–16:15 *Split and Rephrase*
Shashi Narayan, Claire Gardent, Shay B. Cohen and Anastasia Shimorina

16:15–16:40 *Neural Response Generation via GAN with an Approximate Embedding Layer*
Zhen Xu, Bingquan Liu, Baoxun Wang, Chengjie SUN, Xiaolong Wang, Zhuoran Wang and Chao Qi

16:40–17:05 *A Hybrid Convolutional Variational Autoencoder for Text Generation*
Stanislau Semeniuta, Aliaksei Severyn and Erhardt Barth

17:05–17:30 *Filling the Blanks (hint: plural noun) for Mad Libs Humor*
Nabil Hossain, John Krumm, Lucy Vanderwende, Eric Horvitz and Henry Kautz

15:50–17:30 Session 5C: Semantics 1

15:50–16:15 *Measuring Thematic Fit with Distributional Feature Overlap*
Enrico Santus, Emmanuele Chersoni, Alessandro Lenci and Philippe Blache

16:15–16:40 *SCDV : Sparse Composite Document Vectors using soft clustering over distributional representations*
Dheeraj Mekala, Vivek Gupta, Bhargavi Paranjape and Harish Karnick

16:40–17:05 *Supervised Learning of Universal Sentence Representations from Natural Language Inference Data*
Alexis Conneau, Douwe Kiela, Holger Schwenk, Loïc Barrault and Antoine Bordes

17:05–17:30 *Determining Semantic Textual Similarity using Natural Deduction Proofs*
Hitomi Yanaka, Koji Mineshima, Pascual Martínez-Gómez and Daisuke Bekki

Saturday, September 9, 2017 (continued)

15:50–17:30 Session 5D: Poster Session. Syntax 2

Multi-Grained Chinese Word Segmentation
Chen Gong, Zhenghua Li, Min Zhang and Xinzhou Jiang

Don't Throw Those Morphological Analyzers Away Just Yet: Neural Morphological Disambiguation for Arabic
Nasser Zalmout and Nizar Habash

Paradigm Completion for Derivational Morphology
Ryan Cotterell, Ekaterina Vylomova, Huda Khayrallah, Christo Kirov and David Yarowsky

A Sub-Character Architecture for Korean Language Processing
Karl Stratos

Do LSTMs really work so well for PoS tagging? – A replication study
Tobias Horsmann and Torsten Zesch

The Labeled Segmentation of Printed Books
Lara McConnaughey, Jennifer Dai and David Bamman

Cross-lingual Character-Level Neural Morphological Tagging
Ryan Cotterell and Georg Heigold

Word-Context Character Embeddings for Chinese Word Segmentation
Hao Zhou, Zhenting Yu, Yue Zhang, Shujian Huang, XIN-YU DAI and Jiajun Chen

Segmentation-Free Word Embedding for Unsegmented Languages
Takamasa Oshikiri

Saturday, September 9, 2017 (continued)

15:50–17:30 Session 5E: Poster Session. Question Answering and Machine Comprehension

From Textbooks to Knowledge: A Case Study in Harvesting Axiomatic Knowledge from Textbooks to Solve Geometry Problems
Mrinmaya Sachan, Kumar Dubey and Eric Xing

RACE: Large-scale ReAding Comprehension Dataset From Examinations
Guokun Lai, Qizhe Xie, Hanxiao Liu, Yiming Yang and Eduard Hovy

Beyond Sentential Semantic Parsing: Tackling the Math SAT with a Cascade of Tree Transducers
Mark Hopkins, Cristian Petrescu-Prahova, Roie Levin, Ronan Le Bras, Alvaro Herrasti and Vidur Joshi

Learning Fine-Grained Expressions to Solve Math Word Problems
Danqing Huang, Shuming Shi, Chin-Yew Lin and Jian Yin

Structural Embedding of Syntactic Trees for Machine Comprehension
Rui Liu, Junjie Hu, Wei Wei, Zi Yang and Eric Nyberg

World Knowledge for Reading Comprehension: Rare Entity Prediction with Hierarchical LSTMs Using External Descriptions
Teng Long, Emmanuel Bengio, Ryan Lowe, Jackie Chi Kit Cheung and Doina Precup

Two-Stage Synthesis Networks for Transfer Learning in Machine Comprehension
David Golub, Po-Sen Huang, Xiaodong He and Li Deng

Deep Neural Solver for Math Word Problems
Yan Wang, Xiaojiang Liu and Shuming Shi

Latent Space Embedding for Retrieval in Question-Answer Archives
Deepak P, Dinesh Garg and Shirish Shevade

Question Generation for Question Answering
Nan Duan, Duyu Tang, Peng Chen and Ming Zhou

Learning to Paraphrase for Question Answering
Li Dong, Jonathan Mallinson, Siva Reddy and Mirella Lapata

Temporal Information Extraction for Question Answering Using Syntactic Dependencies in an LSTM-based Architecture
Yuanliang Meng, Anna Rumshisky and Alexey Romanov

Ranking Kernels for Structures and Embeddings: A Hybrid Preference and Classification Model
Kateryna Tymoshenko, Daniele Bonadiman and Alessandro Moschitti

Recovering Question Answering Errors via Query Revision
Semih Yavuz, Izzeddin Gur, Yu Su and Xifeng Yan

15:50–17:30 Session 5F: Poster Session. Multimodal NLP 1

An empirical study on the effectiveness of images in Multimodal Neural Machine Translation
Jean-Benoit Delbrouck and Stéphane Dupont

Sound-Word2Vec: Learning Word Representations Grounded in Sounds
Ashwin Vijayakumar, Ramakrishna Vedantam and Devi Parikh

The Promise of Premise: Harnessing Question Premises in Visual Question Answering
Aroma Mahendru, Viraj Prabhu, Akrit Mohapatra, Dhruv Batra and Stefan Lee

Guided Open Vocabulary Image Captioning with Constrained Beam Search
Peter Anderson, Basura Fernando, Mark Johnson and Stephen Gould

Zero-Shot Activity Recognition with Verb Attribute Induction
Rowan Zellers and Yejin Choi

Deriving continous grounded meaning representations from referentially structured multimodal contexts
Sina Zarrieß and David Schlangen

Hierarchically-Attentive RNN for Album Summarization and Storytelling
Licheng Yu, Mohit Bansal and Tamara Berg

Video Highlight Prediction Using Audience Chat Reactions
Cheng-Yang Fu, Joon Lee, Mohit Bansal and Alexander Berg

Saturday, September 9, 2017 (continued)

Reinforced Video Captioning with Entailment Rewards
Ramakanth Pasunuru and Mohit Bansal

Evaluating Hierarchies of Verb Argument Structure with Hierarchical Clustering
Jesse Mu, Joshua K. Hartshorne and Timothy O'Donnell

Incorporating Global Visual Features into Attention-based Neural Machine Translation.
Iacer Calixto and Qun Liu

Mapping Instructions and Visual Observations to Actions with Reinforcement Learning
Dipendra Misra, John Langford and Yoav Artzi

An analysis of eye-movements during reading for the detection of mild cognitive impairment
Kathleen C. Fraser, Kristina Lundholm Fors, Dimitrios Kokkinakis and Arto Nordlund

Evaluating Low-Level Speech Features Against Human Perceptual Data
Naomi H Feldman, Caitlin Richter, Harini Salgado and Aren Jansen

Sunday, September 10, 2017

7:30–17:30 **Registration Day 2**

8:00–9:00 ***Morning Coffee***

Sunday, September 10, 2017 (continued)

9:00–10:00 **Session 6: Plenary Session. Invited Talk by Sharon Goldwater**

9:00–10:00 *Towards more universal language technology: unsupervised learning from speech*
Sharon Goldwater

10:00–10:30 ***Coffee Break***

10:30–12:10 **Session 7A: Reading and Retrieving**

10:30–10:55 *A Structured Learning Approach to Temporal Relation Extraction*
Qiang Ning, Zhili Feng and Dan Roth

10:55–11:20 *Importance sampling for unbiased on-demand evaluation of knowledge base population*
Arun Chaganty, Ashwin Paranjape, Percy Liang and Christopher D. Manning

11:20–11:45 *PACRR: A Position-Aware Neural IR Model for Relevance Matching*
Kai Hui, Andrew Yates, Klaus Berberich and Gerard de Melo

11:45–12:10 *Globally Normalized Reader*
Jonathan Raiman and John Miller

10:30–12:10 **Session 7B: Multimodal NLP 2**

10:30–10:55 *Speech segmentation with a neural encoder model of working memory*
Micha Elsner and Cory Shain

10:55–11:20 *Speaking, Seeing, Understanding: Correlating semantic models with conceptual representation in the brain*
Luana Bulat, Stephen Clark and Ekaterina Shutova

11:20–11:45 *Multi-modal Summarization for Asynchronous Collection of Text, Image, Audio and Video*
Haoran Li, Junnan Zhu, Cong Ma, Jiajun Zhang and Chengqing Zong

11:45–12:10 *Tensor Fusion Network for Multimodal Sentiment Analysis*
Amir Zadeh, Minghai Chen, Soujanya Poria, Erik Cambria and Louis-Philippe Morency

Sunday, September 10, 2017 (continued)

10:30–12:10 Session 7C: Human Centered NLP and Linguistic Theory

10:30–10:55 *ConStance: Modeling Annotation Contexts to Improve Stance Classification*
Kenneth Joseph, Lisa Friedland, William Hobbs, David Lazer and Oren Tsur

10:55–11:20 *Deeper Attention to Abusive User Content Moderation*
John Pavlopoulos, Prodromos Malakasiotis and Ion Androutsopoulos

11:20–11:45 *Outta Control: Laws of Semantic Change and Inherent Biases in Word Representation Models*
haim dubossarsky, Daphna Weinshall and Eitan Grossman

11:45–12:10 *Human Centered NLP with User-Factor Adaptation*
Veronica Lynn, Youngseo Son, Vivek Kulkarni, Niranjan Balasubramanian and H. Andrew Schwartz

10:30–12:10 Session 7D: Poster Session. Semantics 2

Neural Sequence Learning Models for Word Sense Disambiguation
Alessandro Raganato, Claudio Delli Bovi and Roberto Navigli

Learning Word Relatedness over Time
Guy D. Rosin, Eytan Adar and Kira Radinsky

Inter-Weighted Alignment Network for Sentence Pair Modeling
Gehui Shen, Yunlun Yang and Zhi-Hong Deng

A Short Survey on Taxonomy Learning from Text Corpora: Issues, Resources and Recent Advances
Chengyu Wang, Xiaofeng He and Aoying Zhou

Idiom-Aware Compositional Distributed Semantics
Pengfei Liu, Kaiyu Qian, Xipeng Qiu and Xuanjing Huang

Macro Grammars and Holistic Triggering for Efficient Semantic Parsing
Yuchen Zhang, Panupong Pasupat and Percy Liang

A Continuously Growing Dataset of Sentential Paraphrases
Wuwei Lan, Siyu Qiu, Hua He and Wei Xu

Cross-domain Semantic Parsing via Paraphrasing
Yu Su and Xifeng Yan

A Joint Sequential and Relational Model for Frame-Semantic Parsing
Bishan Yang and Tom Mitchell

Getting the Most out of AMR Parsing
Chuan Wang and Nianwen Xue

AMR Parsing using Stack-LSTMs
Miguel Ballesteros and Yaser Al-Onaizan

An End-to-End Deep Framework for Answer Triggering with a Novel Group-Level Objective
Jie Zhao, Yu Su, Ziyu Guan and Huan Sun

Predicting Word Association Strengths
Andrew Cattle and Xiaojuan Ma

10:30–12:10 Session 7E: Poster Session. Discourse

Learning Contextually Informed Representations for Linear-Time Discourse Parsing
Yang Liu and Mirella Lapata

Multi-task Attention-based Neural Networks for Implicit Discourse Relationship Representation and Identification
Man Lan, Jianxiang Wang, Yuanbin Wu, Zheng-Yu Niu and Haifeng Wang

Chinese Zero Pronoun Resolution with Deep Memory Network
Qingyu Yin, Yu Zhang, Weinan Zhang and Ting Liu

How much progress have we made on RST discourse parsing? A replication study of recent results on the RST-DT
Mathieu Morey, Philippe Muller and Nicholas Asher

What is it? Disambiguating the different readings of the pronoun 'it'
Sharid Loáiciga, Liane Guillou and Christian Hardmeier

Revisiting Selectional Preferences for Coreference Resolution
Benjamin Heinzerling, Nafise Sadat Moosavi and Michael Strube

Learning to Rank Semantic Coherence for Topic Segmentation
Liang Wang, Sujian Li, Yajuan Lv and Houfeng WANG

GRASP: Rich Patterns for Argumentation Mining
Eyal Shnarch, Ran Levy, Vikas Raykar and Noam Slonim

Patterns of Argumentation Strategies across Topics
Khalid Al Khatib, Henning Wachsmuth, Matthias Hagen and Benno Stein

Using Argument-based Features to Predict and Analyse Review Helpfulness
Haijing Liu, Yang Gao, Pin Lv, Mengxue Li, Shiqiang Geng, Minglan Li and Hao Wang

Here's My Point: Joint Pointer Architecture for Argument Mining
Peter Potash, Alexey Romanov and Anna Rumshisky

Identifying attack and support argumentative relations using deep learning
Oana Cocarascu and Francesca Toni

10:30–12:10 Session 7F: Poster Session. Machine Translation and Multilingual NLP 1

Neural Lattice-to-Sequence Models for Uncertain Inputs
Matthias Sperber, Graham Neubig, Jan Niehues and Alex Waibel

Memory-augmented Neural Machine Translation
Yang Feng, Shiyue Zhang, Andi Zhang, Dong Wang and Andrew Abel

Dynamic Data Selection for Neural Machine Translation
Marlies van der Wees, Arianna Bisazza and Christof Monz

Neural Machine Translation Leveraging Phrase-based Models in a Hybrid Search
Leonard Dahlmann, Evgeny Matusov, Pavel Petrushkov and Shahram Khadivi

Translating Phrases in Neural Machine Translation
Xing Wang, Zhaopeng Tu, Deyi Xiong and Min Zhang

Towards Bidirectional Hierarchical Representations for Attention-based Neural Machine Translation
Baosong Yang, Derek F. Wong, Tong Xiao, Lidia S. Chao and Jingbo Zhu

Exploring Hyperparameter Sensitivity in Neural Machine Translation Architectures
Denny Britz, Anna Goldie, Minh-Thang Luong and Quoc Le

Learning Translations via Matrix Completion
Derry Tanti Wijaya, Brendan Callahan, John Hewitt, Jie Gao, Xiao Ling, Marianna Apidianaki and Chris Callison-Burch

Reinforcement Learning for Bandit Neural Machine Translation with Simulated Human Feedback
Khanh Nguyen, Hal Daumé III and Jordan Boyd-Graber

Towards Compact and Fast Neural Machine Translation Using a Combined Method
Xiaowei Zhang, Wei Chen, Feng Wang, Shuang Xu and Bo Xu

Instance Weighting for Neural Machine Translation Domain Adaptation
Rui Wang, Masao Utiyama, Lemao Liu, Kehai Chen and Eiichiro Sumita

Sunday, September 10, 2017 (continued)

Regularization techniques for fine-tuning in neural machine translation
Antonio Valerio Miceli Barone, Barry Haddow, Ulrich Germann and Rico Sennrich

Source-Side Left-to-Right or Target-Side Left-to-Right? An Empirical Comparison of Two Phrase-Based Decoding Algorithms
Yin-Wen Chang and Michael Collins

Using Target-side Monolingual Data for Neural Machine Translation through Multi-task Learning
Tobias Domhan and Felix Hieber

12:10–13:40 ***Lunch***

12:40–13:40 **Session 8: SIGDAT Business Meeting**

13:40–15:20 **Session 9A: Semantics 3**

13:40–14:05 *Encoding Sentences with Graph Convolutional Networks for Semantic Role Labeling*
Diego Marcheggiani and Ivan Titov

14:05–14:30 *Neural Semantic Parsing with Type Constraints for Semi-Structured Tables*
Jayant Krishnamurthy, Pradeep Dasigi and Matt Gardner

14:30–14:55 *Joint Concept Learning and Semantic Parsing from Natural Language Explanations*
Shashank Srivastava, Igor Labutov and Tom Mitchell

14:55–15:20 *Grasping the Finer Point: A Supervised Similarity Network for Metaphor Detection*
Marek Rei, Luana Bulat, Douwe Kiela and Ekaterina Shutova

13:40–15:20 Session 9B: Computational Social Science 1

13:40–14:05 *Identifying civilians killed by police with distantly supervised entity-event extraction*
Katherine Keith, Abram Handler, Michael Pinkham, Cara Magliozzi, Joshua McDuffie and Brendan O'Connor

14:05–14:30 *Asking too much? The rhetorical role of questions in political discourse*
Justine Zhang, Arthur Spirling and Cristian Danescu-Niculescu-Mizil

14:30–14:55 *Detecting Perspectives in Political Debates*
David Vilares and Yulan He

14:55–15:20 *"i have a feeling trump will win.....": Forecasting Winners and Losers from User Predictions on Twitter*
Sandesh Swamy, Alan Ritter and Marie-Catherine de Marneffe

13:40–15:20 Session 9C: Sentiment Analysis 2

13:40–14:05 *A Question Answering Approach for Emotion Cause Extraction*
Lin Gui, Jiannan Hu, Yulan He, Ruifeng Xu, Lu Qin and Jiachen Du

14:05–14:30 *Story Comprehension for Predicting What Happens Next*
Snigdha Chaturvedi, Haoruo Peng and Dan Roth

14:30–14:55 *Using millions of emoji occurrences to learn any-domain representations for detecting sentiment, emotion and sarcasm*
Bjarke Felbo, Alan Mislove, Anders Søgaard, Iyad Rahwan and Sune Lehmann

14:55–15:20 *Opinion Recommendation Using A Neural Model*
Zhongqing Wang and Yue Zhang

13:40–15:20 Session 9D: Poster Session. Syntax 3

CRF Autoencoder for Unsupervised Dependency Parsing
Jiong Cai, Yong Jiang and Kewei Tu

Efficient Discontinuous Phrase-Structure Parsing via the Generalized Maximum Spanning Arborescence
Caio Corro, Joseph Le Roux and Mathieu Lacroix

Incremental Graph-based Neural Dependency Parsing
Xiaoqing Zheng

Neural Discontinuous Constituency Parsing
Miloš Stanojević and Raquel Garrido Alhama

Stack-based Multi-layer Attention for Transition-based Dependency Parsing
Zhirui Zhang, Shujie Liu, Mu Li, Ming Zhou and Enhong Chen

Dependency Grammar Induction with Neural Lexicalization and Big Training Data
Wenjuan Han, Yong Jiang and Kewei Tu

Combining Generative and Discriminative Approaches to Unsupervised Dependency Parsing via Dual Decomposition
Yong Jiang, Wenjuan Han and Kewei Tu

Effective Inference for Generative Neural Parsing
Mitchell Stern, Daniel Fried and Dan Klein

Semi-supervised Structured Prediction with Neural CRF Autoencoder
Xiao Zhang, Yong Jiang, Hao Peng, Kewei Tu and Dan Goldwasser

TAG Parsing with Neural Networks and Vector Representations of Supertags
Jungo Kasai, Bob Frank, Tom McCoy, Owen Rambow and Alexis Nasr

13:40–15:20 Session 9E: Poster Session. Relations

Global Normalization of Convolutional Neural Networks for Joint Entity and Relation Classification
Heike Adel and Hinrich Schütze

End-to-End Neural Relation Extraction with Global Optimization
Meishan Zhang, Yue Zhang and Guohong Fu

KGEval: Accuracy Estimation of Automatically Constructed Knowledge Graphs
Prakhar Ojha and Partha Talukdar

Sparsity and Noise: Where Knowledge Graph Embeddings Fall Short
Jay Pujara, Eriq Augustine and Lise Getoor

Dual Tensor Model for Detecting Asymmetric Lexico-Semantic Relations
Goran Glavaš and Simone Paolo Ponzetto

Incorporating Relation Paths in Neural Relation Extraction
Wenyuan Zeng, Yankai Lin, Zhiyuan Liu and Maosong Sun

Adversarial Training for Relation Extraction
Yi Wu, David Bamman and Stuart Russell

Context-Aware Representations for Knowledge Base Relation Extraction
Daniil Sorokin and Iryna Gurevych

A Soft-label Method for Noise-tolerant Distantly Supervised Relation Extraction
Tianyu Liu, Kexiang Wang, Baobao Chang and Zhifang Sui

A Sequential Model for Classifying Temporal Relations between Intra-Sentence Events
Prafulla Kumar Choubey and Ruihong Huang

Deep Residual Learning for Weakly-Supervised Relation Extraction
YiYao Huang and William Yang Wang

Noise-Clustered Distant Supervision for Relation Extraction: A Nonparametric Bayesian Perspective
Qing Zhang and Houfeng Wang

Exploring Vector Spaces for Semantic Relations
Kata Gábor, Haifa Zargayouna, Isabelle Tellier, Davide Buscaldi and Thierry Charnois

Temporal dynamics of semantic relations in word embeddings: an application to predicting armed conflict participants
Andrey Kutuzov, Erik Velldal and Lilja Øvrelid

13:40–15:20 Session 9F: Poster Session. Language Models, Text Mining, and Crowd Sourcing

Dynamic Entity Representations in Neural Language Models
Yangfeng Ji, Chenhao Tan, Sebastian Martschat, Yejin Choi and Noah A. Smith

Towards Quantum Language Models
Ivano Basile and Fabio Tamburini

Reference-Aware Language Models
Zichao Yang, Phil Blunsom, Chris Dyer and Wang Ling

A Simple Language Model based on PMI Matrix Approximations
Oren Melamud, Ido Dagan and Jacob Goldberger

Syllable-aware Neural Language Models: A Failure to Beat Character-aware Ones
Zhenisbek Assylbekov, Rustem Takhanov, Bagdat Myrzakhmetov and Jonathan N. Washington

Inducing Semantic Micro-Clusters from Deep Multi-View Representations of Novels
Lea Frermann and György Szarvas

Initializing Convolutional Filters with Semantic Features for Text Classification
Shen Li, Zhe Zhao, Tao Liu, Renfen Hu and Xiaoyong Du

Shortest-Path Graph Kernels for Document Similarity
Giannis Nikolentzos, Polykarpos Meladianos, Francois Rousseau, Yannis Stavrakas and Michalis Vazirgiannis

Adapting Topic Models using Lexical Associations with Tree Priors
Weiwei Yang, Jordan Boyd-Graber and Philip Resnik

Finding Patterns in Noisy Crowds: Regression-based Annotation Aggregation for Crowdsourced Data
Natalie Parde and Rodney Nielsen

CROWD-IN-THE-LOOP: A Hybrid Approach for Annotating Semantic Roles
Chenguang Wang, Alan Akbik, laura chiticariu, Yunyao Li, Fei Xia and Anbang Xu

15:20–15:50 ***Coffee Break***

15:50–17:30 **Session 10A: Machine Translation 2**

15:50–16:15 *Earth Mover's Distance Minimization for Unsupervised Bilingual Lexicon Induction*
Meng Zhang, Yang Liu, Huanbo Luan and Maosong Sun

16:15–16:40 *Unfolding and Shrinking Neural Machine Translation Ensembles*
Felix Stahlberg and Bill Byrne

16:40–17:05 *Graph Convolutional Encoders for Syntax-aware Neural Machine Translation*
Joost Bastings, Ivan Titov, Wilker Aziz, Diego Marcheggiani and Khalil Simaan

17:05–17:30 *Trainable Greedy Decoding for Neural Machine Translation*
Jiatao Gu, Kyunghyun Cho and Victor O.K. Li

Sunday, September 10, 2017 (continued)

15:50–17:30 Session 10B: Text Mining and NLP applications

15:50–16:15 *Satirical News Detection and Analysis using Attention Mechanism and Linguistic Features*
Fan Yang, Arjun Mukherjee and Eduard Dragut

16:15–16:40 *Fine Grained Citation Span for References in Wikipedia*
Besnik Fetahu, Katja Markert and Avishek Anand

16:40–17:05 *Joint Modeling of Topics, Citations, and Topical Authority in Academic Corpora*
Jooyeon Kim, Dongwoo Kim and Alice Oh

17:05–17:30 *Identifying Semantic Edit Intentions from Revisions in Wikipedia*
Diyi Yang, Aaron Halfaker, Robert Kraut and Eduard Hovy

15:50–17:30 Session 10C: Machine Comprehension

15:50–16:15 *Accurate Supervised and Semi-Supervised Machine Reading for Long Documents*
Daniel Hewlett, Llion Jones, Alexandre Lacoste and izzeddin gur

16:15–16:40 *Adversarial Examples for Evaluating Reading Comprehension Systems*
Robin Jia and Percy Liang

16:40–17:05 *Reasoning with Heterogeneous Knowledge for Commonsense Machine Comprehension*
Hongyu Lin, Le Sun and Xianpei Han

17:05–17:30 *Document-Level Multi-Aspect Sentiment Classification as Machine Comprehension*
Yichun Yin, Yangqiu Song and Ming Zhang

15:50–17:30 Session 10D: Poster Session. Summarization, Generation, Dialog, and Discourse 1

What is the Essence of a Claim? Cross-Domain Claim Identification
Johannes Daxenberger, Steffen Eger, Ivan Habernal, Christian Stab and Iryna Gurevych

Identifying Where to Focus in Reading Comprehension for Neural Question Generation
Xinya Du and Claire Cardie

Break it Down for Me: A Study in Automated Lyric Annotation
Lucas Sterckx, Jason Naradowsky, Bill Byrne, Thomas Demeester and Chris Develder

Cascaded Attention based Unsupervised Information Distillation for Compressive Summarization
Piji Li, Wai Lam, Lidong Bing, Weiwei Guo and Hang Li

Deep Recurrent Generative Decoder for Abstractive Text Summarization
Piji Li, Wai Lam, Lidong Bing and Zihao Wang

Extractive Summarization Using Multi-Task Learning with Document Classification
Masaru Isonuma, Toru Fujino, Junichiro Mori, Yutaka Matsuo and Ichiro Sakata

Towards Automatic Construction of News Overview Articles by News Synthesis
Jianmin Zhang and Xiaojun Wan

Joint Syntacto-Discourse Parsing and the Syntacto-Discourse Treebank
Kai Zhao and Liang Huang

Event Coreference Resolution by Iteratively Unfolding Inter-dependencies among Events
Prafulla Kumar Choubey and Ruihong Huang

When to Finish? Optimal Beam Search for Neural Text Generation (modulo beam size)
Liang Huang, Kai Zhao and Mingbo Ma

Steering Output Style and Topic in Neural Response Generation
Di Wang, Nebojsa Jojic, Chris Brockett and Eric Nyberg

15:50–17:30 Session 10E: Poster Session. Summarization, Generation, Dialog, and Discourse 2

Preserving Distributional Information in Dialogue Act Classification
Quan Hung Tran, Ingrid Zukerman and Gholamreza Haffari

Adversarial Learning for Neural Dialogue Generation
Jiwei Li, Will Monroe, Tianlin Shi, Sébastien Jean, Alan Ritter and Dan Jurafsky

Using Context Information for Dialog Act Classification in DNN Framework
Yang Liu, Kun Han, Zhao Tan and Yun Lei

Modeling Dialogue Acts with Content Word Filtering and Speaker Preferences
Yohan Jo, Michael Yoder, Hyeju Jang and Carolyn Rose

Towards Implicit Content-Introducing for Generative Short-Text Conversation Systems
Lili Yao, Yaoyuan Zhang, Yansong Feng, Dongyan Zhao and Rui Yan

Affordable On-line Dialogue Policy Learning
Cheng Chang, Runzhe Yang, Lu Chen, Xiang Zhou and Kai Yu

Generating High-Quality and Informative Conversation Responses with Sequence-to-Sequence Models
Yuanlong Shao, Stephan Gouws, Denny Britz, Anna Goldie, Brian Strope and Ray Kurzweil

Bootstrapping incremental dialogue systems from minimal data: the generalisation power of dialogue grammars
Arash Eshghi, Igor Shalyminov and Oliver Lemon

Composite Task-Completion Dialogue Policy Learning via Hierarchical Deep Reinforcement Learning
Baolin Peng, Xiujun Li, Lihong Li, Jianfeng Gao, Asli Celikyilmaz, Sungjin Lee and Kam-Fai Wong

Why We Need New Evaluation Metrics for NLG
Jekaterina Novikova, Ondřej Dušek, Amanda Cercas Curry and Verena Rieser

Challenges in Data-to-Document Generation
Sam Wiseman, Stuart Shieber and Alexander Rush

15:50–17:30 Session 10F: Poster Session. Computational Social Science 2

All that is English may be Hindi: Enhancing language identification through automatic ranking of the likeliness of word borrowing in social media
Jasabanta Patro, Bidisha Samanta, Saurabh Singh, Abhipsa Basu, Prithwish Mukherjee, Monojit Choudhury and Animesh Mukherjee

Multi-View Unsupervised User Feature Embedding for Social Media-based Substance Use Prediction
Tao Ding, Warren K. Bickel and Shimei Pan

Demographic-aware word associations
Aparna Garimella, Carmen Banea and Rada Mihalcea

A Factored Neural Network Model for Characterizing Online Discussions in Vector Space
Hao Cheng, Hao Fang and Mari Ostendorf

Dimensions of Interpersonal Relationships: Corpus and Experiments
Farzana Rashid and Eduardo Blanco

Argument Mining on Twitter: Arguments, Facts and Sources
Mihai Dusmanu, Elena Cabrio and Serena Villata

Distinguishing Japanese Non-standard Usages from Standard Ones
Tatsuya Aoki, Ryohei Sasano, Hiroya Takamura and Manabu Okumura

Connotation Frames of Power and Agency in Modern Films
Maarten Sap, Marcella Cindy Prasettio, Ari Holtzman, Hannah Rashkin and Yejin Choi

Controlling Human Perception of Basic User Traits
Daniel Preoţiuc-Pietro, Sharath Chandra Guntuku and Lyle Ungar

Topic Signatures in Political Campaign Speeches
Clément Gautrais, Peggy Cellier, René Quiniou and Alexandre Termier

Assessing Objective Recommendation Quality through Political Forecasting
H. Andrew Schwartz, Masoud Rouhizadeh, Michael Bishop, Philip Tetlock, Barbara Mellers and Lyle Ungar

Sunday, September 10, 2017 (continued)

Never Abandon Minorities: Exhaustive Extraction of Bursty Phrases on Microblogs Using Set Cover Problem
Masumi Shirakawa, Takahiro Hara and Takuya Maekawa

Monday, September 11, 2017

7:30–17:30 Registration Day 3

8:00–9:00 *Morning Coffee*

9:00–10:00 Session 11: Plenary Session. Invited Talk by Dan Jurafsky

9:00–10:00 *"Does This Vehicle Belong to You"? Processing the Language of Policing for Improving Police-Community Relations*
Dan Jurafsky

10:00–10:30 *Coffee Break*

10:30–12:10 Session 12A: Machine Learning 3

10:30–10:55 *Maximum Margin Reward Networks for Learning from Explicit and Implicit Supervision*
Haoruo Peng, Ming-Wei Chang and Wen-tau Yih

10:55–11:20 *The Impact of Modeling Overall Argumentation with Tree Kernels*
Henning Wachsmuth, Giovanni Da San Martino, Dora Kiesel and Benno Stein

11:20–11:45 *Learning Generic Sentence Representations Using Convolutional Neural Networks*
Zhe Gan, Yunchen Pu, Ricardo Henao, Chunyuan Li, Xiaodong He and Lawrence Carin

11:45–12:10 *Repeat before Forgetting: Spaced Repetition for Efficient and Effective Training of Neural Networks*
Hadi Amiri, Timothy Miller and Guergana Savova

10:30–12:10 Session 12B: Syntax 4

10:30–10:55 *Part-of-Speech Tagging for Twitter with Adversarial Neural Networks*
Tao Gui, Qi Zhang, Haoran Huang, Minlong Peng and Xuanjing Huang

10:55–11:20 *Investigating Different Syntactic Context Types and Context Representations for Learning Word Embeddings*
Bofang Li, Tao Liu, Zhe Zhao, Buzhou Tang, Aleksandr Drozd, Anna Rogers and Xiaoyong Du

11:20–11:45 *Does syntax help discourse segmentation? Not so much*
Chloé Braud, Ophélie Lacroix and Anders Søgaard

11:45–12:10 *Nonparametric Bayesian Semi-supervised Word Segmentation*
Daichi Mochihashi, Ryo Fujii and Ryo Domoto

10:30–12:10 Session 12C: Dialogue

10:30–10:55 *Deal or No Deal? End-to-End Learning of Negotiation Dialogues*
Mike Lewis, Denis Yarats, Yann Dauphin, Devi Parikh and Dhruv Batra

10:55–11:20 *Agent-Aware Dropout DQN for Safe and Efficient On-line Dialogue Policy Learning*
Lu Chen, Xiang Zhou, Cheng Chang, Runzhe Yang and Kai Yu

11:20–11:45 *Towards Debate Automation: a Recurrent Model for Predicting Debate Winners*
Peter Potash and Anna Rumshisky

11:45–12:10 *Conversation Modeling on Reddit Using a Graph-Structured LSTM*
Victoria Zayats and Mari Ostendorf

10:30–12:10 Session 12D: Poster Session. Machine Translation and Multilingual NLP 2

Joint Prediction of Word Alignment with Alignment Types
Anahita Mansouri Bigvand, Te Bu and Anoop Sarkar

Further Investigation into Reference Bias in Monolingual Evaluation of Machine Translation
Qingsong Ma, Yvette Graham, Timothy Baldwin and Qun Liu

A Challenge Set Approach to Evaluating Machine Translation
Pierre Isabelle, Colin Cherry and George Foster

Knowledge Distillation for Bilingual Dictionary Induction
Ndapandula Nakashole and Raphael Flauger

Machine Translation, it's a question of style, innit? The case of English tag questions
Rachel Bawden

Deciphering Related Languages
Nima Pourdamghani and Kevin Knight

Identifying Cognate Sets Across Dictionaries of Related Languages
Adam St Arnaud, David Beck and Grzegorz Kondrak

Learning Language Representations for Typology Prediction
Chaitanya Malaviya, Graham Neubig and Patrick Littell

Cheap Translation for Cross-Lingual Named Entity Recognition
Stephen Mayhew, Chen-Tse Tsai and Dan Roth

Cross-Lingual Induction and Transfer of Verb Classes Based on Word Vector Space Specialisation
Ivan Vulić, Nikola Mrkšić and Anna Korhonen

Classification of telicity using cross-linguistic annotation projection
Annemarie Friedrich and Damyana Gateva

Semantic Specialisation of Distributional Word Vector Spaces using Monolingual and Cross-Lingual Constraints
Nikola Mrkšić, Ivan Vulić, Diarmuid Ó Séaghdha, Roi Reichart, Ira Leviant, Milica Gašić, Anna Korhonen and Steve Young

Counterfactual Learning from Bandit Feedback under Deterministic Logging : A Case Study in Statistical Machine Translation
Carolin Lawrence, Artem Sokolov and Stefan Riezler

10:30–12:10 Session 12E: Poster Session. Information Extraction 2

Learning Fine-grained Relations from Chinese User Generated Categories
Chengyu Wang, Yan Fan, Xiaofeng He and Aoying Zhou

Improving Slot Filling Performance with Attentive Neural Networks on Dependency Structures
Lifu Huang, Avirup Sil, Heng Ji and Radu Florian

Identifying Products in Online Cybercrime Marketplaces: A Dataset for Fine-grained Domain Adaptation
Greg Durrett, Jonathan K. Kummerfeld, Taylor Berg-Kirkpatrick, Rebecca Portnoff, Sadia Afroz, Damon McCoy, Kirill Levchenko and Vern Paxson

Labeling Gaps Between Words: Recognizing Overlapping Mentions with Mention Separators
Aldrian Obaja Muis and Wei Lu

Deep Joint Entity Disambiguation with Local Neural Attention
Octavian-Eugen Ganea and Thomas Hofmann

MinIE: Minimizing Facts in Open Information Extraction
Kiril Gashteovski, Rainer Gemulla and Luciano Del Corro

Scientific Information Extraction with Semi-supervised Neural Tagging
Yi Luan, Mari Ostendorf and Hannaneh Hajishirzi

NITE: A Neural Inductive Teaching Framework for Domain Specific NER
Siliang Tang, Ning Zhang, Jinjiang Zhang, Fei Wu and Yueting Zhuang

Speeding up Reinforcement Learning-based Information Extraction Training using Asynchronous Methods
Aditya Sharma, Zarana Parekh and Partha Talukdar

Leveraging Linguistic Structures for Named Entity Recognition with Bidirectional Recursive Neural Networks
Peng-Hsuan Li, Ruo-Ping Dong, Yu-Siang Wang, Ju-Chieh Chou and Wei-Yun Ma

Fast and Accurate Entity Recognition with Iterated Dilated Convolutions
Emma Strubell, Patrick Verga, David Belanger and Andrew McCallum

Entity Linking via Joint Encoding of Types, Descriptions, and Context
Nitish Gupta, Sameer Singh and Dan Roth

An Insight Extraction System on BioMedical Literature with Deep Neural Networks
Hua He, Kris Ganjam, Navendu Jain, Jessica Lundin, Ryen White and Jimmy Lin

10:30–12:10 Session 12F: Poster Session. NLP Applications

Word Etymology as Native Language Interference
Vivi Nastase and Carlo Strapparava

A Simpler and More Generalizable Story Detector using Verb and Character Features
Joshua Eisenberg and Mark Finlayson

Multi-modular domain-tailored OCR post-correction
Sarah Schulz and Jonas Kuhn

Learning to Predict Charges for Criminal Cases with Legal Basis
Bingfeng Luo, Yansong Feng, Jianbo Xu, Xiang Zhang and Dongyan Zhao

Quantifying the Effects of Text Duplication on Semantic Models
Alexandra Schofield, Laure Thompson and David Mimno

Identifying Semantically Deviating Outlier Documents
Honglei Zhuang, Chi Wang, Fangbo Tao, Lance Kaplan and Jiawei Han

Detecting and Explaining Causes From Text For a Time Series Event
Dongyeop Kang, Varun Gangal, Ang Lu, Zheng Chen and Eduard Hovy

A Novel Cascade Model for Learning Latent Similarity from Heterogeneous Sequential Data of MOOC
Zhuoxuan Jiang, Shanshan Feng, Gao Cong, Chunyan Miao and Xiaoming Li

Identifying the Provision of Choices in Privacy Policy Text
Kanthashree Mysore Sathyendra, Shomir Wilson, Florian Schaub, Sebastian Zimmeck and Norman Sadeh

An Empirical Analysis of Edit Importance between Document Versions
Tanya Goyal, Sachin Kelkar, Manas Agarwal and Jeenu Grover

Transition-Based Disfluency Detection using LSTMs
Shaolei Wang, Wanxiang Che, Yue Zhang, Meishan Zhang and Ting Liu

Neural Sequence-Labelling Models for Grammatical Error Correction
Helen Yannakoudakis, Marek Rei, Øistein E. Andersen and Zheng Yuan

Adapting Sequence Models for Sentence Correction
Allen Schmaltz, Yoon Kim, Alexander Rush and Stuart Shieber

12:10–13:40 ***Lunch***

13:40–15:25 Session 13A: Machine Translation and Multilingual/Multimodal NLP (Short)

13:40–13:55 *A Study of Style in Machine Translation: Controlling the Formality of Machine Translation Output*
Xing Niu, Marianna Martindale and Marine Carpuat

13:55–14:10 *Sharp Models on Dull Hardware: Fast and Accurate Neural Machine Translation Decoding on the CPU*
Jacob Devlin

14:10–14:25 *Exploiting Cross-Sentence Context for Neural Machine Translation*
Longyue Wang, Zhaopeng Tu, Andy Way and Qun Liu

14:25–14:40 *Cross-Lingual Transfer Learning for POS Tagging without Cross-Lingual Resources*
Joo-Kyung Kim, Young-Bum Kim, Ruhi Sarikaya and Eric Fosler-Lussier

14:40–14:55 *Image Pivoting for Learning Multilingual Multimodal Representations*
Spandana Gella, Rico Sennrich, Frank Keller and Mirella Lapata

14:55–15:10 *Neural Machine Translation with Source Dependency Representation*
Kehai Chen, Rui Wang, Masao Utiyama, Lemao Liu, Akihiro Tamura, Eiichiro Sumita and Tiejun Zhao

15:10–15:25 *Visual Denotations for Recognizing Textual Entailment*
Dan Han, Pascual Martínez-Gómez and Koji Mineshima

13:40–15:25 Session 13B: Machine Learning (Short)

13:40–13:55 *Sequence Effects in Crowdsourced Annotations*
Nitika Mathur, Timothy Baldwin and Trevor Cohn

13:55–14:10 *No Need to Pay Attention: Simple Recurrent Neural Networks Work!*
Ferhan Ture and Oliver Jojic

14:10–14:25 *The strange geometry of skip-gram with negative sampling*
David Mimno and Laure Thompson

14:25–14:40 *Natural Language Processing with Small Feed-Forward Networks*
Jan A. Botha, Emily Pitler, Ji Ma, Anton Bakalov, Alex Salcianu, David Weiss, Ryan McDonald and Slav Petrov

14:40–14:55 *Deep Multi-Task Learning for Aspect Term Extraction with Memory Interaction*
Xin Li and Wai Lam

14:55–15:10 *Analogs of Linguistic Structure in Deep Representations*
Jacob Andreas and Dan Klein

15:10–15:25 *A Simple Regularization-based Algorithm for Learning Cross-Domain Word Embeddings*
Wei Yang, Wei Lu and Vincent Zheng

13:40–15:25 Session 13C: NLP Applications (Short)

13:40–13:55 *Learning what to read: Focused machine reading*
Enrique Noriega-Atala, Marco A. Valenzuela-Escárcega, Clayton Morrison and Mihai Surdeanu

13:55–14:10 *DOC: Deep Open Classification of Text Documents*
Lei Shu, Hu Xu and Bing Liu

14:10–14:25 *Charmanteau: Character Embedding Models For Portmanteau Creation*
Varun Gangal, Harsh Jhamtani, Graham Neubig, Eduard Hovy and Eric Nyberg

14:25–14:40 *Using Automated Metaphor Identification to Aid in Detection and Prediction of First-Episode Schizophrenia*
E. Dario Gutierrez, Guillermo Cecchi, Cheryl Corcoran and Philip Corlett

14:40–14:55 *Truth of Varying Shades: Analyzing Language in Fake News and Political Fact-Checking*
Hannah Rashkin, Eunsol Choi, Jin Yea Jang, Svitlana Volkova and Yejin Choi

14:55–15:10 *Topic-Based Agreement and Disagreement in US Electoral Manifestos*
Stefano Menini, Federico Nanni, Simone Paolo Ponzetto and Sara Tonelli

15:10–15:25 *Zipporah: a Fast and Scalable Data Cleaning System for Noisy Web-Crawled Parallel Corpora*
Hainan Xu and Philipp Koehn

15:25–15:50 *Coffee Break*

15:50–17:25 Session 14: Plenary Session. Best Paper

15:55–16:20 *Men Also Like Shopping: Reducing Gender Bias Amplification using Corpus-level Constraints*
Jieyu Zhao, Tianlu Wang, Mark Yatskar, Vicente Ordonez and Kai-Wei Chang

16:20–16:35 *Natural Language Does Not Emerge 'Naturally' in Multi-Agent Dialog*
Satwik Kottur, José Moura, Stefan Lee and Dhruv Batra

16:35–17:00 *Depression and Self-Harm Risk Assessment in Online Forums*
Andrew Yates, Arman Cohan and Nazli Goharian

17:00–17:25 *Bringing Structure into Summaries: Crowdsourcing a Benchmark Corpus of Concept Maps*
Tobias Falke and Iryna Gurevych

17:25–17:45 Session 15: Plenary Session. Closing Remarks

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