

ACL 2019

**The 57th Annual Meeting of the  
Association for Computational Linguistics**

**Proceedings of the Conference**

July 28 - August 2, 2019  
Florence, Italy

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## Message from the General Chair

Welcome to ACL 2019, the 57th Annual Meeting of the Association for Computational Linguistics. This year the conference will be held on July 28–August 2, in the captivating city of Florence. This is the first time that the ACL annual conference visits Italy, and for this occasion, it has selected Florence, the capital of Italy’s Tuscany region, and one of the most beautiful and visited art cities in the world.

ACL 2019 received a record number of papers, close to three thousand, representing a sharp increase with respect to last year. At the moment of writing this letter, we are also expecting record attendance, with close to three thousand participants. This is a clear indicator of how vibrant and dynamic our field is at the moment. At the same time, this continuous growth poses a challenge to the organizers, who have to adapt quickly to numbers that surpass any previous estimation they had. I must say that the team of organizers worked very hard and very professionally in this complex scenario, with the goal of offering a conference program and setting that suit most of the participants. ACL needs to be large in many aspects, but at the same time it should be an enjoyable conference for all, and it should retain the original spirit of the ACL annual conferences. I hope the effort made will bring us close to this difficult double objective.

As usual, the conference will span a six-day period, and it will include a varied program with 9 tutorials (July 28), 18 one-day workshops (August 1-2), the co-located Fourth Conference on Machine Translation (WMT19; August 1-2), the third Widening NLP workshop (WiNLP 2019; July 28), and the exciting main ACL program (July 29-31), which this year will present a record number of 660 original papers. Additionally, the main program of ACL will feature the Student Research Workshop and System Demonstrations, with 72 and 34 presentations, respectively. Finally, apart from the papers, ACL 2019 will enjoy also the contribution from two exceptional keynote speakers, Pascale Fung and Liang Huang, and it will see an ACL award ceremony with the Lifetime Achievement Award, the Distinguished Service Award, and the Test-of-Time paper awards.

Each ACL conference is the culmination of a long process, which involves a large team of committed people. It is an honor for me to have coordinated such a team of talented people, who kindly volunteered their time to make this conference possible. I would like to thank each and every one of them. The Program Co-Chairs, Anna Korhonen and David Traum, did a superb job at managing the avalanche of submissions, putting together the program committee, and leading the paper selection process. The Local Co-Chairs, Alessandro Lenci, Bernardo Magnini, and Simonetta Montemagni, were crucial in coordinating with the PCO for all the local arrangements, which were very complex given the growing size of the conference. Fortunately, we all had the help and advice from Priscilla Rasmussen, the ACL Business Manager, who knows everything about ACL conferences, and how to make them a success. The ACL Executive Committee has also been very supportive all the time, providing timely guidance and help to solve the problems that arose in the way.

I want to thank all of the other chairs for their dedication and hard work, more than often under a tight schedule: Workshop Co-Chairs Barbara Plank and Sebastian Riedel; Tutorial Co-Chairs Preslav Nakov and Alexis Palmer; Demo Co-Chairs Enrique Alfonseca and Marta R. Costa-jussà; Student Research Workshop Co-Chairs Fernando Alva-Manchego, Eunsol Choi and Daniel Khashabi; SRW Faculty Advisors Hannaneh Hajishirzi, Aurelie Herbelot, Scott Wen-tau Yih and Yue Zhang; Publication Co-Chairs Douwe Kiela, Ivan Vulić, Shay Cohen and Kevin Gimpel; Conference Handbook Co-Chairs Elena Cabrio and Rachele Sprugnoli; Conference App Chair Andrea Cimino; Local Arrangement Committee Sara Goggi, Maria Cristina Schiavone, Sacha Bourdeaud’Hui; Local Sponsorship Co-Chairs Roberto Basili and Giovanni Semeraro; Publicity Co-Chairs Felice Dell’Orletta, Lucia Passaro and Sara Tonelli; Mentorship Co-Chairs Rada Mihalcea, Robert Frederking and Aakanksha Naik; and Student Volunteer Coordinators Dominique Brunato, Marco Senaldi and Giulia Venturi.

I am also very grateful to the chairs of the previous years’ conferences (not only ACL but also NAACL

and EMNLP), who were always ready to help and to provide advice, contributing to the transmission, from year to year, of all the know-how and collective memory.

Many thanks to the senior area chairs, the area chairs, the reviewers, our workshop organizers, our tutorial instructors, the authors and presenters of papers, and the invited speakers.

I am also deeply grateful to all the sponsors for their great support to the conference.

Finally, I would like to thank all the participants, who will be the main actors from July 28 to August 2, 2019. I am convinced that we will experience a fantastic conference, scientifically exciting and full of fond memories, in the unique environment of Florence. Looking forward to seeing all of you there!

*Lluís Màrquez*

ACL 2019 General Chair

## Message from the Program Chairs

Welcome to the 57th Annual Meeting of the Association for Computational Linguistics! ACL 2019 has been a huge undertaking for the Program Committee (PC), but also very exciting as the conference has set new records on many fronts.

Anticipating a record number of submissions, we recruited the largest PC in the history of ACL. In November 2018, we issued a call for nominations for reviewers, Area Chairs (ACs) and Senior Area Chairs (SACs). By the deadline, we received 851 unique nominations that were used as a starting point for inviting members to the Program Committee. Our committee finally consisted of 2256 members!

In order to manage such a large committee effectively we extended the ACL 2018 practice and created a structure similar to the conferences that have a Senior Program Committee alongside the Program Committee. For the Senior PC, we recruited a relatively large number of Senior Area Chairs (46 SACs, 2–4 to head each area) and Area Chairs (184 ACs, 3–15 per area). We also differentiated between their roles so that SACs assign papers to ACs and reviewers and make recommendations for their area, while ACs each manage a smaller set of papers within the area, lead discussions with reviewers, write meta-reviews and make initial recommendations for a smaller set of papers. This structure also helps to compensate for the problem that our rapidly growing field is suffering from: the lack of experienced reviewers. As ACs focus on a smaller number of papers, they can pay more attention to the review process. As for reviewers, we had many of them this year: 2281. Our 22 thematic areas had 59–319 reviewers each.

We also looked into ways of improving efficiency and the experience for both authors and PC members. In particular, we dropped the paper bidding phase that would require thousands of people to each examine hundreds of abstracts each over a short period of time. Like NAACL 2019, we also dropped the author response phase that was stressful for authors and time-consuming but not hugely impactful on a larger scale. Finally, we adopted much simpler, streamlined review form, adapted from EMNLP 2018 that encouraged thorough review, but was less laborious for reviewers.

On the submission deadline, we were very glad that we had recruited such large PC and had made all these improvements for increased efficiency: we received 2905 submissions – a 75% increase over ACL 2018 and an all-time record for ACL-related conferences! After the review process, out of the total 2905 submissions (some of which were withdrawn or rejected without review for formatting and policy violations), 660 papers were finally accepted to appear in the conference, resulting in the overall acceptance rate of 22.7%. This is a little lower than the acceptance rate for ACL 2018 (24.9%) or ACL 2017 (23.3%) – yet remarkably similar when we consider the dramatic increase in submissions this year. Among the 660 accepted papers, we have 447 long papers and 213 short papers. As in previous years the acceptance rate is higher for long than for short papers (25.7% vs. 18.3%). Overall, ACL continues to be a very competitive conference. Continuing the tradition, ACL 2019 will also feature presentation of 22 papers that were accepted for publication in the Transactions of the Association for Computational Linguistics (TACL).

There are many we wish to thank for their great contribution to ACL 2019!

- The 46 SACs who did a massive job this year, equivalent in scope to duties of conference chairs from several years ago. They showed great patience with the increased workload (in the same brief schedule), working on weekends when necessary, and especially when our plan to replace paper bidding with TMPS didn't work as smoothly as we had hoped. Their input was instrumental in guiding the final decisions on papers, in selecting the outstanding papers and PC members, and in planning the conference program.

- The 184 ACs who worked hard on guiding discussions and writing meta-reviews and who kept our tight deadlines remarkably well.
- Our very hard-working reviewers who provided authors with valuable feedback. Special thanks to those reviewers who agreed to take on a larger than average workload this year!
- Our amazing PC chair assistants who helped us manage the huge workload throughout this year: Simon Baker and Ehsan Shareghi. Thank you also to Qianchu Liu, Olga Majewska, Edoardo Ponti, Victor Prokhorov and Yi Zhu who stepped in to provide additional help at critical times.
- The thousands of authors who worked hard to submit their research for review. While we could only accept a fraction of the submissions, we appreciate the hard work that went into many of the others.
- ACL editors-in-chief Mark Johnson, Lillian Lee, and Brian Roark, for coordinating the ACL presentations with us
- The program co-chairs of ACL 2018, Iryna Gurevych and Yusuke Miyao, who provided us with enormously useful advice throughout the year, and often with very short notice!
- Other recent \*ACL and EMNLP chairs who provided additional perspectives, documentation, advice and answers to questions, particularly Amanda Stent, Noah Smith, Julia Hockenmaier, and David Chiang.
- Douwe Kiela and Ivan Vulić, our super-organized publication chairs.
- Elena Cabrio and Rachele Sprugnoli for their help with the conference handbook.
- Rich Gerber at SoftConf, who worked quickly and tirelessly to add new features to accommodate our new AC role and quickly resolve any difficulties we encountered with the START system.
- Priscilla Rasmussen, Alessandro Lenci, Bernardo Magnini and Simonetta Montemagni for their helpful advice on issues involving the conference venue and local organization.
- The ACL Executive, particularly Marti Hearst, the president when we started planning the conference, and Barbara Di Eugenio, the liaison for conferences to help us sort through policy issues.
- Felice Dell’Orletta, Lucia Passaro, and Sara Tonelli for their great support with communications and social media.
- Our invited speakers Pascale Fung and Liang Huang who made the program of this conference even stronger!
- And last but not least Lluís Màrquez, our general chair, who gave us invaluable advice and did a fantastic job with coordinating the organization of this largest ACL ever!

Our heartfelt thanks to all of you, and we hope you will enjoy ACL 2019 in beautiful Florence!

*Anna Korhonen*, University of Cambridge, UK

*David Traum*, University of Southern California, USA

ACL 2019 Program Committee Co-Chairs



# Organizing Committee

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**Joakim Nivre, Timothy Baldwin**, Anders Søgaard, Jonathan May, Christian Hardmeier

## **Phonology, Morphology and Word Segmentation**

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## Invited Talk – Simultaneous Translation: Recent Advances and Remaining Challenges

**Liang Huang**

Principal Scientist and Head, Institute of Deep Learning USA (IDL-US),  
Baidu Research, Sunnyvale, CA, USA

**Abstract:** Simultaneous interpretation (i.e., translating concurrently with the source language speech) is widely used in many scenarios including multilateral organizations (UN/EU), international summits (APEC/G-20), legal proceedings, and press conferences. However, it is well known to be one of the most challenging tasks for humans due to the simultaneous perception and production in two languages. As a result, there are only a few thousand professional simultaneous interpreters world-wide, and each of them can only sustain for 15-30 minutes in each turn. On the other hand, simultaneous translation (either speech-to-text or speech-to-speech) is also notoriously difficult for machines and has remained one of the holy grails of AI. A key challenge here is the word order difference between the source and target languages. For example, if you simultaneously translate German (an SOV language) to English (an SVO language), you often have to wait for the sentence-final German verb. Therefore, most existing “real-time” translation systems resort to conventional full-sentence translation, causing an undesirable latency of at least one sentence, rendering the audience largely out of sync with the speaker. There have been efforts towards genuine simultaneous translation, but with limited success.

Recently, at Baidu Research, we discovered a much simpler and surprisingly effective approach to simultaneous (speech-to-text) translation by designing a “prefix-to-prefix” framework tailed to simultaneity requirements. This is in contrast with the “sequence-to-sequence” framework which assumes the availability of the full input sentence. Our approach results in the first simultaneous translation system that achieves reasonable translation quality with controllable latency. Our technique has been successfully deployed to simultaneously translate Chinese speeches into English subtitles at the 2018 Baidu World Conference, and has been demoed live at NeuIPS 2018 Expo Day.

Inspired by the success of this very simple approach, we have extended it to produce more flexible translation strategies. Our work has also generated renewed interest in this long-standing problem in the CL community; for instance, two recent papers from Google proposed interesting improvements based on our ideas. Time permitting, I will also discuss our efforts towards the ultimate goal of simultaneous speech-to-speech translation, and conclude with a list of remaining challenges.

See demos, media coverage, and more info at: <https://simultrans-demo.github.io/>

**Bio:** Liang Huang is Principal Scientist and Head of Institute of Deep Learning USA (IDL-US) at Baidu Research and Assistant Professor (on leave) at Oregon State University. He received his PhD from the University of Pennsylvania in 2008 and BS from Shanghai Jiao Tong University in 2003. He was previously a research scientist at Google, a research assistant professor at USC/ISI, an assistant professor at CUNY, a part-time research scientist at IBM. His research is in the theoretical aspects of computational linguistics. Many of his efficient algorithms in parsing, translation, and structured prediction have become standards in the field, for which he received a Best Paper Award at ACL 2008, a Best Paper Honorable Mention at EMNLP 2016, and several best paper nominations (ACL 2007, EMNLP 2008, ACL 2010, and SIGMOD 2018). He is also a computational biologist where he adapts his parsing algorithms to RNA and protein folding. He is an award-winning teacher and a best-selling author. His work has garnered widespread media attention including Fortune, CNBC, IEEE Spectrum, and MIT Technology Review.

# Invited Talk – Loquentes Machinae: Technology, Applications, and Ethics of Conversational Systems

**Pascale Fung**

Professor, Hong Kong University of Science & Technology (HKUST)

**Abstract:** From HAL in “2001:Space Odyssey” to Samantha in “Her”, conversational systems have always captured the public’s imagination as the ultimate intelligent machine. The famous Turing Test was designed to determine whether a machine “thinks” like human or not, based on natural conversation between human and a machine. With the advent of smart devices, conversational systems are suddenly everywhere, talking and responding to us from our phones, speakers, cars and call centers. Meanwhile, the public is also becoming increasingly concerned about privacy and security issues of these systems.

In the decades since the first DARPA Communicator project, conversational systems come in many different forms. Whereas research systems are predominantly based on deep learning approaches today, most of the commercial systems from the US and Asia are still using template-based and retrieval-based approaches. Recent advances in such systems include endowing them with the ability to (1) learn to memorize; (2) learn to personalize; and (3) learn to empathize. In all aspects of R&D in this area, we encounter the challenge of a lack of well-balanced and well-labeled data. Hence, multi-task and meta-learning have been proposed as possible solutions.

In this talk, I will give an overview of some of the technical challenges, approaches and applications of conversational systems, and the debates on ethical issues surrounding them. I will also highlight some of the cultural differences in this area and discuss how we can collaborate internationally to build conversational systems that are secure, safe, and fair for all.

**Bio:** Pascale Fung is a Professor in the Department of Electronic & Computer Engineering and the Department of Computer Science & Engineering at the Hong Kong University of Science & Technology (HKUST). She is the Director of the multidisciplinary Centre for AI Research (CAiRE) at HKUST, to promote R&D in beneficial and human-centered AI. She is an elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and an elected Fellow of the International Speech Communication Association (ISCA) for her contributions to the interdisciplinary area of spoken language human-machine interactions. She co-founded the Human Language Technology Center (HLTC) and is an affiliated faculty with the Robotics Institute and the Big Data Institute, both at HKUST. She is a past president and current board member of ACL SIGDAT, and past technical program chair of ACL and EMNLP conferences. She was Editor for Computer Speech and Language, Associate Editor for the IEEE/ACM Transactions on Audio, Speech and Language Processing and the Transactions on Association for Computational Linguistics. She was Technical Program Chair for IEEE ICASSP 2018 and will be TPC again in 2020 and 2024.

Fung’s work has always been focused on building intelligent systems that can understand and empathize with humans. Her specific areas of research are using statistical modelling and deep learning for natural language processing, spoken language systems, emotion and sentiment recognition. Pascale Fung has applied many of her research group’s results in the fields of, among others, robotics, IoT, and financial analytics. Her efforts led to the launch of the world’s first Chinese natural language search engine in 2001, the first Chinese virtual assistant for smartphones in 2010, and the first emotional intelligent speaker in 2017. Pascale Fung is a faculty expert for the World Economic Forum, and is a member of the Partnership on AI for the Benefit of Humanity and Society. She has been invited as an AI expert to different government initiatives in China, Japan, the UAE, India, the European Union and the United Nations. She has spoken extensively on using AI for public good and on the need for international collaborations in this area.



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# Conference Program

Monday, July 29, 2019

08:00–08:45 *Registration*

08:45–10:00 *Conference Opening and ACL Presidential Address*

10:00–10:30 *Break*

10:30–12:10 **Session 1A: Dialogue and Interactive Systems 1 - Neural Conversation Models**

10:30–10:50 *One Time of Interaction May Not Be Enough: Go Deep with an Interaction-over-Interaction Network for Response Selection in Dialogues*

Chongyang Tao, Wei Wu, Can Xu, Wenpeng Hu, Dongyan Zhao and Rui Yan

10:50–11:10 *Incremental Transformer with Deliberation Decoder for Document Grounded Conversations*

Zekang Li, Cheng Niu, Fandong Meng, Yang Feng, Qian Li and Jie Zhou

11:10–11:30 *Improving Multi-turn Dialogue Modelling with Utterance ReWriter*

Hui Su, Xiaoyu Shen, Rongzhi Zhang, Fei Sun, Pengwei Hu, Cheng Niu and Jie Zhou

11:30–11:43 *Do Neural Dialog Systems Use the Conversation History Effectively? An Empirical Study*

Chinnadhurai Sankar, Sandeep Subramanian, Chris Pal, Sarath Chandar and Yoshua Bengio

11:43–11:56 *Boosting Dialog Response Generation*

Wenchao Du and Alan W Black

11:56–12:09 *Constructing Interpretive Spatio-Temporal Features for Multi-Turn Responses Selection*

Junyu Lu, Chenbin Zhang, Zeying Xie, Guang Ling, Tom Chao Zhou and Zenglin Xu

**Monday, July 29, 2019 (continued)**

**10:30–12:10 Session 1B: Sentence-level Semantics**

- 10:30–10:50 *Semantic Parsing with Dual Learning*  
Ruisheng Cao, Su Zhu, Chen Liu, Jieyu Li and Kai Yu
- 10:50–11:10 *Semantic Expressive Capacity with Bounded Memory*  
Antoine Venant and Alexander Koller
- 11:10–11:30 *AMR Parsing as Sequence-to-Graph Transduction*  
Sheng Zhang, Xutai Ma, Kevin Duh and Benjamin Van Durme
- 11:30–11:50 *Generating Logical Forms from Graph Representations of Text and Entities*  
Peter Shaw, Philip Massey, Angelica Chen, Francesco Piccinno and Yasemin Altun
- 11:50–12:10 *Learning Compressed Sentence Representations for On-Device Text Processing*  
Dinghan Shen, Pengyu Cheng, Dhanasekar Sundararaman, Xinyuan Zhang, Qian Yang, Meng Tang, Asli Celikyilmaz and Lawrence Carin

**10:30–12:10 Session 1C: Tagging, Chunking, Syntax and Parsing 1**

- 10:30–10:50 *The (Non-)Utility of Structural Features in BiLSTM-based Dependency Parsers*  
Agnieszka Falenska and Jonas Kuhn
- 10:50–11:10 *Automatic Generation of High Quality CCGbanks for Parser Domain Adaptation*  
Masashi Yoshikawa, Hiroshi Noji, Koji Mineshima and Daisuke Bekki
- 11:10–11:30 *A Joint Named-Entity Recognizer for Heterogeneous Tag-sets Using a Tag Hierarchy*  
Genady Beryozkin, Yoel Drori, Oren Gilon, Tzvika Hartman and Idan Szpektor
- 11:30–11:50 *Massively Multilingual Transfer for NER*  
Afshin Rahimi, Yuan Li and Trevor Cohn
- 11:50–12:10 *Reliability-aware Dynamic Feature Composition for Name Tagging*  
Ying Lin, Liyuan Liu, Heng Ji, Dong Yu and Jiawei Han

**Monday, July 29, 2019 (continued)**

**10:30–12:10 Session 1D: Machine Translation 1**

- 10:30–10:50 *Unsupervised Pivot Translation for Distant Languages*  
Yichong Leng, Xu Tan, Tao Qin, Xiang-Yang Li and Tie-Yan Liu
- 10:50–11:10 *Bilingual Lexicon Induction with Semi-supervision in Non-Isometric Embedding Spaces*  
Barun Patra, Joel Ruben Antony Moniz, Sarthak Garg, Matthew R. Gormley and Graham Neubig
- 11:10–11:30 *An Effective Approach to Unsupervised Machine Translation*  
Mikel Artetxe, Gorka Labaka and Eneko Agirre
- 11:30–11:43 *Effective Adversarial Regularization for Neural Machine Translation*  
Motoki Sato, Jun Suzuki and Shun Kiyono
- 11:43–11:56 *Revisiting Low-Resource Neural Machine Translation: A Case Study*  
Rico Sennrich and Biao Zhang
- 11:56–12:09 *Domain Adaptive Inference for Neural Machine Translation*  
Danielle Saunders, Felix Stahlberg, Adrià de Gispert and Bill Byrne

**10:30–12:10 Session 1E: Information Extraction and Text Mining 1**

- 10:30–10:50 *Neural Relation Extraction for Knowledge Base Enrichment*  
Bayu Distiawan Trisedya, Gerhard Weikum, Jianzhong Qi and Rui Zhang
- 10:50–11:10 *Attention Guided Graph Convolutional Networks for Relation Extraction*  
Zhijiang Guo, Yan Zhang and Wei Lu
- 11:10–11:30 *Spatial Aggregation Facilitates Discovery of Spatial Topics*  
Aniruddha Maiti and Slobodan Vucetic
- 11:30–11:50 *Relation Embedding with Dihedral Group in Knowledge Graph*  
Canran Xu and Ruijiang Li

**Monday, July 29, 2019 (continued)**

11:50–12:10 *Sequence Tagging with Contextual and Non-Contextual Subword Representations: A Multilingual Evaluation*  
Benjamin Heinzerling and Michael Strube

**10:30–12:10 Session 1F: Machine Learning 1**

10:30–10:50 *Augmenting Neural Networks with First-order Logic*  
Tao Li and Vivek Srikumar

10:50–11:10 *Self-Regulated Interactive Sequence-to-Sequence Learning*  
Julia Kreutzer and Stefan Riezler

11:10–11:30 *[TACL] Learning Neural Sequence-to-Sequence Models from Weak Feedback with Bipolar Ramp Loss*  
Laura Jehl, Carolin Lawrence, and Stefan Riezler

11:30–11:43 *You Only Need Attention to Traverse Trees*  
Mahtab Ahmed, Muhammad Rifayat Samee and Robert E. Mercer

11:43–11:56 *Cross-Domain Generalization of Neural Constituency Parsers*  
Daniel Fried, Nikita Kitaev and Dan Klein

11:56–12:09 *Adaptive Attention Span in Transformers*  
Sainbayar Sukhbaatar, Edouard Grave, Piotr Bojanowski and Armand Joulin

**10:30–12:10 Poster Session 1**

Monday, July 29, 2019 (continued)

[Applications]

*Neural News Recommendation with Long- and Short-term User Representations*

Mingxiao An, Fangzhao Wu, Chuhan Wu, Kun Zhang, Zheng Liu and Xing Xie

*Automatic Domain Adaptation Outperforms Manual Domain Adaptation for Predicting Financial Outcomes*

Marina Sedinkina, Nikolas Breilkopf and Hinrich Schütze

*Manipulating the Difficulty of C-Tests*

Ji-Ung Lee, Erik Schwan and Christian M. Meyer

*Towards Unsupervised Text Classification Leveraging Experts and Word Embeddings*

Zied Haj-Yahia, Adrien Sieg and Léa A. Deleris

*Neural Text Simplification of Clinical Letters with a Domain Specific Phrase Table*

Matthew Shardlow and Raheel Nawaz

*What You Say and How You Say It Matters: Predicting Stock Volatility Using Verbal and Vocal Cues*

Yu Qin and Yi Yang

*Detecting Concealed Information in Text and Speech*

Shengli Hu

*Evidence-based Trustworthiness*

Yi Zhang, Zachary Ives and Dan Roth

*Disentangled Representation Learning for Non-Parallel Text Style Transfer*

Vineet John, Lili Mou, Hareesh Bahuleyan and Olga Vechtomova

*Cross-Sentence Grammatical Error Correction*

Shamil Chollampatt, Weiqi Wang and Hwee Tou Ng

*This Email Could Save Your Life: Introducing the Task of Email Subject Line Generation*

Rui Zhang and Joel Tetreault

*RankQA: Neural Question Answering with Answer Re-Ranking*

Bernhard Kratzwald, Anna Eigenmann and Stefan Feuerriegel

Monday, July 29, 2019 (continued)

**[Sentiment Analysis and Argument Mining]**

*Adversarial Attention Modeling for Multi-dimensional Emotion Regression*

Suyang Zhu, Shoushan Li and Guodong Zhou

*Divide, Conquer and Combine: Hierarchical Feature Fusion Network with Local and Global Perspectives for Multimodal Affective Computing*

Sijie Mai, Haifeng Hu and Songlong Xing

*Modeling Financial Analysts' Decision Making via the Pragmatics and Semantics of Earnings Calls*

Katherine Keith and Amanda Stent

*An Interactive Multi-Task Learning Network for End-to-End Aspect-Based Sentiment Analysis*

Ruidan He, Wee Sun Lee, Hwee Tou Ng and Daniel Dahlmeier

*Decompositional Argument Mining: A General Purpose Approach for Argument Graph Construction*

Debelu Gemechu and Chris Reed

*MELD: A Multimodal Multi-Party Dataset for Emotion Recognition in Conversations*

Soujanya Poria, Devamanyu Hazarika, Navonil Majumder, Gautam Naik, Erik Cambria and Rada Mihalcea

*Open-Domain Targeted Sentiment Analysis via Span-Based Extraction and Classification*

Minghao Hu, Yuxing Peng, Zhen Huang, Dongsheng Li and Yiwei Lv

*Transfer Capsule Network for Aspect Level Sentiment Classification*

Zhuang Chen and Tiejun Qian

*Progressive Self-Supervised Attention Learning for Aspect-Level Sentiment Analysis*

Jialong Tang, Ziyao Lu, Jinsong Su, Yubin Ge, Linfeng Song, Le Sun and Jiebo Luo

*Classification and Clustering of Arguments with Contextualized Word Embeddings*

Nils Reimers, Benjamin Schiller, Tilman Beck, Johannes Daxenberger, Christian Stab and Iryna Gurevych

Monday, July 29, 2019 (continued)

*Sentiment Tagging with Partial Labels using Modular Architectures*

Xiao Zhang and Dan Goldwasser

*DOER: Dual Cross-Shared RNN for Aspect Term-Polarity Co-Extraction*

Huaishao Luo, Tianrui Li, Bing Liu and Junbo Zhang

*A Corpus for Modeling User and Language Effects in Argumentation on Online Debating*

Esin Durmus and Claire Cardie

**[Discourse and Pragmatics]**

*Topic Tensor Network for Implicit Discourse Relation Recognition in Chinese*

Sheng Xu, Peifeng Li, Fang Kong, Qiaoming Zhu and Guodong Zhou

*Learning from Omission*

Bill McDowell and Noah Goodman

*Multi-Task Learning for Coherence Modeling*

Youmna Farag and Helen Yannakoudakis

*Data Programming for Learning Discourse Structure*

Sonia Badene, Kate Thompson, Jean-Pierre Lorré and Nicholas Asher

*Evaluating Discourse in Structured Text Representations*

Elisa Ferracane, Greg Durrett, Junyi Jessy Li and Katrin Erk

*Know What You Don't Know: Modeling a Pragmatic Speaker that Refers to Objects of Unknown Categories*

Sina Zarriß and David Schlangen

*End-to-end Deep Reinforcement Learning Based Coreference Resolution*

Hongliang Fei, Xu Li, Dingcheng Li and Ping Li

*Implicit Discourse Relation Identification for Open-domain Dialogues*

Mingyu Derek Ma, Kevin Bowden, Jiaqi Wu, Wen Cui and Marilyn Walker

Monday, July 29, 2019 (continued)

*Coreference Resolution with Entity Equalization*

Ben Kantor and Amir Globerson

*A Cross-Domain Transferable Neural Coherence Model*

Peng Xu, Hamidreza Saghir, Jin Sung Kang, Teng Long, Avishek Joey Bose, Yan-shuai Cao and Jackie Chi Kit Cheung

**[Resources and Evaluation]**

*MOROCCO: The Moldavian and Romanian Dialectal Corpus*

Andrei Butnaru and Radu Tudor Ionescu

*Just "OneSeC" for Producing Multilingual Sense-Annotated Data*

Bianca Scarlino, Tommaso Pasini and Roberto Navigli

*How to (Properly) Evaluate Cross-Lingual Word Embeddings: On Strong Baselines, Comparative Analyses, and Some Misconceptions*

Goran Glavaš, Robert Litschko, Sebastian Ruder and Ivan Vulić

*SP-10K: A Large-scale Evaluation Set for Selectional Preference Acquisition*

Hongming Zhang, Hantian Ding and Yangqiu Song

*A Wind of Change: Detecting and Evaluating Lexical Semantic Change across Times and Domains*

Dominik Schlechtweg, Anna Hättig, Marco Del Tredici and Sabine Schulte im Walde

*Errudite: Scalable, Reproducible, and Testable Error Analysis*

Tongshuang Wu, Marco Tulio Ribeiro, Jeffrey Heer and Daniel Weld

*DocRED: A Large-Scale Document-Level Relation Extraction Dataset*

Yuan Yao, Deming Ye, Peng Li, Xu Han, Yankai Lin, Zhenghao Liu, Zhiyuan Liu, Lixin Huang, Jie Zhou and Maosong Sun

*ChID: A Large-scale Chinese IDiom Dataset for Cloze Test*

Chujie Zheng, Minlie Huang and Aixin Sun

*Automatic Evaluation of Local Topic Quality*

Jeffrey Lund, Piper Armstrong, Wilson Fearn, Stephen Cowley, Courtni Byun, Jordan Boyd-Graber and Kevin Seppi



**Monday, July 29, 2019 (continued)**

*Crowdsourcing and Aggregating Nested Markable Annotations*

Chris Madge, Juntao Yu, Jon Chamberlain, Udo Kruschwitz, Silviu Paun and Massimo Poesio

**10:30–12:10 Student Research Workshop Poster Session 1**

**12:10–13:50 Lunch**

**13:50–15:30 Session 2A: Dialogue and Interactive Systems 2 - Task-Oriented Dialogue**

13:50–14:10 *Transferable Multi-Domain State Generator for Task-Oriented Dialogue Systems*

Chien-Sheng Wu, Andrea Madotto, Ehsan Hosseini-Asl, Caiming Xiong, Richard Socher and Pascale Fung

14:10–14:30 *Multi-Task Networks with Universe, Group, and Task Feature Learning*

Shiva Pentyala, Mengwen Liu and Markus Dreyer

14:30–14:50 *Constrained Decoding for Neural NLG from Compositional Representations in Task-Oriented Dialogue*

Anusha Balakrishnan, Jinfeng Rao, Kartikeya Upasani, Michael White and Rajen Subba

14:50–15:10 *[TACL] Learning End-to-End Goal-Oriented Dialog with Maximal User Task Success and Minimal Human Agent Use*

Janarthanan Rajendran, Jatin Ganhotra and Lazaros C. Polymenakos

15:10–15:30 *OpenDialKG: Explainable Conversational Reasoning with Attention-based Walks over Knowledge Graphs*

Seungwhan Moon, Pararth Shah, Anuj Kumar and Rajen Subba

**13:50–15:30 Session 2B: Textual Inference and Other Areas of Semantics**

13:50–14:10 *Coupling Retrieval and Meta-Learning for Context-Dependent Semantic Parsing*

Daya Guo, Duyu Tang, Nan Duan, Ming Zhou and Jian Yin

14:10–14:30 *Knowledge-aware Pronoun Coreference Resolution*

Hongming Zhang, Yan Song, Yangqiu Song and Dong Yu

**Monday, July 29, 2019 (continued)**

14:30–14:50 *Don't Take the Premise for Granted: Mitigating Artifacts in Natural Language Inference*  
Yonatan Belinkov, Adam Poliak, Stuart Shieber, Benjamin Van Durme and Alexander Rush

14:50–15:10 *GEAR: Graph-based Evidence Aggregating and Reasoning for Fact Verification*  
Jie Zhou, Xu Han, Cheng Yang, Zhiyuan Liu, Lifeng Wang, Changcheng Li and Maosong Sun

15:10–15:30 *SherLliC: A Typed Event-Focused Lexical Inference Benchmark for Evaluating Natural Language Inference*  
Martin Schmitt and Hinrich Schütze

**13:50–15:30 Session 2C: Applications 1 - Health**

13:50–14:10 *Extracting Symptoms and their Status from Clinical Conversations*  
Nan Du, Kai Chen, Anjuli Kannan, Linh Tran, Yuhui Chen and Izhak Shafran

14:10–14:30 *What Makes a Good Counselor? Learning to Distinguish between High-quality and Low-quality Counseling Conversations*  
Verónica Pérez-Rosas, Xinyi Wu, Kenneth Resnicow and Rada Mihalcea

14:30–14:50 *Finding Your Voice: The Linguistic Development of Mental Health Counselors*  
Justine Zhang, Robert Filbin, Christine Morrison, Jaclyn Weiser and Cristian Danescu-Niculescu-Mizil

14:50–15:03 *Towards Automating Healthcare Question Answering in a Noisy Multilingual Low-Resource Setting*  
Jeanne E. Daniel, Willie Brink, Ryan Eloff and Charles Copley

15:03–15:16 *Joint Entity Extraction and Assertion Detection for Clinical Text*  
Parminder Bhatia, Busra Celikkaya and Mohammed Khalilia

15:16–15:29 *HEAD-QA: A Healthcare Dataset for Complex Reasoning*  
David Vilares and Carlos Gómez-Rodríguez

**Monday, July 29, 2019 (continued)**

**13:50–15:30 Session 2D: Sentiment Analysis and Argument Mining 1**

13:50–14:10 *Are You Convinced? Choosing the More Convincing Evidence with a Siamese Network*

Martin Gleize, Eyal Shnarch, Leshem Choshen, Lena Dankin, Guy Moshkovich, Ranit Aharonov and Noam Slonim

14:10–14:30 *From Surrogacy to Adoption; From Bitcoin to Cryptocurrency: Debate Topic Expansion*

Roy Bar-Haim, Dalia Krieger, Orith Toledo-Ronen, Lilach Edelstein, Yonatan Bilu, Alon Halfon, Yoav Katz, Amir Menczel, Ranit Aharonov and Noam Slonim

14:30–14:50 *Multimodal and Multi-view Models for Emotion Recognition*

Gustavo Aguilar, Viktor Rozgic, Weiran Wang and Chao Wang

14:50–15:10 *Emotion-Cause Pair Extraction: A New Task to Emotion Analysis in Texts*

Rui Xia and Zixiang Ding

15:10–15:30 *Argument Invention from First Principles*

Yonatan Bilu, Ariel Gera, Daniel Hershcovich, Benjamin Sznajder, Dan Lahav, Guy Moshkovich, Anael Malet, Assaf Gavron and Noam Slonim

**13:50–15:30 Session 2E: Summarization 1**

13:50–14:10 *Improving the Similarity Measure of Determinantal Point Processes for Extractive Multi-Document Summarization*

Sangwoo Cho, Logan Lebanoff, Hassan Foroosh and Fei Liu

14:10–14:30 *Global Optimization under Length Constraint for Neural Text Summarization*

Takuya Makino, Tomoya Iwakura, Hiroya Takamura and Manabu Okumura

14:30–14:50 *Searching for Effective Neural Extractive Summarization: What Works and What's Next*

Ming Zhong, Pengfei Liu, Danqing Wang, Xipeng Qiu and Xuanjing Huang

14:50–15:10 *A Simple Theoretical Model of Importance for Summarization*

Maxime Peyrard

15:10–15:30 *Multi-News: A Large-Scale Multi-Document Summarization Dataset and Abstractive Hierarchical Model*

Alexander Fabbri, Irene Li, Tianwei She, Suyi Li and Dragomir Radev

**Monday, July 29, 2019 (continued)**

**13:50–15:30 Session 2F: Document Analysis**

13:50–14:10 *Generating Natural Language Adversarial Examples through Probability Weighted Word Saliency*  
Shuhuai Ren, Yihe Deng, Kun He and Wanxiang Che

14:10–14:30 *Heuristic Authorship Obfuscation*  
Janek Bevendorff, Martin Potthast, Matthias Hagen and Benno Stein

14:30–14:50 *[TACL] SECTOR: A Neural Model for Coherent Topic Segmentation and Classification*  
Sebastian Arnold, Rudolf Schneider, Philippe Cudré-Mauroux, Felix A. Gers and Alexander Löser

14:50–15:10 *[TACL] Categorical Metadata Representation for Customized Text Classification*  
Jihyeok Kim, Reinald Kim Amplayo, Kyungjae Lee, Sua Sung, Minji Seo and Seung-won Hwang

15:10–15:30 *Text Categorization by Learning Predominant Sense of Words as Auxiliary Task*  
Kazuya Shimura, Jiyi Li and Fumiyo Fukumoto

**13:50–15:30 Poster Session 2**

**[Applications]**

*DeepSentiPeer: Harnessing Sentiment in Review Texts to Recommend Peer Review Decisions*  
Tirthankar Ghosal, Rajeev Verma, Asif Ekbal and Pushpak Bhattacharyya

*Gated Embeddings in End-to-End Speech Recognition for Conversational-Context Fusion*  
Suyoun Kim, Siddharth Dalmia and Florian Metze

*Figurative Usage Detection of Symptom Words to Improve Personal Health Mention Detection*  
Adith Iyer, Aditya Joshi, Sarvnaz Karimi, Ross Sparks and Cecile Paris

*Complex Word Identification as a Sequence Labelling Task*  
Sian Gooding and Ekaterina Kochmar

*Neural News Recommendation with Topic-Aware News Representation*  
Chuhan Wu, Fangzhao Wu, Mingxiao An, Yongfeng Huang and Xing Xie

Monday, July 29, 2019 (continued)

*Poetry to Prose Conversion in Sanskrit as a Linearisation Task: A Case for Low-Resource Languages*

Amrith Krishna, Vishnu Sharma, Bishal Santra, Aishik Chakraborty, Pavankumar Satuluri and Pawan Goyal

*Learning Emphasis Selection for Written Text in Visual Media from Crowd-Sourced Label Distributions*

Amirreza Shirani, Franck Dernoncourt, Paul Asente, Nedim Lipka, Seokhwan Kim, Jose Echevarria and Thamar Solorio

*Rumor Detection by Exploiting User Credibility Information, Attention and Multi-task Learning*

Quanzhi Li, Qiong Zhang and Luo Si

*Context-specific Language Modeling for Human Trafficking Detection from Online Advertisements*

Saeideh Shahrokh Esfahani, Michael J. Cafarella, Maziyar Baran Pouyan, Gregory DeAngelo, Elena Eneva and Andy E. Fano

**[Machine Translation]**

*Self-Attentional Models for Lattice Inputs*

Matthias Sperber, Graham Neubig, Ngoc-Quan Pham and Alex Waibel

*[TACL] Semantic Neural Machine Translation using AMR*

Linfeng Song, Daniel Gildea, Yue Zhang, Zhiguo Wang and Jinsong Su

*When a Good Translation is Wrong in Context: Context-Aware Machine Translation Improves on Deixis, Ellipsis, and Lexical Cohesion*

Elena Voita, Rico Sennrich and Ivan Titov

*A Compact and Language-Sensitive Multilingual Translation Method*

Yining Wang, Long Zhou, Jiajun Zhang, Feifei Zhai, Jingfang Xu and Chengqing Zong

*Unsupervised Parallel Sentence Extraction with Parallel Segment Detection Helps Machine Translation*

Viktor Hangya and Alexander Fraser

*Unsupervised Bilingual Word Embedding Agreement for Unsupervised Neural Machine Translation*

Haipeng Sun, Rui Wang, Kehai Chen, Masao Utiyama, Eiichiro Sumita and Tiejun Zhao

**Monday, July 29, 2019 (continued)**

*Effective Cross-lingual Transfer of Neural Machine Translation Models without Shared Vocabularies*

Yunsu Kim, Yingbo Gao and Hermann Ney

*Improved Zero-shot Neural Machine Translation via Ignoring Spurious Correlations*

Jiatao Gu, Yong Wang, Kyunghyun Cho and Victor O.K. Li

*Syntactically Supervised Transformers for Faster Neural Machine Translation*

Nader Akoury, Kalpesh Krishna and Mohit Iyyer

*Dynamically Composing Domain-Data Selection with Clean-Data Selection by "Co-Curricular Learning" for Neural Machine Translation*

Wei Wang, Isaac Caswell and Ciprian Chelba

*On the Word Alignment from Neural Machine Translation*

Xintong Li, Guanlin Li, Lemao Liu, Max Meng and Shuming Shi

*Imitation Learning for Non-Autoregressive Neural Machine Translation*

Bingzhen Wei, Mingxuan Wang, Hao Zhou, Junyang Lin and Xu Sun

*Monotonic Infinite Lookback Attention for Simultaneous Machine Translation*

Naveen Arivazhagan, Colin Cherry, Wolfgang Macherey, Chung-Cheng Chiu, Semih Yavuz, Ruoming Pang, Wei Li and Colin Raffel

#### **[Information Extraction and Text Mining]**

*Global Textual Relation Embedding for Relational Understanding*

Zhiyu Chen, Hanwen Zha, Honglei Liu, Wenhui Chen, Xifeng Yan and Yu Su

*Graph Neural Networks with Generated Parameters for Relation Extraction*

Hao Zhu, Yankai Lin, Zhiyuan Liu, Jie Fu, Tat-Seng Chua and Maosong Sun

*Entity-Relation Extraction as Multi-Turn Question Answering*

Xiaoya Li, Fan Yin, Zijun Sun, Xiayu Li, Arianna Yuan, Duo Chai, Mingxin Zhou and Jiwei Li

*Exploiting Entity BIO Tag Embeddings and Multi-task Learning for Relation Extraction with Imbalanced Data*

Wei Ye, Bo Li, Rui Xie, Zhonghao Sheng, Long Chen and Shikun Zhang

**Monday, July 29, 2019 (continued)**

*Joint Type Inference on Entities and Relations via Graph Convolutional Networks*

Changzhi Sun, Yeyun Gong, Yuanbin Wu, Ming Gong, Daxin Jiang, Man Lan, Shiliang Sun and Nan Duan

*Extracting Multiple-Relations in One-Pass with Pre-Trained Transformers*

Haoyu Wang, Ming Tan, Mo Yu, Shiyu Chang, Dakuo Wang, Kun Xu, Xiaoxiao Guo and Saloni Potdar

*Unsupervised Information Extraction: Regularizing Discriminative Approaches with Relation Distribution Losses*

Étienne Simon, Vincent Guigue and Benjamin Piwowarski

*Fine-tuning Pre-Trained Transformer Language Models to Distantly Supervised Relation Extraction*

Christoph Alt, Marc Hübner and Leonhard Hennig

*ARNOR: Attention Regularization based Noise Reduction for Distant Supervision Relation Classification*

Wei Jia, Dai Dai, Xinyan Xiao and Hua Wu

*GraphRel: Modeling Text as Relational Graphs for Joint Entity and Relation Extraction*

Tsu-Jui Fu, Peng-Hsuan Li and Wei-Yun Ma

*DIAG-NRE: A Neural Pattern Diagnosis Framework for Distantly Supervised Neural Relation Extraction*

Shun Zheng, Xu Han, Yankai Lin, Peilin Yu, Lu Chen, Ling Huang, Zhiyuan Liu and Wei Xu

*Multi-grained Named Entity Recognition*

Congying Xia, Chenwei Zhang, Tao Yang, Yaliang Li, Nan Du, Xian Wu, Wei Fan, Fenglong Ma and Philip Yu

*ERNIE: Enhanced Language Representation with Informative Entities*

Zhengyan Zhang, Xu Han, Zhiyuan Liu, Xin Jiang, Maosong Sun and Qun Liu

*Multi-Channel Graph Neural Network for Entity Alignment*

Yixin Cao, Zhiyuan Liu, Chengjiang Li, Zhiyuan Liu, Juanzi Li and Tat-Seng Chua

*A Neural Multi-digraph Model for Chinese NER with Gazetteers*

Ruixue Ding, Pengjun Xie, Xiaoyan Zhang, Wei Lu, Linlin Li and Luo Si

Monday, July 29, 2019 (continued)

[Machine Learning]

*Improved Language Modeling by Decoding the Past*

Siddhartha Brahma

*Training Hybrid Language Models by Marginalizing over Segmentations*

Edouard Grave, Sainbayar Sukhbaatar, Piotr Bojanowski and Armand Joulin

*Improving Neural Language Models by Segmenting, Attending, and Predicting the Future*

Hongyin Luo, Lan Jiang, Yonatan Belinkov and James Glass

*Lightweight and Efficient Neural Natural Language Processing with Quaternion Networks*

Yi Tay, Aston Zhang, Anh Tuan Luu, Jinfeng Rao, Shuai Zhang, Shuohang Wang, Jie Fu and Siu Cheung Hui

*Sparse Sequence-to-Sequence Models*

Ben Peters, Vlad Niculae and André F. T. Martins

*On the Robustness of Self-Attentive Models*

Yu-Lun Hsieh, Minhao Cheng, Da-Cheng Juan, Wei Wei, Wen-Lian Hsu and Cho-Jui Hsieh

*Exact Hard Monotonic Attention for Character-Level Transduction*

Shijie Wu and Ryan Cotterell

*A Lightweight Recurrent Network for Sequence Modeling*

Biao Zhang and Rico Sennrich

*Towards Scalable and Reliable Capsule Networks for Challenging NLP Applications*

Wei Zhao, Haiyun Peng, Steffen Eger, Erik Cambria and Min Yang

*Soft Representation Learning for Sparse Transfer*

Haeju Park, Jinyoung Yeo, Gengyu Wang and Seung-won Hwang

*Learning Representations from Imperfect Time Series Data via Tensor Rank Regularization*

Paul Pu Liang, Zhun Liu, Yao-Hung Hubert Tsai, Qibin Zhao, Ruslan Salakhutdinov and Louis-Philippe Morency



**Monday, July 29, 2019 (continued)**

*Towards Lossless Encoding of Sentences*

Gabriele Prato, Mathieu Duchesneau, Sarath Chandar and Alain Tapp

**[Phonology, Morphology and Word Segmentation]**

*Open Vocabulary Learning for Neural Chinese Pinyin IME*

Zhuosheng Zhang, Yafang Huang and Hai Zhao

*Using LSTMs to Assess the Obligatoriness of Phonological Distinctive Features for Phonotactic Learning*

Nicole Mirea and Klinton Bicknell

*Better Character Language Modeling through Morphology*

Terra Blevins and Luke Zettlemoyer

*Historical Text Normalization with Delayed Rewards*

Simon Flachs, Marcel Bollmann and Anders Søgaard

*Stochastic Tokenization with a Language Model for Neural Text Classification*

Tatsuya Hiraoka, Hiroyuki Shindo and Yuji Matsumoto

**13:50–15:30 Demo Session 1**

**15:30–16:00 Break**

**Monday, July 29, 2019 (continued)**

**16:00–17:40 Session 3A: Bias in Language Processing**

- 16:00–16:20 *Mitigating Gender Bias in Natural Language Processing: Literature Review*  
Tony Sun, Andrew Gaut, Shirlyn Tang, Yuxin Huang, Mai ElSherief, Jieyu Zhao, Diba Mirza, Elizabeth Belding, Kai-Wei Chang and William Yang Wang
- 16:20–16:40 *Gender-preserving Debiasing for Pre-trained Word Embeddings*  
Masahiro Kaneko and Danushka Bollegala
- 16:40–17:00 *Counterfactual Data Augmentation for Mitigating Gender Stereotypes in Languages with Rich Morphology*  
Ran Zmigrod, Sebastian J. Mielke, Hanna Wallach and Ryan Cotterell
- 17:00–17:13 *A Transparent Framework for Evaluating Unintended Demographic Bias in Word Embeddings*  
Chris Sweeney and Maryam Najafian
- 17:13–17:26 *The Risk of Racial Bias in Hate Speech Detection*  
Maarten Sap, Dallas Card, Saadia Gabriel, Yejin Choi and Noah A. Smith
- 17:26–17:39 *Evaluating Gender Bias in Machine Translation*  
Gabriel Stanovsky, Noah A. Smith and Luke Zettlemoyer

**16:00–17:40 Session 3B: Word-level Semantics 1**

- 16:00–16:20 *LSTMEmbed: Learning Word and Sense Representations from a Large Semantically Annotated Corpus with Long Short-Term Memories*  
Ignacio Iacobacci and Roberto Navigli
- 16:20–16:40 *Understanding Undesirable Word Embedding Associations*  
Kawin Ethayarajh, David Duvenaud and Graeme Hirst
- 16:40–17:00 *Unsupervised Discovery of Gendered Language through Latent-Variable Modeling*  
Alexander Miserlis Hoyle, Lawrence Wolf-Sonkin, Hanna Wallach, Isabelle Augenstein and Ryan Cotterell
- 17:00–17:20 *Topic Sensitive Attention on Generic Corpora Corrects Sense Bias in Pretrained Embeddings*  
Vihari Piratla, Sunita Sarawagi and Soumen Chakrabarti

**Monday, July 29, 2019 (continued)**

17:20–17:40 *SphereRE: Distinguishing Lexical Relations with Hyperspherical Relation Embeddings*  
Chengyu Wang, Xiaofeng He and Aoying Zhou

**16:00–17:40 Session 3C: Multilinguality and Morphology**

16:00–16:20 *Multilingual Factor Analysis*  
Francisco Vargas, Kamen Brestnichki, Alex Papadopoulos Korfiatis and Nils Hammerla

16:20–16:40 *[TACL] Learning Multilingual Word Embeddings in Latent Metric Space: A Geometric Approach*  
Pratik Jawanpuria, Arjun Balgovind, Anoop Kunchukuttan and Bamdev Mishra

16:40–17:00 *Meaning to Form: Measuring Systematicity as Information*  
Tiago Pimentel, Arya D. McCarthy, Damian Blasi, Brian Roark and Ryan Cotterell

17:00–17:20 *Learning Morphosyntactic Analyzers from the Bible via Iterative Annotation Projection across 26 Languages*  
Garrett Nicolai and David Yarowsky

17:20–17:40 *Adversarial Multitask Learning for Joint Multi-Feature and Multi-Dialect Morphological Modeling*  
Nasser Zalmout and Nizar Habash

**16:00–17:40 Session 3D: Machine Translation 2**

16:00–16:20 *Neural Machine Translation with Reordering Embeddings*  
Kehai Chen, Rui Wang, Masao Utiyama and Eiichiro Sumita

16:20–16:40 *Neural Fuzzy Repair: Integrating Fuzzy Matches into Neural Machine Translation*  
Bram Bulte and Arda Tezcan

16:40–17:00 *Learning Deep Transformer Models for Machine Translation*  
Qiang Wang, Bei Li, Tong Xiao, Jingbo Zhu, Changliang Li, Derek F. Wong and Lidia S. Chao

17:00–17:13 *Generating Diverse Translations with Sentence Codes*  
Raphael Shu, Hideki Nakayama and Kyunghyun Cho

17:13–17:26 *Self-Supervised Neural Machine Translation*  
Dana Ruitter, Cristina España-Bonet and Josef van Genabith

**Monday, July 29, 2019 (continued)**

17:26–17:39 *Exploring Phoneme-Level Speech Representations for End-to-End Speech Translation*  
Elizabeth Salesky, Matthias Sperber and Alan W Black

**16:00–17:40 Session 3E: Vision, Robotics, Multimodal, Grounding and Speech**

16:00–16:20 *Visually Grounded Neural Syntax Acquisition*  
Haoyue Shi, Jiayuan Mao, Kevin Gimpel and Karen Livescu

16:20–16:40 *Stay on the Path: Instruction Fidelity in Vision-and-Language Navigation*  
Vihan Jain, Gabriel Magalhaes, Alexander Ku, Ashish Vaswani, Eugene Ie and Jason Baldridge

16:40–17:00 *Expressing Visual Relationships via Language*  
Hao Tan, Franck Dernoncourt, Zhe Lin, Trung Bui and Mohit Bansal

17:00–17:20 *Weakly-Supervised Spatio-Temporally Grounding Natural Sentence in Video*  
Zhenfang Chen, Lin Ma, Wenhan Luo and Kwan-Yee Kenneth Wong

17:20–17:40 *The PhotoBook Dataset: Building Common Ground through Visually-Grounded Dialogue*  
Janosch Haber, Tim Baumgärtner, Ece Takmaz, Lieke Gelderloos, Elia Bruni and Raquel Fernández

**16:00–17:40 Session 3F: Machine Learning 2**

16:00–16:20 *Continual and Multi-Task Architecture Search*  
Ramakanth Pasunuru and Mohit Bansal

16:20–16:40 *Semi-supervised Stochastic Multi-Domain Learning using Variational Inference*  
Yitong Li, Timothy Baldwin and Trevor Cohn

16:40–17:00 *Boosting Entity Linking Performance by Leveraging Unlabeled Documents*  
Phong Le and Ivan Titov

17:00–17:20 *Pre-Learning Environment Representations for Data-Efficient Neural Instruction Following*  
David Gaddy and Dan Klein

**Monday, July 29, 2019 (continued)**

17:20–17:40 *Reinforced Training Data Selection for Domain Adaptation*  
Miaofeng Liu, Yan Song, Hongbin Zou and Tong Zhang

**16:00–17:40 Poster Session 3**

**[Generation]**

*Generating Long and Informative Reviews with Aspect-Aware Coarse-to-Fine Decoding*

Junyi Li, Wayne Xin Zhao, Ji-Rong Wen and Yang Song

*PaperRobot: Incremental Draft Generation of Scientific Ideas*

Qingyun Wang, Lifu Huang, Zhiying Jiang, Kevin Knight, Heng Ji, Mohit Bansal and Yi Luan

*Rhetorically Controlled Encoder-Decoder for Modern Chinese Poetry Generation*

Zhiqiang Liu, Zuohui Fu, Jie Cao, Gerard de Melo, Yik-Cheung Tam, Cheng Niu and Jie Zhou

*Enhancing Topic-to-Essay Generation with External Commonsense Knowledge*

Pengcheng Yang, Lei Li, Fuli Luo, Tianyu Liu and Xu Sun

*Towards Fine-grained Text Sentiment Transfer*

Fuli Luo, Peng Li, Pengcheng Yang, Jie Zhou, Yutong Tan, Baobao Chang, Zhifang Sui and Xu Sun

*Data-to-text Generation with Entity Modeling*

Ratish Puduppully, Li Dong and Mirella Lapata

*Ensuring Readability and Data-fidelity using Head-modifier Templates in Deep Type Description Generation*

Jiangjie Chen, Ao Wang, Haiyun Jiang, Suo Feng, Chenguang Li and Yanghua Xiao

*Key Fact as Pivot: A Two-Stage Model for Low Resource Table-to-Text Generation*

Shuming Ma, Pengcheng Yang, Tianyu Liu, Peng Li, Jie Zhou and Xu Sun

*Unsupervised Neural Text Simplification*

Sai Surya, Abhijit Mishra, Anirban Laha, Parag Jain and Karthik Sankaranarayanan

Monday, July 29, 2019 (continued)

*Syntax-Infused Variational Autoencoder for Text Generation*

Xinyuan Zhang, Yi Yang, Siyang Yuan, Dinghan Shen and Lawrence Carin

*Towards Generating Long and Coherent Text with Multi-Level Latent Variable Models*

Dinghan Shen, Asli Celikyilmaz, Yizhe Zhang, Liqun Chen, Xin Wang, Jianfeng Gao and Lawrence Carin

*Jointly Learning Semantic Parser and Natural Language Generator via Dual Information Maximization*

Hai Ye, Wenjie Li and Lu Wang

*Learning to Select, Track, and Generate for Data-to-Text*

Hayate Iso, Yui Uehara, Tatsuya Ishigaki, Hiroshi Noji, Eiji Aramaki, Ichiro Kobayashi, Yusuke Miyao, Naoaki Okazaki and Hiroya Takamura

*Reinforced Dynamic Reasoning for Conversational Question Generation*

Boyuan Pan, Hao Li, Ziyu Yao, Deng Cai and Huan Sun

**[Summarization]**

*TalkSumm: A Dataset and Scalable Annotation Method for Scientific Paper Summarization Based on Conference Talks*

Guy Lev, Michal Shmueli-Scheuer, Jonathan Herzig, Achiya Jerbi and David Konopnicki

*Improving Abstractive Document Summarization with Salient Information Modeling*

Yongjian You, Weijia Jia, Tianyi Liu and Wenmian Yang

*Unsupervised Neural Single-Document Summarization of Reviews via Learning Latent Discourse Structure and its Ranking*

Masaru Isonuma, Junichiro Mori and Ichiro Sakata

*BiSET: Bi-directional Selective Encoding with Template for Abstractive Summarization*

Kai Wang, Xiaojun Quan and Rui Wang

*Neural Keyphrase Generation via Reinforcement Learning with Adaptive Rewards*

Hou Pong Chan, Wang Chen, Lu Wang and Irwin King

*Scoring Sentence Singletons and Pairs for Abstractive Summarization*

Logan Lebanoff, Kaiqiang Song, Franck Dernoncourt, Doo Soon Kim, Seokhwan Kim, Walter Chang and Fei Liu

**Monday, July 29, 2019 (continued)**

*Keep Meeting Summaries on Topic: Abstractive Multi-Modal Meeting Summarization*

Manling Li, Lingyu Zhang, Heng Ji and Richard J. Radke

*Adversarial Domain Adaptation Using Artificial Titles for Abstractive Title Generation*

Francine Chen and Yan-Ying Chen

*BIGPATENT: A Large-Scale Dataset for Abstractive and Coherent Summarization*

Eva Sharma, Chen Li and Lu Wang

*Ranking Generated Summaries by Correctness: An Interesting but Challenging Application for Natural Language Inference*

Tobias Falke, Leonardo F. R. Ribeiro, Prasetya Ajie Utama, Ido Dagan and Iryna Gurevych

*Self-Supervised Learning for Contextualized Extractive Summarization*

Hong Wang, Xin Wang, Wenhan Xiong, Mo Yu, Xiaoxiao Guo, Shiyu Chang and William Yang Wang

*On the Summarization of Consumer Health Questions*

Asma Ben Abacha and Dina Demner-Fushman

*Unsupervised Rewriter for Multi-Sentence Compression*

Yang Zhao, Xiaoyu Shen, Wei Bi and Akiko Aizawa

#### **[Question Answering]**

*Inferential Machine Comprehension: Answering Questions by Recursively Deducing the Evidence Chain from Text*

Jianxing Yu, Zhengjun Zha and Jian Yin

*Token-level Dynamic Self-Attention Network for Multi-Passage Reading Comprehension*

Yimeng Zhuang and Huadong Wang

*Explicit Utilization of General Knowledge in Machine Reading Comprehension*

Chao Wang and Hui Jiang

*Multi-style Generative Reading Comprehension*

Kyosuke Nishida, Itsumi Saito, Kosuke Nishida, Kazutoshi Shinoda, Atsushi Otsuka, Hisako Asano and Junji Tomita

**Monday, July 29, 2019 (continued)**

*Retrieve, Read, Rerank: Towards End-to-End Multi-Document Reading Comprehension*

Minghao Hu, Yuxing Peng, Zhen Huang and Dongsheng Li

*Multi-Hop Paragraph Retrieval for Open-Domain Question Answering*

Yair Feldman and Ran El-Yaniv

*E3: Entailment-driven Extracting and Editing for Conversational Machine Reading*

Victor Zhong and Luke Zettlemoyer

*Generating Question-Answer Hierarchies*

Kalpesh Krishna and Mohit Iyyer

*Answering while Summarizing: Multi-task Learning for Multi-hop QA with Evidence Extraction*

Kosuke Nishida, Kyosuke Nishida, Masaaki Nagata, Atsushi Otsuka, Itsumi Saito, Hisako Asano and Junji Tomita

*Enhancing Pre-Trained Language Representations with Rich Knowledge for Machine Reading Comprehension*

An Yang, Quan Wang, Jing Liu, Kai Liu, Yajuan Lyu, Hua Wu, Qiaoqiao She and Sujian Li

*XQA: A Cross-lingual Open-domain Question Answering Dataset*

Jiahua Liu, Yankai Lin, Zhiyuan Liu and Maosong Sun

*[TACL] Complex Program Induction for Querying Knowledge Bases in the Absence of Gold Programs*

Amrita Saha, Ghulam Ahmed Ansari, Abhishek Laddha, Karthik Sankaranarayanan and Soumen Chakrabarti

*[TACL] Trick Me If You Can: Human-in-the-loop Generation of Adversarial Question Answering*

Eric Wallace, Pedro Rodriguez, Shi Feng, Ikuya Yamada and Jordan Boyd-Graber

**[Tagging, Chunking, Syntax and Parsing]**

*Compound Probabilistic Context-Free Grammars for Grammar Induction*

Yoon Kim, Chris Dyer and Alexander Rush

*Semi-supervised Domain Adaptation for Dependency Parsing*

Zhenghua Li, Xue Peng, Min Zhang, Rui Wang and Luo Si

*Head-Driven Phrase Structure Grammar Parsing on Penn Treebank*

Junru Zhou and Hai Zhao



**Monday, July 29, 2019 (continued)**

*Distantly Supervised Named Entity Recognition using Positive-Unlabeled Learning*  
Minlong Peng, Xiaoyu Xing, Qi Zhang, Jinlan Fu and Xuanjing Huang

*Multi-Task Semantic Dependency Parsing with Policy Gradient for Learning Easy-First Strategies*  
Shuhe Kurita and Anders Søgaard

*GCDT: A Global Context Enhanced Deep Transition Architecture for Sequence Labeling*  
Yijin Liu, Fandong Meng, Jinchao Zhang, Jinan Xu, Yufeng Chen and Jie Zhou

*Unsupervised Learning of PCFGs with Normalizing Flow*  
Lifeng Jin, Finale Doshi-Velez, Timothy Miller, Lane Schwartz and William Schuler

*Variance of Average Surprisal: A Better Predictor for Quality of Grammar from Unsupervised PCFG Induction*  
Lifeng Jin and William Schuler

*Cross-Domain NER using Cross-Domain Language Modeling*  
Chen Jia, Xiaobo Liang and Yue Zhang

*Graph-based Dependency Parsing with Graph Neural Networks*  
Tao Ji, Yuanbin Wu and Man Lan

*Wide-Coverage Neural A\* Parsing for Minimalist Grammars*  
John Torr, Milos Stanojevic, Mark Steedman and Shay B. Cohen

**[Social Media]**

*Multi-Modal Sarcasm Detection in Twitter with Hierarchical Fusion Model*  
Yitao Cai, Huiyu Cai and Xiaojun Wan

*Topic-Aware Neural Keyphrase Generation for Social Media Language*  
Yue Wang, Jing Li, Hou Pong Chan, Irwin King, Michael R. Lyu and Shuming Shi

*#YouToo? Detection of Personal Recollections of Sexual Harassment on Social Media*  
Arijit Ghosh Chowdhury, Ramit Sawhney, Rajiv Ratn Shah and Debanjan Mahata

*Multi-task Pairwise Neural Ranking for Hashtag Segmentation*  
Mounica Maddela, Wei Xu and Daniel Preotiu-Pietro

**Monday, July 29, 2019 (continued)**

*Entity-Centric Contextual Affective Analysis*

Anjalie Field and Yulia Tsvetkov

*Sentence-Level Evidence Embedding for Claim Verification with Hierarchical Attention Networks*

Jing Ma, Wei Gao, Shafiq Joty and Kam-Fai Wong

*Predicting Human Activities from User-Generated Content*

Steven Wilson and Rada Mihalcea

*You Write like You Eat: Stylistic Variation as a Predictor of Social Stratification*

Angelo Basile, Albert Gatt and Malvina Nissim

*Encoding Social Information with Graph Convolutional Networks for Political Perspective Detection in News Media*

Chang Li and Dan Goldwasser

*Fine-Grained Spoiler Detection from Large-Scale Review Corpora*

Mengting Wan, Rishabh Misra, Ndapa Nakashole and Julian McAuley

*Celebrity Profiling*

Matti Wiegmann, Benno Stein and Martin Potthast

*Dataset Creation for Ranking Constructive News Comments*

Soichiro Fujita, Hayato Kobayashi and Manabu Okumura

*Enhancing Air Quality Prediction with Social Media and Natural Language Processing*

Jyun-Yu Jiang, Xue Sun, Wei Wang and Sean Young

*Twitter Homophily: Network Based Prediction of User's Occupation*

Jiaqi Pan, Rishabh Bhardwaj, Wei Lu, Hai Leong Chieu, Xinghao Pan and Ni Yi Puay

**Tuesday, July 30, 2019**

**09:00–10:00** *Invited Talk 1: Simultaneous Translation: Recent Advances and Remaining Challenges by Liang Huang*

**10:00–10:30** *Break*

**10:30–12:10** **Session 4A: Dialogue and Generation**

10:30–10:50 *Domain Adaptive Dialog Generation via Meta Learning*  
Kun Qian and Zhou Yu

10:50–11:10 *Strategies for Structuring Story Generation*  
Angela Fan, Mike Lewis and Yann Dauphin

11:10–11:30 *Argument Generation with Retrieval, Planning, and Realization*  
Xinyu Hua, Zhe Hu and Lu Wang

11:30–11:43 *A Simple Recipe towards Reducing Hallucination in Neural Surface Realisation*  
Feng Nie, Jin-Ge Yao, Jinpeng Wang, Rong Pan and Chin-Yew Lin

11:43–11:56 *Cross-Modal Commentator: Automatic Machine Commenting Based on Cross-Modal Information*  
Pengcheng Yang, Zhihan Zhang, Fuli Luo, Lei Li, Chengyang Huang and Xu Sun

11:56–12:09 *A Working Memory Model for Task-oriented Dialog Response Generation*  
Xiuyi Chen, Jiaming Xu and Bo Xu

**Tuesday, July 30, 2019 (continued)**

**10:30–12:10 Session 4B: Question Answering 1 - Multi-Hop**

- 10:30–10:50 *Cognitive Graph for Multi-Hop Reading Comprehension at Scale*  
Ming Ding, Chang Zhou, Qibin Chen, Hongxia Yang and Jie Tang
- 10:50–11:10 *Multi-hop Reading Comprehension across Multiple Documents by Reasoning over Heterogeneous Graphs*  
Ming Tu, Guangtao Wang, Jing Huang, Yun Tang, Xiaodong He and Bowen Zhou
- 11:10–11:30 *Explore, Propose, and Assemble: An Interpretable Model for Multi-Hop Reading Comprehension*  
Yichen Jiang, Nitish Joshi, Yen-Chun Chen and Mohit Bansal
- 11:30–11:50 *Avoiding Reasoning Shortcuts: Adversarial Evaluation, Training, and Model Development for Multi-Hop QA*  
Yichen Jiang and Mohit Bansal
- 11:50–12:10 *Exploiting Explicit Paths for Multi-hop Reading Comprehension*  
Souvik Kundu, Tushar Khot, Ashish Sabharwal and Peter Clark

**10:30–12:10 Session 4C: Evaluation**

- 10:30–10:50 *Sentence Mover’s Similarity: Automatic Evaluation for Multi-Sentence Texts*  
Elizabeth Clark, Asli Celikyilmaz and Noah A. Smith
- 10:50–11:10 *Analysis of Automatic Annotation Suggestions for Hard Discourse-Level Tasks in Expert Domains*  
Claudia Schulz, Christian M. Meyer, Jan Kiesewetter, Michael Sailer, Elisabeth Bauer, Martin R. Fischer, Frank Fischer and Iryna Gurevych
- 11:10–11:30 *Deep Dominance - How to Properly Compare Deep Neural Models*  
Rotem Dror, Segev Shlomov and Roi Reichart
- 11:30–11:43 *We Need to Talk about Standard Splits*  
Kyle Gorman and Steven Bedrick
- 11:43–11:56 *Aiming beyond the Obvious: Identifying Non-Obvious Cases in Semantic Similarity Datasets*  
Nicole Peinelt, Maria Liakata and Dong Nguyen

**Tuesday, July 30, 2019 (continued)**

- 11:56–12:09 *Putting Evaluation in Context: Contextual Embeddings Improve Machine Translation Evaluation*  
Nitika Mathur, Timothy Baldwin and Trevor Cohn
- 10:30–12:10 Session 4D: Social Media 1**
- 10:30–10:50 *Joint Effects of Context and User History for Predicting Online Conversation Re-entries*  
Xingshan Zeng, Jing Li, Lu Wang and Kam-Fai Wong
- 10:50–11:10 *CONAN - COunter NARRatives through Nichesourcing: a Multilingual Dataset of Responses to Fight Online Hate Speech*  
Yi-Ling Chung, Elizaveta Kuzmenko, Serra Sinem Tekiroglu and Marco Guerini
- 11:10–11:30 *Categorizing and Inferring the Relationship between the Text and Image of Twitter Posts*  
Alakananda Vempala and Daniel Preoțiuc-Pietro
- 11:30–11:43 *Who Sides with Whom? Towards Computational Construction of Discourse Networks for Political Debates*  
Sebastian Padó, Andre Blessing, Nico Blokker, Erenay Dayanik, Sebastian Haunss and Jonas Kuhn
- 11:43–11:56 *Analyzing Linguistic Differences between Owner and Staff Attributed Tweets*  
Daniel Preoțiuc-Pietro and Rita Devlin Marier
- 11:56–12:09 *Exploring Author Context for Detecting Intended vs Perceived Sarcasm*  
Silviu Oprea and Walid Magdy

**Tuesday, July 30, 2019 (continued)**

**10:30–12:10 Session 4E: Information Extraction and Text Mining 2**

10:30–10:50 *Open Domain Event Extraction Using Neural Latent Variable Models*

Xiao Liu, Heyan Huang and Yue Zhang

10:50–11:10 *Multi-Level Matching and Aggregation Network for Few-Shot Relation Classification*

Zhi-Xiu Ye and Zhen-Hua Ling

11:10–11:30 *Quantifying Similarity between Relations with Fact Distribution*

Weize Chen, Hao Zhu, Xu Han, Zhiyuan Liu and Maosong Sun

11:30–11:50 *Matching the Blanks: Distributional Similarity for Relation Learning*

Livio Baldini Soares, Nicholas FitzGerald, Jeffrey Ling and Tom Kwiatkowski

11:50–12:10 *Fine-Grained Temporal Relation Extraction*

Siddharth Vashishtha, Benjamin Van Durme and Aaron Steven White

**10:30–12:10 Session 4F: Machine Learning 3**

10:30–10:50 *FIESTA: Fast IdEntification of State-of-The-Art models using adaptive bandit algorithms*

Henry Moss, Andrew Moore, David Leslie and Paul Rayson

10:50–11:10 *Is Attention Interpretable?*

Sofia Serrano and Noah A. Smith

11:10–11:30 *Correlating Neural and Symbolic Representations of Language*

Grzegorz Chrupała and Afra Alishahi

11:30–11:50 *Interpretable Neural Predictions with Differentiable Binary Variables*

Joost Bastings, Wilker Aziz and Ivan Titov

11:50–12:10 *Transformer-XL: Attentive Language Models beyond a Fixed-Length Context*

Zihang Dai, Zhilin Yang, Yiming Yang, Jaime Carbonell, Quoc Le and Ruslan Salakhutdinov

Tuesday, July 30, 2019 (continued)

10:30–12:10 Poster Session 4

[Machine Translation]

*Domain Adaptation of Neural Machine Translation by Lexicon Induction*

Junjie Hu, Mengzhou Xia, Graham Neubig and Jaime Carbonell

*Reference Network for Neural Machine Translation*

Han Fu, Chenghao Liu and Jianling Sun

*Retrieving Sequential Information for Non-Autoregressive Neural Machine Translation*

Chenze Shao, Yang Feng, Jinchao Zhang, Fandong Meng, Xilin Chen and Jie Zhou

*STACL: Simultaneous Translation with Implicit Anticipation and Controllable Latency using Prefix-to-Prefix Framework*

Mingbo Ma, Liang Huang, Hao Xiong, Renjie Zheng, Kaibo Liu, Baigong Zheng, Chuanqiang Zhang, Zhongjun He, Hairong Liu, Xing Li, Hua Wu and Haifeng Wang

*Look Harder: A Neural Machine Translation Model with Hard Attention*

Sathish Reddy Indurthi, Insoo Chung and Sangha Kim

*Robust Neural Machine Translation with Joint Textual and Phonetic Embedding*

Hairong Liu, Mingbo Ma, Liang Huang, Hao Xiong and Zhongjun He

*A Simple and Effective Approach to Automatic Post-Editing with Transfer Learning*

Gonçalo M. Correia and André F. T. Martins

*Translating Translationese: A Two-Step Approach to Unsupervised Machine Translation*

Nima Pourdamghani, Nada Aldarrab, Marjan Ghazvininejad, Kevin Knight and Jonathan May

*Training Neural Machine Translation to Apply Terminology Constraints*

Georgiana Dinu, Prashant Mathur, Marcello Federico and Yaser Al-Onaizan

*Leveraging Local and Global Patterns for Self-Attention Networks*

Mingzhou Xu, Derek F. Wong, Baosong Yang, Yue Zhang and Lidia S. Chao

**Tuesday, July 30, 2019 (continued)**

*Sentence-Level Agreement for Neural Machine Translation*

Mingming Yang, Rui Wang, Kehai Chen, Masao Utiyama, Eiichiro Sumita, Min Zhang and Tiejun Zhao

*Multilingual Unsupervised NMT using Shared Encoder and Language-Specific Decoders*

Sukanta Sen, Kamal Kumar Gupta, Asif Ekbal and Pushpak Bhattacharyya

*Lattice-Based Transformer Encoder for Neural Machine Translation*

Fengshun Xiao, Jiangtong Li, Hai Zhao, Rui Wang and Kehai Chen

**[Multilinguality]**

*Multi-Source Cross-Lingual Model Transfer: Learning What to Share*

Xilun Chen, Ahmed Hassan Awadallah, Hany Hassan, Wei Wang and Claire Cardie

*Unsupervised Multilingual Word Embedding with Limited Resources using Neural Language Models*

Takashi Wada, Tomoharu Iwata and Yuji Matsumoto

*Choosing Transfer Languages for Cross-Lingual Learning*

Yu-Hsiang Lin, Chian-Yu Chen, Jean Lee, Zirui Li, Yuyan Zhang, Mengzhou Xia, Shruti Rijhwani, Junxian He, Zhisong Zhang, Xuezhe Ma, Antonios Anastasopoulos, Patrick Littell and Graham Neubig

*CogNet: A Large-Scale Cognate Database*

Khuyagbaatar Batsuren, Gabor Bella and Fausto Giunchiglia

*Neural Decipherment via Minimum-Cost Flow: From Ugaritic to Linear B*

Jiaming Luo, Yuan Cao and Regina Barzilay

*Cross-lingual Knowledge Graph Alignment via Graph Matching Neural Network*

Kun Xu, Liwei Wang, Mo Yu, Yansong Feng, Yan Song, Zhiguo Wang and Dong Yu

*Zero-Shot Cross-Lingual Abstractive Sentence Summarization through Teaching Generation and Attention*

Xiangyu Duan, Mingming Yin, Min Zhang, Boxing Chen and Weihua Luo

*Improving Low-Resource Cross-lingual Document Retrieval by Reranking with Deep Bilingual Representations*

Rui Zhang, Caitlin Westerfield, Sungrok Shim, Garrett Bingham, Alexander Fabbri, William Hu, Neha Verma and Dragomir Radev



**Tuesday, July 30, 2019 (continued)**

*Are Girls Neko or Shōjo? Cross-Lingual Alignment of Non-Isomorphic Embeddings with Iterative Normalization*

Mozhi Zhang, Keyulu Xu, Ken-ichi Kawarabayashi, Stefanie Jegelka and Jordan Boyd-Graber

*MAAM: A Morphology-Aware Alignment Model for Unsupervised Bilingual Lexicon Induction*

Pengcheng Yang, Fuli Luo, Peng Chen, Tianyu Liu and Xu Sun

*Margin-based Parallel Corpus Mining with Multilingual Sentence Embeddings*

Mikel Artetxe and Holger Schwenk

*JW300: A Wide-Coverage Parallel Corpus for Low-Resource Languages*

Željko Agić and Ivan Vulić

*Cross-Lingual Syntactic Transfer through Unsupervised Adaptation of Invertible Projections*

Junxian He, Zhisong Zhang, Taylor Berg-Kirkpatrick and Graham Neubig

*Unsupervised Joint Training of Bilingual Word Embeddings*

Benjamin Marie and Atsushi Fujita

#### **[Word-level Semantics]**

*Inferring Concept Hierarchies from Text Corpora via Hyperbolic Embeddings*

Matthew Le, Stephen Roller, Laetitia Papaxanthos, Douwe Kiela and Maximilian Nickel

*Is Word Segmentation Necessary for Deep Learning of Chinese Representations?*

Xiaoya Li, Yuxian Meng, Xiaofei Sun, Qinghong Han, Arianna Yuan and Jiwei Li

*Towards Understanding Linear Word Analogies*

Kawin Ethayarajh, David Duvenaud and Graeme Hirst

*On the Compositionality Prediction of Noun Phrases using Poincaré Embeddings*

Abhik Jana, Dima Puzyrev, Alexander Panchenko, Pawan Goyal, Chris Biemann and Animesh Mukherjee

*Robust Representation Learning of Biomedical Names*

Minh C. Phan, Aixin Sun and Yi Tay

**Tuesday, July 30, 2019 (continued)**

*Relational Word Embeddings*

Jose Camacho-Collados, Luis Espinosa Anke and Steven Schockaert

*Unraveling Antonym's Word Vectors through a Siamese-like Network*

Mathias Etcheverry and Dina Wonsever

*Incorporating Syntactic and Semantic Information in Word Embeddings using Graph Convolutional Networks*

Shikhar Vashishth, Manik Bhandari, Prateek Yadav, Piyush Rai, Chiranjib Bhattacharyya and Partha Talukdar

*Word and Document Embedding with vMF-Mixture Priors on Context Word Vectors*

Shoaib Jameel and Steven Schockaert

*Delta Embedding Learning*

Xiao Zhang, Ji Wu and Dejing Dou

*Annotation and Automatic Classification of Aspectual Categories*

Markus Egg, Helena Prepens and Will Roberts

*Putting Words in Context: LSTM Language Models and Lexical Ambiguity*

Laura Aina, Kristina Gulordava and Gemma Boleda

*Making Fast Graph-based Algorithms with Graph Metric Embeddings*

Andrey Kutuzov, Mohammad Dorgham, Oleksiy Oliynyk, Chris Biemann and Alexander Panchenko

*Embedding Imputation with Grounded Language Information*

Ziyi Yang, Chenguang Zhu, Vin Sachidananda and Eric Darve

*The Effectiveness of Simple Hybrid Systems for Hypernym Discovery*

William Held and Nizar Habash

*BERT-based Lexical Substitution*

Wangchunshu Zhou, Tao Ge, Ke Xu, Furu Wei and Ming Zhou

*Exploring Numeracy in Word Embeddings*

Aakanksha Naik, Abhilasha Ravichander, Carolyn Rose and Eduard Hovy

**Tuesday, July 30, 2019 (continued)**

**10:30–12:10 Student Research Workshop Poster Session 2**

**12:10–13:50 Lunch**

**13:50–15:30 Session 5A: Generation 1**

13:50–14:10 *[TACL] Probabilistic Verb Selection for Data-to-Text Generation*  
Dell Zhang, Jiahao Yuan, Xiaoling Wang and Adam Foster

14:10–14:30 *HighRES: Highlight-based Reference-less Evaluation of Summarization*  
Hardy Hardy, Shashi Narayan and Andreas Vlachos

14:30–14:50 *EditNTS: An Neural Programmer-Interpreter Model for Sentence Simplification through Explicit Editing*  
Yue Dong, Zichao Li, Mehdi Rezagholizadeh and Jackie Chi Kit Cheung

14:50–15:10 *Decomposable Neural Paraphrase Generation*  
Zichao Li, Xin Jiang, Lifeng Shang and Qun Liu

15:10–15:30 *Transforming Complex Sentences into a Semantic Hierarchy*  
Christina Niklaus, Matthias Cetto, André Freitas and Siegfried Handschuh

**13:50–15:30 Session 5B: Semantics**

13:50–14:10 *[TACL] No Word is an Island - A Transformation Weighting Model for Semantic Composition*  
Corina Dima, Daniël de Kok, Neele Witte and Erhard Hinrichs

14:10–14:30 *[TACL] Syntax-aware Semantic Role Labeling without Parsing*  
Rui Cai and Mirella Lapata

14:30–14:50 *Right for the Wrong Reasons: Diagnosing Syntactic Heuristics in Natural Language Inference*  
Tom McCoy, Ellie Pavlick and Tal Linzen

14:50–15:10 *Zero-Shot Entity Linking by Reading Entity Descriptions*  
Lajanugen Logeswaran, Ming-Wei Chang, Kenton Lee, Kristina Toutanova, Jacob Devlin and Honglak Lee

15:10–15:30 *[TACL] Learning Typed Entailment Graphs with Global Soft Constraints*  
Mohammad Javad Hosseini, Nathanael Chambers, Siva Reddy, Xavier R. Holt, Shay B. Cohen, Mark Johnson and Mark Steedman

**Tuesday, July 30, 2019 (continued)**

**13:50–15:30 Session 5C: Tagging, Chunking, Syntax and Parsing 2**

13:50–14:10 *[TACL] Joint Transition-Based Models for Morpho-Syntactic Parsing: Parsing Strategies for MRLs and a Case Study from Modern Hebrew*  
Amir More, Amit Seker, Victoria Basmova and Reut Tsarfaty

14:10–14:30 *Dual Adversarial Neural Transfer for Low-Resource Named Entity Recognition*  
Joey Tianyi Zhou, Hao Zhang, Di Jin, Hongyuan Zhu, Meng Fang, Rick Siow Mong Goh and Kenneth Kwok

14:30–14:50 *Scalable Syntax-Aware Language Models Using Knowledge Distillation*  
Adhiguna Kuncoro, Chris Dyer, Laura Rimell, Stephen Clark and Phil Blunsom

14:50–15:03 *An Imitation Learning Approach to Unsupervised Parsing*  
Bowen Li, Lili Mou and Frank Keller

15:03–15:16 *Women’s Syntactic Resilience and Men’s Grammatical Luck: Gender-Bias in Part-of-Speech Tagging and Dependency Parsing*  
Aparna Garimella, Carmen Banea, Dirk Hovy and Rada Mihalcea

15:16–15:29 *Multilingual Constituency Parsing with Self-Attention and Pre-Training*  
Nikita Kitaev, Steven Cao and Dan Klein

**13:50–15:30 Session 5D: Sentiment Analysis and Argument Mining 2**

13:50–14:10 *A Multilingual BPE Embedding Space for Universal Sentiment Lexicon Induction*  
Mengjie Zhao and Hinrich Schütze

14:10–14:30 *Tree Communication Models for Sentiment Analysis*  
Yuan Zhang and Yue Zhang

14:30–14:50 *Improved Sentiment Detection via Label Transfer from Monolingual to Synthetic Code-Switched Text*  
Bidisha Samanta, Niloy Ganguly and Soumen Chakrabarti

14:50–15:10 *Exploring Sequence-to-Sequence Learning in Aspect Term Extraction*  
Dehong Ma, Sujian Li, Fangzhao Wu, Xing Xie and Houfeng Wang

15:10–15:30 *Aspect Sentiment Classification Towards Question-Answering with Reinforced Bidirectional Attention Network*  
Jingjing Wang, Changlong Sun, Shoushan Li, Xiaozhong Liu, Luo Si, Min Zhang and Guodong Zhou

**Tuesday, July 30, 2019 (continued)**

**13:50–15:30 Session 5E: Visual and Multimodal Question Answering**

- 13:50–14:10 *ELIS: Long Form Question Answering*  
Angela Fan, Yacine Jernite, Ethan Perez, David Grangier, Jason Weston and Michael Auli
- 14:10–14:30 *Textbook Question Answering with Multi-modal Context Graph Understanding and Self-supervised Open-set Comprehension*  
Daesik Kim, Seonhoon Kim and Nojun Kwak
- 14:30–14:50 *Generating Question Relevant Captions to Aid Visual Question Answering*  
Jialin Wu, Zeyuan Hu and Raymond Mooney
- 14:50–15:03 *Multi-grained Attention with Object-level Grounding for Visual Question Answering*  
Pingping Huang, Jianhui Huang, Yuqing Guo, Min Qiao and Yong Zhu
- 15:03–15:16 *Psycholinguistics Meets Continual Learning: Measuring Catastrophic Forgetting in Visual Question Answering*  
Claudio Greco, Barbara Plank, Raquel Fernández and Raffaella Bernardi
- 15:16–15:29 *Improving Visual Question Answering by Referring to Generated Paragraph Captions*  
Hyoungun Kim and Mohit Bansal

**13:50–15:30 Session 5F: Multidisciplinary**

- 13:50–14:10 *Shared-Private Bilingual Word Embeddings for Neural Machine Translation*  
Xuebo Liu, Derek F. Wong, Yang Liu, Lidia S. Chao, Tong Xiao and Jingbo Zhu
- 14:10–14:30 *Literary Event Detection*  
Matthew Sims, Jong Ho Park and David Bamman
- 14:30–14:50 *Assessing the Ability of Self-Attention Networks to Learn Word Order*  
Baosong Yang, Longyue Wang, Derek F. Wong, Lidia S. Chao and Zhaopeng Tu
- 14:50–15:03 *Energy and Policy Considerations for Deep Learning in NLP*  
Emma Strubell, Ananya Ganesh and Andrew McCallum

**Tuesday, July 30, 2019 (continued)**

15:03–15:16 *What Does BERT Learn about the Structure of Language?*

Ganesh Jawahar, Benoît Sagot and Djamé Seddah

15:16–15:29 *A Just and Comprehensive Strategy for Using NLP to Address Online Abuse*

David Jurgens, Libby Hemphill and Eshwar Chandrasekharan

**13:50–15:30 Poster Session 5**

**[Dialogue and Interactive Systems]**

*Learning from Dialogue after Deployment: Feed Yourself, Chatbot!*

Braden Hancock, Antoine Bordes, Pierre-Emmanuel Mazare and Jason Weston

*Generating Responses with a Specific Emotion in Dialog*

Zhenqiao Song, Xiaoqing Zheng, Lu Liu, Mu Xu and Xuanjing Huang

*Semantically Conditioned Dialog Response Generation via Hierarchical Disentangled Self-Attention*

Wenhu Chen, Jianshu Chen, Pengda Qin, Xifeng Yan and William Yang Wang

*Incremental Learning from Scratch for Task-Oriented Dialogue Systems*

Weikang Wang, Jiajun Zhang, Qian Li, Mei-Yuh Hwang, Chengqing Zong and Zhifei Li

*ReCoSa: Detecting the Relevant Contexts with Self-Attention for Multi-turn Dialogue Generation*

Hainan Zhang, Yanyan Lan, Liang Pang, Jiafeng Guo and Xueqi Cheng

*Dialogue Natural Language Inference*

Sean Welleck, Jason Weston, Arthur Szlam and Kyunghyun Cho

*Budgeted Policy Learning for Task-Oriented Dialogue Systems*

Zhirui Zhang, Xiujun Li, Jianfeng Gao and Enhong Chen

*Comparison of Diverse Decoding Methods from Conditional Language Models*

Daphne Ippolito, Reno Kriz, Joao Sedoc, Maria Kustikova and Chris Callison-Burch

**Tuesday, July 30, 2019 (continued)**

*Retrieval-Enhanced Adversarial Training for Neural Response Generation*

Qingfu Zhu, Lei Cui, Wei-Nan Zhang, Furu Wei and Ting Liu

*Vocabulary Pyramid Network: Multi-Pass Encoding and Decoding with Multi-Level Vocabularies for Response Generation*

Cao Liu, Shizhu He, Kang Liu and Jun Zhao

*On-device Structured and Context Partitioned Projection Networks*

Sujith Ravi and Zornitsa Kozareva

*Proactive Human-Machine Conversation with Explicit Conversation Goal*

Wenquan Wu, Zhen Guo, Xiangyang Zhou, Hua Wu, Xiyuan Zhang, Rongzhong Lian and Haifeng Wang

*Learning a Matching Model with Co-teaching for Multi-turn Response Selection in Retrieval-based Dialogue Systems*

Jiazhan Feng, Chongyang Tao, Wei Wu, Yansong Feng, Dongyan Zhao and Rui Yan

*Learning to Abstract for Memory-augmented Conversational Response Generation*

Zhiliang Tian, Wei Bi, Xiaopeng Li and Nevin L. Zhang

*Are Training Samples Correlated? Learning to Generate Dialogue Responses with Multiple References*

Lisong Qiu, Juntao Li, Wei Bi, Dongyan Zhao and Rui Yan

*Pretraining Methods for Dialog Context Representation Learning*

Shikib Mehri, Evgeniia Razumovskaia, Tiancheng Zhao and Maxine Eskenazi

*A Large-Scale Corpus for Conversation Disentanglement*

Jonathan K. Kummerfeld, Sai R. Gouravajhala, Joseph J. Peper, Vignesh Athreya, Chulaka Gunasekara, Jatin Ganhotra, Siva Sankalp Patel, Lazaros C Polymenakos and Walter Lasecki

*Self-Supervised Dialogue Learning*

Jiawei Wu, Xin Wang and William Yang Wang

Tuesday, July 30, 2019 (continued)

[Linguistic Theories, Cognitive Modeling and Psycholinguistics]

*Are we there yet? Encoder-decoder neural networks as cognitive models of English past tense inflection*

Maria Corkery, Yevgen Matushevych and Sharon Goldwater

*A Spreading Activation Framework for Tracking Conceptual Complexity of Texts*

Ioana Hulpuş, Sanja Štajner and Heiner Stuckenschmidt

*End-to-End Sequential Metaphor Identification Inspired by Linguistic Theories*

Rui Mao, Chenghua Lin and Frank Guerin

*Diachronic Sense Modeling with Deep Contextualized Word Embeddings: An Ecological View*

Renfen Hu, Shen Li and Shichen Liang

*Miss Tools and Mr Fruit: Emergent Communication in Agents Learning about Object Affordances*

Diane Bouchacourt and Marco Baroni

*CNNs found to jump around more skillfully than RNNs: Compositional Generalization in Seq2seq Convolutional Networks*

Roberto Dessì and Marco Baroni

*Uncovering Probabilistic Implications in Typological Knowledge Bases*

Johannes Bjerva, Yova Kementchedjhieva, Ryan Cotterell and Isabelle Augenstein

*Is Word Segmentation Child's Play in All Languages?*

Georgia R. Loukatou, Steven Moran, Damian Blasi, Sabine Stoll and Alejandrina Cristia

*On the Distribution of Deep Clausal Embeddings: A Large Cross-linguistic Study*

Damian Blasi, Ryan Cotterell, Lawrence Wolf-Sonkin, Sabine Stoll, Balthasar Bickel and Marco Baroni

*Attention-based Conditioning Methods for External Knowledge Integration*

Katerina Margatina, Christos Baziotis and Alexandros Potamianos



Tuesday, July 30, 2019 (continued)

**[Resources and Evaluation]**

*The KnowRef Coreference Corpus: Removing Gender and Number Cues for Difficult Pronominal Anaphora Resolution*

Ali Emami, Paul Trichelair, Adam Trischler, Kaheer Suleman, Hannes Schulz and Jackie Chi Kit Cheung

*StRE: Self Attentive Edit Quality Prediction in Wikipedia*

Soumya Sarkar, Bhanu Prakash Reddy, Sandipan Sikdar and Animesh Mukherjee

*How Large Are Lions? Inducing Distributions over Quantitative Attributes*

Yanai Elazar, Abhijit Mahabal, Deepak Ramachandran, Tania Bedrax-Weiss and Dan Roth

*Fine-Grained Sentence Functions for Short-Text Conversation*

Wei Bi, Jun Gao, Xiaojiang Liu and Shuming Shi

*Give Me More Feedback II: Annotating Thesis Strength and Related Attributes in Student Essays*

Zixuan Ke, Hrishikesh Inamdar, Hui Lin and Vincent Ng

*Crowdsourcing and Validating Event-focused Emotion Corpora for German and English*

Enrica Troiano, Sebastian Padó and Roman Klinger

*Pay Attention when you Pay the Bills. A Multilingual Corpus with Dependency-based and Semantic Annotation of Collocations.*

Marcos Garcia, Marcos García Salido, Susana Sotelo, Estela Mosqueira and Margarita Alonso-Ramos

*Does it Make Sense? And Why? A Pilot Study for Sense Making and Explanation*

Cunxiang Wang, Shuailong Liang, Yue Zhang, Xiaonan Li and Tian Gao

*Large Dataset and Language Model Fun-Tuning for Humor Recognition*

Vladislav Blinov, Valeria Bolotova-Baranova and Pavel Braslavski

Tuesday, July 30, 2019 (continued)

[Machine Learning]

*Towards Language Agnostic Universal Representations*

Armen Aghajanyan, Xia Song and Saurabh Tiwary

*Leveraging Meta Information in Short Text Aggregation*

He Zhao, Lan Du, Guanfeng Liu and Wray Buntine

*Exploiting Invertible Decoders for Unsupervised Sentence Representation Learning*

Shuai Tang and Virginia R. de Sa

*Self-Attentive, Multi-Context One-Class Classification for Unsupervised Anomaly Detection on Text*

Lukas Ruff, Yury Zemlyanskiy, Robert Vandermeulen, Thomas Schnake and Marius Kloft

*Hubless Nearest Neighbor Search for Bilingual Lexicon Induction*

Jiaji Huang, Qiang Qiu and Kenneth Church

*Distant Learning for Entity Linking with Automatic Noise Detection*

Phong Le and Ivan Titov

*Learning How to Active Learn by Dreaming*

Thuy-Trang Vu, Ming Liu, Dinh Phung and Gholamreza Haffari

*Few-Shot Representation Learning for Out-Of-Vocabulary Words*

Ziniu Hu, Ting Chen, Kai-Wei Chang and Yizhou Sun

*Neural Temporality Adaptation for Document Classification: Diachronic Word Embeddings and Domain Adaptation Models*

Xiaolei Huang and Michael J. Paul

*Learning Transferable Feature Representations Using Neural Networks*

Himanshu Sharad Bhatt, Shourya Roy, Arun Rajkumar and Sriranjani Ramakrishnan

*Bayes Test of Precision, Recall, and F1 Measure for Comparison of Two Natural Language Processing Models*

Ruibo Wang and Jihong Li

**Tuesday, July 30, 2019 (continued)**

*TIGS: An Inference Algorithm for Text Infilling with Gradient Search*

Dayiheng Liu, Jie Fu, Pengfei Liu and Jiancheng Lv

*Keeping Notes: Conditional Natural Language Generation with a Scratchpad Encoder*

Ryan Benmalek, Madian Khabza, Suma Desu, Claire Cardie and Michele Banko

**13:50–15:30** **Demo Session 2**

**15:30–16:00** *Break*

**16:00–17:20** *Lifetime Achievement Award +Talk and Test of Time Awards*

**17:20–17:30** *Short Break*

**17:30–19:00** *ACL Business Meeting*

**19:00–19:15** *Break*

**19:15–late** *Social Event*

Wednesday, July 31, 2019

**09:00–10:00** *Invited Talk 2: Loquentes Machinis: Technology, Applications, and Ethics of Conversational Systems by Pascale Fung*

**10:00–10:30** *Break*

**10:30–12:10** **Session 6A: Discourse and Pragmatics**

10:30–10:50 *Using Automatically Extracted Minimum Spans to Disentangle Coreference Evaluation from Boundary Detection*

Nafise Sadat Moosavi, Leo Born, Massimo Poesio and Michael Strube

10:50–11:10 *Revisiting Joint Modeling of Cross-document Entity and Event Coreference Resolution*

Shany Barhom, Vered Shwartz, Alon Eirew, Michael Bugert, Nils Reimers and Ido Dagan

11:10–11:30 *A Unified Linear-Time Framework for Sentence-Level Discourse Parsing*

Xiang Lin, Shafiq Joty, Prathyusha Jwalapuram and M Saiful Bari

11:30–11:43 *Employing the Correspondence of Relations and Connectives to Identify Implicit Discourse Relations via Label Embeddings*

Linh The Nguyen, Linh Van Ngo, Khoat Than and Thien Huu Nguyen

11:43–11:56 *Do You Know That Florence Is Packed with Visitors? Evaluating State-of-the-art Models of Speaker Commitment*

Nanjiang Jiang and Marie-Catherine de Marneffe

11:56–12:09 *Multi-Relational Script Learning for Discourse Relations*

I-Ta Lee and Dan Goldwasser

Wednesday, July 31, 2019 (continued)

**10:30–12:10 Session 6B: Question Answering 2**

10:30–10:50 *Open-Domain Why-Question Answering with Adversarial Learning to Encode Answer Texts*

Jong-Hoon Oh, Kazuma Kadowaki, Julien Kloetzer, Ryu Iida and Kentaro Torisawa

10:50–11:10 *Learning to Ask Unanswerable Questions for Machine Reading Comprehension*

Haichao Zhu, Li Dong, Furu Wei, Wenhui Wang, Bing Qin and Ting Liu

11:10–11:30 *[TACL] Natural Questions: a Benchmark for Question Answering Research*

Tom Kwiatkowski, Jennimaria Palomaki, Olivia Redfield, Michael Collins, Ankur Parikh, Chris Alberti, Danielle Epstein, Illia Polosukhin, Matthew Kelcey, Jacob Devlin, Kenton Lee, Kristina N. Toutanova, Llion Jones, Ming-Wei Chang, Andrew Dai, Jakob Uszkoreit, Quoc Le and Slav Petrov

11:30–11:43 *Compositional Questions Do Not Necessitate Multi-hop Reasoning*

Sewon Min, Eric Wallace, Sameer Singh, Matt Gardner, Hannaneh Hajishirzi and Luke Zettlemoyer

11:43–11:56 *Improving Question Answering over Incomplete KBs with Knowledge-Aware Reader*

Wenhan Xiong, Mo Yu, Shiyu Chang, Xiaoxiao Guo and William Yang Wang

11:56–12:09 *AdaNSP: Uncertainty-driven Adaptive Decoding in Neural Semantic Parsing*

Xiang Zhang, Shizhu He, Kang Liu and Jun Zhao

**10:30–12:10 Session 6C: Applications 2**

10:30–10:50 *The Language of Legal and Illegal Activity on the Darknet*

Leshem Choshen, Dan Eldad, Daniel Hershcovich, Elicor Sulem and Omri Abend

10:50–11:10 *Eliciting Knowledge from Experts: Automatic Transcript Parsing for Cognitive Task Analysis*

Junyi Du, He Jiang, Jiaming Shen and Xiang Ren

11:10–11:30 *Course Concept Expansion in MOOCs with External Knowledge and Interactive Game*

Jifan Yu, Chenyu Wang, Gan Luo, Lei Hou, Juanzi Li, Zhiyuan Liu and Jie Tang

11:30–11:43 *Towards Near-imperceptible Steganographic Text*

Falcon Dai and Zheng Cai

**Wednesday, July 31, 2019 (continued)**

11:43–11:56 *Inter-sentence Relation Extraction with Document-level Graph Convolutional Neural Network*

Sunil Kumar Sahu, Fenia Christopoulou, Makoto Miwa and Sophia Ananiadou

11:56–12:09 *Neural Legal Judgment Prediction in English*

Ilias Chalkidis, Ion Androutsopoulos and Nikolaos Aletras

**10:30–12:10 Session 6D: Machine Translation 3**

10:30–10:50 *Robust Neural Machine Translation with Doubly Adversarial Inputs*

Yong Cheng, Lu Jiang and Wolfgang Macherey

10:50–11:10 *Bridging the Gap between Training and Inference for Neural Machine Translation*

Wen Zhang, Yang Feng, Fandong Meng, Di You and Qun Liu

11:10–11:30 *[TACL] Integrating Weakly Supervised Word Sense Disambiguation into Neural Machine Translation*

Xiao Pu, Nikolaos Pappas, James Henderson and Andrei Popescu-Belis

11:30–11:50 *[TACL] Synchronous Bidirectional Neural Machine Translation*

Long Zhou, Jiajun Zhang and Chengqing Zong

11:50–12:10 *Beyond BLEU: Training Neural Machine Translation with Semantic Similarity*

John Wieting, Taylor Berg-Kirkpatrick, Kevin Gimpel and Graham Neubig

**10:30–12:10 Session 6E: Information Extraction and Text Mining 3**

10:30–10:50 *AutoML Strategy Based on Grammatical Evolution: A Case Study about Knowledge Discovery from Text*

Suilan Estevez-Velarde, Yoan Gutiérrez, Andrés Montoyo and Yudivián Almeida-Cruz

10:50–11:10 *Distilling Discrimination and Generalization Knowledge for Event Detection via Delta-Representation Learning*

Yaojie Lu, Hongyu Lin, Xianpei Han and Le Sun

11:10–11:30 *Chinese Relation Extraction with Multi-Grained Information and External Linguistic Knowledge*

Ziran Li, Ning Ding, Zhiyuan Liu, Haitao Zheng and Ying Shen

**Wednesday, July 31, 2019 (continued)**

- 11:30–11:43 *A2N: Attending to Neighbors for Knowledge Graph Inference*  
Trapit Bansal, Da-Cheng Juan, Sujith Ravi and Andrew McCallum
- 11:43–11:56 *Graph based Neural Networks for Event Factuality Prediction using Syntactic and Semantic Structures*  
Amir Pouran Ben Veysseh, Thien Huu Nguyen and Dejing Dou
- 11:56–12:09 *Embedding Time Expressions for Deep Temporal Ordering Models*  
Tanya Goyal and Greg Durrett

**10:30–12:10 Session 6F: Machine Learning 4**

- 10:30–10:50 *Episodic Memory Reader: Learning What to Remember for Question Answering from Streaming Data*  
Moonsu Han, Minki Kang, Hyunwoo Jung and Sung Ju Hwang
- 10:50–11:10 *Selection Bias Explorations and Debias Methods for Natural Language Sentence Matching Datasets*  
Guanhua Zhang, Bing Bai, Jian Liang, Kun Bai, Shiyu Chang, Mo Yu, Conghui Zhu and Tiejun Zhao
- 11:10–11:30 *Real-Time Open-Domain Question Answering with Dense-Sparse Phrase Index*  
Minjoon Seo, Jinhyuk Lee, Tom Kwiatkowski, Ankur Parikh, Ali Farhadi and Hananeh Hajishirzi
- 11:30–11:50 *Language Modeling with Shared Grammar*  
Yuyu Zhang and Le Song
- 11:50–12:10 *[TACL] Densely Connected Graph Convolutional Networks for Graph-to-Sequence Learning*  
Zhijiang Guo, Yan Zhang, Zhiyang Teng and Wei Lu

**10:30–12:10 Poster Session 6**

**[Sentence-level semantics]**

*[TACL] Exploring Neural Methods for Parsing Discourse Representation Structures*  
Rik van Noord, Lasha Abzianidze, Antonio Toral and Johan Bos

*Zero-Shot Semantic Parsing for Instructions*  
Ofar Givoli and Roi Reichart

Wednesday, July 31, 2019 (continued)

*Can You Tell Me How to Get Past Sesame Street? Sentence-Level Pretraining Beyond Language Modeling*

Alex Wang, Jan Hula, Patrick Xia, Raghavendra Pappagari, R. Thomas McCoy, Roma Patel, Najoung Kim, Ian Tenney, Yinghui Huang, Katherin Yu, Shuning Jin, Berlin Chen, Benjamin Van Durme, Edouard Grave, Ellie Pavlick and Samuel R. Bowman

*Complex Question Decomposition for Semantic Parsing*

Haoyu Zhang, Jingjing Cai, Jianjun Xu and Ji Wang

*Multi-Task Deep Neural Networks for Natural Language Understanding*

Xiaodong Liu, Pengcheng He, Weizhu Chen and Jianfeng Gao

*DisSent: Learning Sentence Representations from Explicit Discourse Relations*

Allen Nie, Erin Bennett and Noah Goodman

*SParC: Cross-Domain Semantic Parsing in Context*

Tao Yu, Rui Zhang, Michihiro Yasunaga, Yi Chern Tan, Xi Victoria Lin, Suyi Li, Heyang Er, Irene Li, Bo Pang, Tao Chen, Emily Ji, Shreya Dixit, David Proctor, Sungrok Shim, Jonathan Kraft, Vincent Zhang, Caiming Xiong, Richard Socher and Dragomir Radev

*Towards Complex Text-to-SQL in Cross-Domain Database with Intermediate Representation*

Jiaqi Guo, Zecheng Zhan, Yan Gao, Yan Xiao, Jian-Guang Lou, Ting Liu and Dongmei Zhang

*EigenSent: Spectral sentence embeddings using higher-order Dynamic Mode Decomposition*

Subhradeep Kayal and George Tsatsaronis

*SemBleu: A Robust Metric for AMR Parsing Evaluation*

Linfeng Song and Daniel Gildea

*Reranking for Neural Semantic Parsing*

Pengcheng Yin and Graham Neubig

*Representing Schema Structure with Graph Neural Networks for Text-to-SQL Parsing*

Ben Bogin, Jonathan Berant and Matt Gardner

*Human vs. Muppet: A Conservative Estimate of Human Performance on the GLUE Benchmark*

Nikita Nangia and Samuel R. Bowman



Wednesday, July 31, 2019 (continued)

*Compositional Semantic Parsing across Graphbanks*

Matthias Lindemann, Jonas Groschwitz and Alexander Koller

*Rewarding Smatch: Transition-Based AMR Parsing with Reinforcement Learning*

Tahira Naseem, Abhishek Shah, Hui Wan, Radu Florian, Salim Roukos and Miguel Ballesteros

*BERT Rediscovered the Classical NLP Pipeline*

Ian Tenney, Dipanjan Das and Ellie Pavlick

*Simple and Effective Paraphrastic Similarity from Parallel Translations*

John Wieting, Kevin Gimpel, Graham Neubig and Taylor Berg-Kirkpatrick

*Second-Order Semantic Dependency Parsing with End-to-End Neural Networks*

Xinyu Wang, Jingxian Huang and Kewei Tu

**[Sentiment Analysis and Argument Mining]**

*Towards Multimodal Sarcasm Detection (An *\_Obviously\_* Perfect Paper)*

Santiago Castro, Devamanyu Hazarika, Verónica Pérez-Rosas, Roger Zimmermann, Rada Mihalcea and Soujanya Poria

*Determining Relative Argument Specificity and Stance for Complex Argumentative Structures*

Esin Durmus, Faisal Ladhak and Claire Cardie

*Latent Variable Sentiment Grammar*

Liwen Zhang, Kewei Tu and Yue Zhang

*An Investigation of Transfer Learning-Based Sentiment Analysis in Japanese*

Enkhbold Bataa and Joshua Wu

*Probing Neural Network Comprehension of Natural Language Arguments*

Timothy Niven and Hung-Yu Kao

*Recognising Agreement and Disagreement between Stances with Reason Comparing Networks*

Chang Xu, Cecile Paris, Surya Nepal and Ross Sparks

*Toward Comprehensive Understanding of a Sentiment Based on Human Motives*

Naoki Otani and Eduard Hovy

*Context-aware Embedding for Targeted Aspect-based Sentiment Analysis*

Bin Liang, Jiachen Du, Ruifeng Xu, Binyang Li and Hejiao Huang

Wednesday, July 31, 2019 (continued)

*Yes, we can! Mining Arguments in 50 Years of US Presidential Campaign Debates*  
Shohreh Haddadan, Elena Cabrio and Serena Villata

*An Empirical Study of Span Representations in Argumentation Structure Parsing*  
Tatsuki Kuribayashi, Hiroki Ouchi, Naoya Inoue, Paul Reisert, Toshinori Miyoshi,  
Jun Suzuki and Kentaro Inui

**[Textual Inference and Other Areas of Semantics]**

*Simple and Effective Text Matching with Richer Alignment Features*  
Runqi Yang, Jianhai Zhang, Xing Gao, Feng Ji and Haiqing Chen

*Learning Attention-based Embeddings for Relation Prediction in Knowledge Graphs*  
Deepak Nathani, Jatin Chauhan, Charu Sharma and Manohar Kaul

*Neural Network Alignment for Sentential Paraphrases*  
Jessica Ouyang and Kathy McKeown

*Duality of Link Prediction and Entailment Graph Induction*  
Mohammad Javad Hosseini, Shay B. Cohen, Mark Johnson and Mark Steedman

*A Cross-Sentence Latent Variable Model for Semi-Supervised Text Sequence Matching*  
Jihun Choi, Taeuk Kim and Sang-goo Lee

*COMET: Commonsense Transformers for Automatic Knowledge Graph Construction*  
Antoine Bosselut, Hannah Rashkin, Maarten Sap, Chaitanya Malaviya, Asli Celikyilmaz and Yejin Choi

*Detecting Subevents using Discourse and Narrative Features*  
Mohammed Aldawsari and Mark Finlayson

*HellaSwag: Can a Machine Really Finish Your Sentence?*  
Rowan Zellers, Ari Holtzman, Yonatan Bisk, Ali Farhadi and Yejin Choi

*Unified Semantic Parsing with Weak Supervision*  
Priyanka Agrawal, Ayushi Dalmia, Parag Jain, Abhishek Bansal, Ashish Mittal and  
Karthik Sankaranarayanan

*Every Child Should Have Parents: A Taxonomy Refinement Algorithm Based on Hyperbolic Term Embeddings*  
Rami Aly, Shantanu Acharya, Alexander Ossa, Arne Köhn, Chris Biemann and  
Alexander Panchenko

**Wednesday, July 31, 2019 (continued)**

*Learning to Rank for Plausible Plausibility*

Zhongyang Li, Tongfei Chen and Benjamin Van Durme

*Generalized Tuning of Distributional Word Vectors for Monolingual and Cross-Lingual Lexical Entailment*

Goran Glavaš and Ivan Vulić

*Attention Is (not) All You Need for Commonsense Reasoning*

Tassilo Klein and Moin Nabi

*A Surprisingly Robust Trick for the Winograd Schema Challenge*

Vid Kocijan, Ana-Maria Cretu, Oana-Maria Camburu, Yordan Yordanov and Thomas Lukasiewicz

**10:30–12:10 Student Research Workshop Poster Session 3**

**12:10–13:50 Lunch**

**13:50–15:30 Session 7A: Generation 2**

13:50–14:10 *Coherent Comments Generation for Chinese Articles with a Graph-to-Sequence Model*

Wei Li, Jingjing Xu, Yancheng He, ShengLi Yan, Yunfang Wu and Xu Sun

14:10–14:30 *Interconnected Question Generation with Coreference Alignment and Conversation Flow Modeling*

Yifan Gao, Piji Li, Irwin King and Michael R. Lyu

14:30–14:50 *Cross-Lingual Training for Automatic Question Generation*

Vishwajeet Kumar, Nitish Joshi, Arijit Mukherjee, Ganesh Ramakrishnan and Preethi Jyothi

14:50–15:10 *A Hierarchical Reinforced Sequence Operation Method for Unsupervised Text Style Transfer*

Chen Wu, Xuancheng Ren, Fuli Luo and Xu Sun

15:10–15:30 *Handling Divergent Reference Texts when Evaluating Table-to-Text Generation*

Bhuwan Dhingra, Manaal Faruqui, Ankur Parikh, Ming-Wei Chang, Dipanjan Das and William Cohen

Wednesday, July 31, 2019 (continued)

**13:50–15:30 Session 7B: Question Answering 3**

- 13:50–14:10 *Unsupervised Question Answering by Cloze Translation*  
Patrick Lewis, Ludovic Denoyer and Sebastian Riedel
- 14:10–14:30 *MultiQA: An Empirical Investigation of Generalization and Transfer in Reading Comprehension*  
Alon Talmor and Jonathan Berant
- 14:30–14:50 *Simple and Effective Curriculum Pointer-Generator Networks for Reading Comprehension over Long Narratives*  
Yi Tay, Shuohang Wang, Anh Tuan Luu, Jie Fu, Minh C. Phan, Xingdi Yuan, Jinfeng Rao, Siu Cheung Hui and Aston Zhang
- 14:50–15:10 *Explain Yourself! Leveraging Language Models for Commonsense Reasoning*  
Nazneen Fatema Rajani, Bryan McCann, Caiming Xiong and Richard Socher
- 15:10–15:30 *Interpretable Question Answering on Knowledge Bases and Text*  
Alona Sydorova, Nina Poerner and Benjamin Roth

**13:50–15:30 Session 7C: Multilinguality**

- 13:50–14:10 *A Resource-Free Evaluation Metric for Cross-Lingual Word Embeddings Based on Graph Modularity*  
Yoshinari Fujinuma, Jordan Boyd-Graber and Michael J. Paul
- 14:10–14:30 *Multilingual and Cross-Lingual Graded Lexical Entailment*  
Ivan Vulić, Simone Paolo Ponzetto and Goran Glavaš
- 14:30–14:50 *What Kind of Language Is Hard to Language-Model?*  
Sebastian J. Mielke, Ryan Cotterell, Kyle Gorman, Brian Roark and Jason Eisner
- 14:50–15:03 *Analyzing the Limitations of Cross-lingual Word Embedding Mappings*  
Aitor Ormazabal, Mikel Artetxe, Gorka Labaka, Aitor Soroa and Eneko Agirre
- 15:03–15:16 *How Multilingual is Multilingual BERT?*  
Telmo Pires, Eva Schlinger and Dan Garrette

**Wednesday, July 31, 2019 (continued)**

- 15:16–15:29 *Bilingual Lexicon Induction through Unsupervised Machine Translation*  
Mikel Artetxe, Gorka Labaka and Eneko Agirre
- 13:50–15:30 Session 7D: Social Media 2**
- 13:50–14:10 *[TACL] What You Say and How You Say it: Joint Modeling of Topics and Discourse in Microblog Conversations*  
Jichuan Zeng, Jing Li, Yulan He, Cuiyun Gao, Michael R. Lyu and Irwin King
- 14:10–14:30 *Automatically Identifying Complaints in Social Media*  
Daniel Preoțiuc-Pietro, Mihaela Gaman and Nikolaos Aletras
- 14:30–14:50 *TWEETQA: A Social Media Focused Question Answering Dataset*  
Wenhan Xiong, Jiawei Wu, Hong Wang, Vivek Kulkarni, Mo Yu, Shiyu Chang, Xiaoxiao Guo and William Yang Wang
- 14:50–15:10 *Asking the Crowd: Question Analysis, Evaluation and Generation for Open Discussion on Online Forums*  
Zi Chai, Xinyu Xing, Xiaojun Wan and Bo Huang
- 15:10–15:30 *Tree LSTMs with Convolution Units to Predict Stance and Rumor Veracity in Social Media Conversations*  
Sumeet Kumar and Kathleen Carley
- 13:50–15:30 Session 7E: Summarization 2**
- 13:50–14:10 *HIBERT: Document Level Pre-training of Hierarchical Bidirectional Transformers for Document Summarization*  
Xingxing Zhang, Furu Wei and Ming Zhou
- 14:10–14:30 *Hierarchical Transformers for Multi-Document Summarization*  
Yang Liu and Mirella Lapata
- 14:30–14:50 *Abstractive Text Summarization Based on Deep Learning and Semantic Content Generalization*  
Panagiotis Kouris, Georgios Alexandridis and Andreas Stafylopatis
- 14:50–15:03 *Studying Summarization Evaluation Metrics in the Appropriate Scoring Range*  
Maxime Peyrard
- 15:03–15:16 *Simple Unsupervised Summarization by Contextual Matching*  
Jiawei Zhou and Alexander Rush

**Wednesday, July 31, 2019 (continued)**

15:16–15:29 *Generating Summaries with Topic Templates and Structured Convolutional Decoders*  
Laura Perez-Beltrachini, Yang Liu and Mirella Lapata

**13:50–15:30 Session 7F: Linguistic Theories, Cognitive Modeling and Psycholinguistics**

13:50–14:10 *Morphological Irregularity Correlates with Frequency*  
Shijie Wu, Ryan Cotterell and Timothy O’Donnell

14:10–14:30 *Like a Baby: Visually Situated Neural Language Acquisition*  
Alexander Ororbia, Ankur Mali, Matthew Kelly and David Reitter

14:30–14:50 *Relating Simple Sentence Representations in Deep Neural Networks and the Brain*  
Sharmistha Jat, Hao Tang, Partha Talukdar and Tom Mitchell

14:50–15:10 *Modeling Affirmative and Negated Action Processing in the Brain with Lexical and Compositional Semantic Models*  
Vesna Djokic, Jean Maillard, Luana Bulat and Ekaterina Shutova

15:10–15:30 *Word-order Biases in Deep-agent Emergent Communication*  
Rahma Chaabouni, Eugene Kharitonov, Alessandro Lazaric, Emmanuel Dupoux and Marco Baroni

**13:50–15:30 Poster Session 7**

Wednesday, July 31, 2019 (continued)

**[Information Extraction and Text Mining]**

*NNE: A Dataset for Nested Named Entity Recognition in English Newswire*

Nicky Ringland, Xiang Dai, Ben Hachey, Sarvnaz Karimi, Cecile Paris and James R. Curran

*Sequence-to-Nuggets: Nested Entity Mention Detection via Anchor-Region Networks*

Hongyu Lin, Yaojie Lu, Xianpei Han and Le Sun

*Improving Textual Network Embedding with Global Attention via Optimal Transport*

Liqun Chen, Guoyin Wang, Chenyang Tao, Dinghan Shen, Pengyu Cheng, Xinyuan Zhang, Wenlin Wang, Yizhe Zhang and Lawrence Carin

*Identification of Tasks, Datasets, Evaluation Metrics, and Numeric Scores for Scientific Leaderboards Construction*

Yufang Hou, Charles Jochim, Martin Gleize, Francesca Bonin and Debasis Ganguly

*Scaling up Open Tagging from Tens to Thousands: Comprehension Empowered Attribute Value Extraction from Product Title*

Huimin Xu, Wenting Wang, Xin Mao, Xinyu Jiang and Man Lan

*Incorporating Linguistic Constraints into Keyphrase Generation*

Jing Zhao and Yuxiang Zhang

*A Unified Multi-task Adversarial Learning Framework for Pharmacovigilance Mining*

Shweta Yadav, Asif Ekbal, Sriparna Saha and Pushpak Bhattacharyya

*Quantity Tagger: A Latent-Variable Sequence Labeling Approach to Solving Addition-Subtraction Word Problems*

Yanyan Zou and Wei Lu

*A Deep Reinforced Sequence-to-Set Model for Multi-Label Classification*

Pengcheng Yang, Fuli Luo, Shuming Ma, Junyang Lin and Xu Sun

*Joint Slot Filling and Intent Detection via Capsule Neural Networks*

Chenwei Zhang, Yaliang Li, Nan Du, Wei Fan and Philip Yu

*Neural Aspect and Opinion Term Extraction with Mined Rules as Weak Supervision*

Hongliang Dai and Yangqiu Song

Wednesday, July 31, 2019 (continued)

*Cost-sensitive Regularization for Label Confusion-aware Event Detection*

Hongyu Lin, Yaojie Lu, Xianpei Han and Le Sun

*Exploring Pre-trained Language Models for Event Extraction and Generation*

Sen Yang, Dawei Feng, Linbo Qiao, Zhigang Kan and Dongsheng Li

*Improving Open Information Extraction via Iterative Rank-Aware Learning*

Zhengbao Jiang, Pengcheng Yin and Graham Neubig

*Towards Improving Neural Named Entity Recognition with Gazetteers*

Tianyu Liu, Jin-Ge Yao and Chin-Yew Lin

*Span-Level Model for Relation Extraction*

Kalpit Dixit and Yaser Al-Onaizan

**[Tagging, Chunking, Syntax and Parsing]**

*Enhancing Unsupervised Generative Dependency Parser with Contextual Information*

Wenjuan Han, Yong Jiang and Kewei Tu

*Neural Architectures for Nested NER through Linearization*

Jana Straková, Milan Straka and Jan Hajic

*Online Infix Probability Computation for Probabilistic Finite Automata*

Marco Cognetta, Yo-Sub Han and Soon Chan Kwon

*How to Best Use Syntax in Semantic Role Labelling*

Yufei Wang, Mark Johnson, Stephen Wan, Yifang Sun and Wei Wang

*PTB Graph Parsing with Tree Approximation*

Yoshihide Kato and Shigeki Matsubara

*Sequence Labeling Parsing by Learning across Representations*

Michalina Strzyz, David Vilares and Carlos Gómez-Rodríguez



Wednesday, July 31, 2019 (continued)

*A Prism Module for Semantic Disentanglement in Name Entity Recognition*

Kun Liu, Shen Li, Daqi Zheng, Zhengdong Lu, Sheng Gao and Si Li

*Label-Agnostic Sequence Labeling by Copying Nearest Neighbors*

Sam Wiseman and Karl Stratos

**[Dialogue and Interactive Systems]**

*Towards Empathetic Open-domain Conversation Models: A New Benchmark and Dataset*

Hannah Rashkin, Eric Michael Smith, Margaret Li and Y-Lan Boureau

*Know More about Each Other: Evolving Dialogue Strategy via Compound Assessment*

Siqi Bao, Huang He, Fan Wang, Rongzhong Lian and Hua Wu

*Training Neural Response Selection for Task-Oriented Dialogue Systems*

Matthew Henderson, Ivan Vulić, Daniela Gerz, Iñigo Casanueva, Paweł Budzianowski, Sam Coope, Georgios Spithourakis, Tsung-Hsien Wen, Nikola Mrkšić and Pei-Hao Su

*Collaborative Dialogue in Minecraft*

Anjali Narayan-Chen, Prashant Jayannavar and Julia Hockenmaier

*Neural Response Generation with Meta-words*

Can Xu, Wei Wu, Chongyang Tao, Huang Hu, Matt Schuerman and Ying Wang

*Conversing by Reading: Contentful Neural Conversation with On-demand Machine Reading*

Lianhui Qin, Michel Galley, Chris Brockett, Xiaodong Liu, Xiang Gao, Bill Dolan, Yejin Choi and Jianfeng Gao

*Ordinal and Attribute Aware Response Generation in a Multimodal Dialogue System*

Hardik Chauhan, Mauajama Firdaus, Asif Ekbal and Pushpak Bhattacharyya

*Memory Consolidation for Contextual Spoken Language Understanding with Dialogue Logistic Inference*

He Bai, Yu Zhou, Jiajun Zhang and Chengqing Zong

*Personalizing Dialogue Agents via Meta-Learning*

Andrea Madotto, Zhaojiang Lin, Chien-Sheng Wu and Pascale Fung

Wednesday, July 31, 2019 (continued)

*Reading Turn by Turn: Hierarchical Attention Architecture for Spoken Dialogue Comprehension*

Zhengyuan Liu and Nancy Chen

*A Novel Bi-directional Interrelated Model for Joint Intent Detection and Slot Filling*

Haihong E, Peiqing Niu, Zhongfu Chen and Meina Song

*Dual Supervised Learning for Natural Language Understanding and Generation*

Shang-Yu Su, Chao-Wei Huang and Yun-Nung Chen

*SUMBT: Slot-Utterance Matching for Universal and Scalable Belief Tracking*

Hwaran Lee, Jinsik Lee and Tae-Yoon Kim

*Robust Zero-Shot Cross-Domain Slot Filling with Example Values*

Darsh Shah, Raghav Gupta, Amir Fayazi and Dilek Hakkani-Tur

*Deep Unknown Intent Detection with Margin Loss*

Ting-En Lin and Hua Xu

*Modeling Semantic Relationship in Multi-turn Conversations with Hierarchical Latent Variables*

Lei Shen, Yang Feng and Haolan Zhan

*Rationally Reappraising ATIS-based Dialogue Systems*

Jingcheng Niu and Gerald Penn

Wednesday, July 31, 2019 (continued)

**[Machine Learning]**

*Learning Latent Trees with Stochastic Perturbations and Differentiable Dynamic Programming*

Caio Corro and Ivan Titov

*Neural-based Chinese Idiom Recommendation for Enhancing Elegance in Essay Writing*

Yuanhao Liu, Bo Pang and Bingquan Liu

*Better Exploiting Latent Variables in Text Modeling*

Canasai Kruengkrai

*Misleading Failures of Partial-input Baselines*

Shi Feng, Eric Wallace and Jordan Boyd-Graber

*Soft Contextual Data Augmentation for Neural Machine Translation*

Fei Gao, Jinhua Zhu, Lijun Wu, Yingce Xia, Tao Qin, Xueqi Cheng, Wengang Zhou and Tie-Yan Liu

*Reversing Gradients in Adversarial Domain Adaptation for Question Deduplication and Textual Entailment Tasks*

Anush Kamath, Sparsh Gupta and Vitor Carvalho

*Towards Integration of Statistical Hypothesis Tests into Deep Neural Networks*

Ahmad Aghaebrahimian and Mark Cieliebak

*Depth Growing for Neural Machine Translation*

Lijun Wu, Yiren Wang, Yingce Xia, Fei Tian, Fei Gao, Tao Qin, Jianhuang Lai and Tie-Yan Liu

*Generating Fluent Adversarial Examples for Natural Languages*

Huangzhao Zhang, Hao Zhou, Ning Miao and Lei Li

*Towards Explainable NLP: A Generative Explanation Framework for Text Classification*

Hui Liu, Qingyu Yin and William Yang Wang

*Combating Adversarial Misspellings with Robust Word Recognition*

Danish Pruthi, Bhuwan Dhingra and Zachary C. Lipton

**Wednesday, July 31, 2019 (continued)**

*An Empirical Investigation of Structured Output Modeling for Graph-based Neural Dependency Parsing*

Zhisong Zhang, Xuezhe Ma and Eduard Hovy

**13:50–15:30 Demo Session 3**

**15:30–16:00 Break**

**16:00–17:40 Session 8A: Dialogue and Interactive Systems 3 - New Tasks**

16:00–16:20 *Observing Dialogue in Therapy: Categorizing and Forecasting Behavioral Codes*

Jie Cao, Michael Tanana, Zac Imel, Eric Poitras, David Atkins and Vivek Srikumar

16:20–16:40 *Multimodal Transformer Networks for End-to-End Video-Grounded Dialogue Systems*

Hung Le, Doyen Sahoo, Nancy Chen and Steven Hoi

16:40–17:00 *Target-Guided Open-Domain Conversation*

Jianheng Tang, Tiancheng Zhao, Chenyan Xiong, Xiaodan Liang, Eric Xing and Zhiting Hu

17:00–17:20 *Persuasion for Good: Towards a Personalized Persuasive Dialogue System for Social Good*

Xuewei Wang, Weiyang Shi, Richard Kim, Yoojung Oh, Sijia Yang, Jingwen Zhang and Zhou Yu

17:20–17:40 *Improving Neural Conversational Models with Entropy-Based Data Filtering*

Richárd Csáky, Patrik Purgai and Gábor Recski

Wednesday, July 31, 2019 (continued)

**16:00–17:40 Session 8B: Word-level Semantics 2**

- 16:00–16:20 *Zero-shot Word Sense Disambiguation using Sense Definition Embeddings*  
Sawan Kumar, Sharmistha Jat, Karan Saxena and Partha Talukdar
- 16:20–16:40 *Language Modelling Makes Sense: Propagating Representations through WordNet for Full-Coverage Word Sense Disambiguation*  
Daniel Loureiro and Alípio Jorge
- 16:40–17:00 *Word2Sense: Sparse Interpretable Word Embeddings*  
Abhishek Panigrahi, Harsha Vardhan Simhadri and Chiranjib Bhattacharyya
- 17:00–17:20 *Modeling Semantic Compositionality with Sememe Knowledge*  
Fanchao Qi, Junjie Huang, Chenghao Yang, Zhiyuan Liu, Xiao Chen, Qun Liu and Maosong Sun
- 17:20–17:40 *Predicting Humorousness and Metaphor Novelty with Gaussian Process Preference Learning*  
Edwin Simpson, Erik-Lân Do Dinh, Tristan Miller and Iryna Gurevych

**16:00–17:40 Session 8C: Resources and Evaluation**

- 16:00–16:20 *Empirical Linguistic Study of Sentence Embeddings*  
Katarzyna Krasnowska-Kieraś and Alina Wróblewska
- 16:20–16:40 *Probing for Semantic Classes: Diagnosing the Meaning Content of Word Embeddings*  
Yadollah Yaghoobzadeh, Katharina Kann, T. J. Hazen, Eneko Agirre and Hinrich Schütze
- 16:40–17:00 *Deep Neural Model Inspection and Comparison via Functional Neuron Pathways*  
James Fiacco, Samridhi Choudhary and Carolyn Rose
- 17:00–17:13 *Collocation Classification with Unsupervised Relation Vectors*  
Luis Espinosa Anke, Steven Schockaert and Leo Wanner
- 17:13–17:26 *Corpus-based Check-up for Thesaurus*  
Natalia Loukachevitch

**Wednesday, July 31, 2019 (continued)**

17:26–17:39 *Confusionset-guided Pointer Networks for Chinese Spelling Check*  
Dingmin Wang, Yi Tay and Li Zhong

**16:00–17:40 Session 8D: Machine Translation 4**

16:00–16:20 *Generalized Data Augmentation for Low-Resource Translation*  
Mengzhou Xia, Xiang Kong, Antonios Anastasopoulos and Graham Neubig

16:20–16:40 *[TACL] Attention-Passing Models for Robust and Data-Efficient End-to-End Speech Translation*  
Matthias Sperber, Graham Neubig, Jan Niehues and Alex Waibel

16:40–17:00 *Analyzing Multi-Head Self-Attention: Specialized Heads Do the Heavy Lifting, the Rest Can Be Pruned*  
Elena Voita, David Talbot, Fedor Moiseev, Rico Sennrich and Ivan Titov

17:00–17:13 *Better OOV Translation with Bilingual Terminology Mining*  
Matthias Huck, Viktor Hangya and Alexander Fraser

17:13–17:26 *Simultaneous Translation with Flexible Policy via Restricted Imitation Learning*  
Baigong Zheng, Renjie Zheng, Mingbo Ma and Liang Huang

17:26–17:39 *Target Conditioned Sampling: Optimizing Data Selection for Multilingual Neural Machine Translation*  
Xinyi Wang and Graham Neubig

**16:00–17:40 Session 8E: Information Extraction and Text Mining 4**

16:00–16:20 *Adversarial Learning of Privacy-Preserving Text Representations for De-Identification of Medical Records*  
Max Friedrich, Arne Köhn, Gregor Wiedemann and Chris Biemann

16:20–16:40 *Merge and Label: A Novel Neural Network Architecture for Nested NER*  
Joseph Fisher and Andreas Vlachos

16:40–17:00 *Low-resource Deep Entity Resolution with Transfer and Active Learning*  
Jungo Kasai, Kun Qian, Sairam Gurajada, Yunyao Li and Lucian Popa

17:00–17:13 *A Semi-Markov Structured Support Vector Machine Model for High-Precision Named Entity Recognition*  
Ravneet Arora, Chen-Tse Tsai, Ketevan Tsereteli, Prabhanjan Kambadur and Yi Yang

**Wednesday, July 31, 2019 (continued)**

- 17:13–17:26 *Using Human Attention to Extract Keyphrase from Microblog Post*  
Yingyi Zhang and Chengzhi Zhang
- 17:26–17:39 *Model-Agnostic Meta-Learning for Relation Classification with Limited Supervision*  
Abiola Obamuyide and Andreas Vlachos
- 16:00–17:40 Session 8F: Machine Learning 5**
- 16:00–16:20 *Variational Pretraining for Semi-supervised Text Classification*  
Suchin Gururangan, Tam Dang, Dallas Card and Noah A. Smith
- 16:20–16:40 *Task Refinement Learning for Improved Accuracy and Stability of Unsupervised Domain Adaptation*  
Yftah Ziser and Roi Reichart
- 16:40–17:00 *Optimal Transport-based Alignment of Learned Character Representations for String Similarity*  
Derek Tam, Nicholas Monath, Ari Kobren, Aaron Traylor, Rajarshi Das and Andrew McCallum
- 17:00–17:13 *The Referential Reader: A Recurrent Entity Network for Anaphora Resolution*  
Fei Liu, Luke Zettlemoyer and Jacob Eisenstein
- 17:13–17:26 *Interpolated Spectral N-Gram Language Models*  
Ariadna Quattoni and Xavier Carreras
- 17:26–17:39 *BAM! Born-Again Multi-Task Networks for Natural Language Understanding*  
Kevin Clark, Minh-Thang Luong, Urvashi Khandelwal, Christopher D. Manning and Quoc V. Le

Wednesday, July 31, 2019 (continued)

16:00–17:40 Poster Session 8

[Generation]

*Curate and Generate: A Corpus and Method for Joint Control of Semantics and Style in Neural NLG*

Shereen Oraby, Vrindavan Harrison, Abteen Ebrahimi and Marilyn Walker

*Automated Chess Commentator Powered by Neural Chess Engine*

Hongyu Zang, Zhiwei Yu and Xiaojun Wan

*Barack's Wife Hillary: Using Knowledge Graphs for Fact-Aware Language Modeling*

Robert Logan, Nelson F. Liu, Matthew E. Peters, Matt Gardner and Sameer Singh

*Controllable Paraphrase Generation with a Syntactic Exemplar*

Mingda Chen, Qingming Tang, Sam Wiseman and Kevin Gimpel

*Towards Comprehensive Description Generation from Factual Attribute-value Tables*

Tianyu Liu, Fuli Luo, Pengcheng Yang, Wei Wu, Baobao Chang and Zhifang Sui

*Style Transformer: Unpaired Text Style Transfer without Disentangled Latent Representation*

Ning Dai, Jianze Liang, Xipeng Qiu and Xuanjing Huang

*Generating Sentences from Disentangled Syntactic and Semantic Spaces*

Yu Bao, Hao Zhou, Shujian Huang, Lei Li, Lili Mou, Olga Vechtomova, Xin-yu Dai and Jiajun Chen

*Learning to Control the Fine-grained Sentiment for Story Ending Generation*

Fuli Luo, Damai Dai, Pengcheng Yang, Tianyu Liu, Baobao Chang, Zhifang Sui and Xu Sun

*Self-Attention Architectures for Answer-Agnostic Neural Question Generation*

Thomas Scialom, Benjamin Piwowarski and Jacopo Staiano

*Unsupervised Paraphrasing without Translation*

Aurko Roy and David Grangier



Wednesday, July 31, 2019 (continued)

*Storyboarding of Recipes: Grounded Contextual Generation*

Khyathi Chandu, Eric Nyberg and Alan W Black

*Negative Lexically Constrained Decoding for Paraphrase Generation*

Tomoyuki Kajiwara

*Large-Scale Transfer Learning for Natural Language Generation*

Sergey Golovanov, Rauf Kurbanov, Sergey Nikolenko, Kyryl Truskovskiy, Alexander Tselousov and Thomas Wolf

*Automatic Grammatical Error Correction for Sequence-to-sequence Text Generation: An Empirical Study*

Tao Ge, Xingxing Zhang, Furu Wei and Ming Zhou

**[Question Answering]**

*Improving the Robustness of Question Answering Systems to Question Paraphrasing*

Wee Chung Gan and Hwee Tou Ng

*Latent Retrieval for Weakly Supervised Open Domain Question Answering*

Kenton Lee, Ming-Wei Chang and Kristina Toutanova

*Multi-hop Reading Comprehension through Question Decomposition and Rescoring*

Sewon Min, Victor Zhong, Luke Zettlemoyer and Hannaneh Hajishirzi

*Combining Knowledge Hunting and Neural Language Models to Solve the Winograd Schema Challenge*

Ashok Prakash, Arpit Sharma, Arindam Mitra and Chitta Baral

*Careful Selection of Knowledge to Solve Open Book Question Answering*

Pratyay Banerjee, Kuntal Kumar Pal, Arindam Mitra and Chitta Baral

*Learning Representation Mapping for Relation Detection in Knowledge Base Question Answering*

Peng Wu, Shujian Huang, Rongxiang Weng, Zaixiang Zheng, Jianbing Zhang, Xiaohui Yan and Jiajun Chen

Wednesday, July 31, 2019 (continued)

*Dynamically Fused Graph Network for Multi-hop Reasoning*

Lin Qiu, Yunxuan Xiao, Yanru Qu, Hao Zhou, Lei Li, Weinan Zhang and Yong Yu

*NLProlog: Reasoning with Weak Unification for Question Answering in Natural Language*

Leon Weber, Pasquale Minervini, Jannes Münchmeyer, Ulf Leser and Tim Rocktäschel

*Modeling Intra-Relation in Math Word Problems with Different Functional Multi-Head Attentions*

Jierui Li, Lei Wang, Jipeng Zhang, Yan Wang, Bing Tian Dai and Dongxiang Zhang

*Synthetic QA Corpora Generation with Roundtrip Consistency*

Chris Alberti, Daniel Andor, Emily Pitler, Jacob Devlin and Michael Collins

*Are Red Roses Red? Evaluating Consistency of Question-Answering Models*

Marco Tulio Ribeiro, Carlos Guestrin and Sameer Singh

*MC<sup>2</sup>: Multi-perspective Convolutional Cube for Conversational Machine Reading Comprehension*

Xuanyu Zhang

**[Multidisciplinary]**

*Time-Out: Temporal Referencing for Robust Modeling of Lexical Semantic Change*

Haim Dubossarsky, Simon Hengchen, Nina Tahmasebi and Dominik Schlechtweg

*Reducing Word Omission Errors in Neural Machine Translation: A Contrastive Learning Approach*

Zonghan Yang, Yong Cheng, Yang Liu and Maosong Sun

*Exploiting Sentential Context for Neural Machine Translation*

Xing Wang, Zhaopeng Tu, Longyue Wang and Shuming Shi

*Wetin dey with these comments? Modeling Sociolinguistic Factors Affecting Code-switching Behavior in Nigerian Online Discussions*

Innocent Ndubuisi-Obi, Sayan Ghosh and David Jurgens

*Accelerating Sparse Matrix Operations in Neural Networks on Graphics Processing Units*

Arturo Argueta and David Chiang

*An Automated Framework for Fast Cognate Detection and Bayesian Phylogenetic Inference in Computational Historical Linguistics*

Taraka Rama and Johann-Mattis List

Wednesday, July 31, 2019 (continued)

[Document Analysis]

*Sentence Centrality Revisited for Unsupervised Summarization*

Hao Zheng and Mirella Lapata

*Discourse Representation Parsing for Sentences and Documents*

Jiangming Liu, Shay B. Cohen and Mirella Lapata

*Inducing Document Structure for Aspect-based Summarization*

Lea Frermann and Alexandre Klementiev

*Incorporating Priors with Feature Attribution on Text Classification*

Frederick Liu and Besim Avci

*Matching Article Pairs with Graphical Decomposition and Convolutions*

Bang Liu, Di Niu, Haojie Wei, Jinghong Lin, Yancheng He, Kunfeng Lai and Yu Xu

*Hierarchical Transfer Learning for Multi-label Text Classification*

Siddhartha Banerjee, Cem Akkaya, Francisco Perez-Sorrosal and Kostas Tsioutsoulis

*Bias Analysis and Mitigation in the Evaluation of Authorship Verification*

Janek Bevendorff, Matthias Hagen, Benno Stein and Martin Potthast

*Numeracy-600K: Learning Numeracy for Detecting Exaggerated Information in Market Comments*

Chung-Chi Chen, Hen-Hsen Huang, Hiroya Takamura and Hsin-Hsi Chen

*Large-Scale Multi-Label Text Classification on EU Legislation*

Ilias Chalkidis, Emmanouil Fergadiotis, Prodromos Malakasiotis and Ion Androutsopoulos

*Why Didn't You Listen to Me? Comparing User Control of Human-in-the-Loop Topic Models*

Varun Kumar, Alison Smith-Renner, Leah Findlater, Kevin Seppi and Jordan Boyd-Graber

*Encouraging Paragraph Embeddings to Remember Sentence Identity Improves Classification*

Tu Vu and Mohit Iyyer

Wednesday, July 31, 2019 (continued)

*A Multi-Task Architecture on Relevance-based Neural Query Translation*

Sheikh Muhammad Sarwar, Hamed Bonab and James Allan

*Topic Modeling with Wasserstein Autoencoders*

Feng Nan, Ran Ding, Ramesh Nallapati and Bing Xiang

*[TACL] GILE: A Generalized Input-Label Embedding for Text Classification*

Nikolaos Pappas and James Henderson

**[Vision, Robotics, Multimodal, Grounding and Speech]**

*Dense Procedure Captioning in Narrated Instructional Videos*

Botian Shi, Lei Ji, Yaobo Liang, Nan Duan, Peng Chen, Zhendong Niu and Ming Zhou

*Latent Variable Model for Multi-modal Translation*

Iacer Calixto, Miguel Rios and Wilker Aziz

*Identifying Visible Actions in Lifestyle Vlogs*

Oana Ignat, Laura Burdick, Jia Deng and Rada Mihalcea

*A Corpus for Reasoning about Natural Language Grounded in Photographs*

Alane Suhr, Stephanie Zhou, Ally Zhang, Iris Zhang, Huajun Bai and Yoav Artzi

*Learning to Discover, Ground and Use Words with Segmental Neural Language Models*

Kazuya Kawakami, Chris Dyer and Phil Blunsom

*What Should I Ask? Using Conversationally Informative Rewards for Goal-oriented Visual Dialog.*

Pushkar Shukla, Carlos Elmadjian, Richika Sharan, Vivek Kulkarni, Matthew Turk and William Yang Wang

*Symbolic Inductive Bias for Visually Grounded Learning of Spoken Language*

Grzegorz Chrupała

*Multi-step Reasoning via Recurrent Dual Attention for Visual Dialog*

Zhe Gan, Yu Cheng, Ahmed Kholy, Linjie Li, Jingjing Liu and Jianfeng Gao

*Lattice Transformer for Speech Translation*

Pei Zhang, Niyu Ge, Boxing Chen and Kai Fan

**Wednesday, July 31, 2019 (continued)**

*Informative Image Captioning with External Sources of Information*

Sanqiang Zhao, Piyush Sharma, Tomer Levinboim and Radu Soricut

*CoDraw: Collaborative Drawing as a Testbed for Grounded Goal-driven Communication*

Jin-Hwa Kim, Nikita Kitaev, Xinlei Chen, Marcus Rohrbach, Byoung-Tak Zhang, Yuandong Tian, Dhruv Batra and Devi Parikh

*Bridging by Word: Image Grounded Vocabulary Construction for Visual Captioning*

Zhihao Fan, Zhongyu Wei, Siyuan Wang and Xuanjing Huang

*Distilling Translations with Visual Awareness*

Julia Ive, Pranava Madhyastha and Lucia Specia

*VIFIDEL: Evaluating the Visual Fidelity of Image Descriptions*

Pranava Madhyastha, Josiah Wang and Lucia Specia

*Are You Looking? Grounding to Multiple Modalities in Vision-and-Language Navigation*

Ronghang Hu, Daniel Fried, Anna Rohrbach, Dan Klein, Trevor Darrell and Kate Saenko

*Multimodal Transformer for Unaligned Multimodal Language Sequences*

Yao-Hung Hubert Tsai, Shaojie Bai, Paul Pu Liang, J. Zico Kolter, Louis-Philippe Morency and Ruslan Salakhutdinov

*Show, Describe and Conclude: On Exploiting the Structure Information of Chest X-ray Reports*

Baoyu Jing, Zeya Wang and Eric Xing

*Visual Story Post-Editing*

Ting-Yao Hsu, Chieh-Yang Huang, Yen-Chia Hsu and Ting-Hao Huang

*Multimodal Abstractive Summarization for How2 Videos*

Shruti Palaskar, Jindřich Libovický, Spandana Gella and Florian Metze

*Learning to Relate from Captions and Bounding Boxes*

Sarthak Garg, Joel Ruben Antony Moniz, Anshu Aviral and Priyatham Bollimpalli

**17:40–17:50 Short Break**

**Wednesday, July 31, 2019 (continued)**

**17:50–18:20** *Best Paper Awards and Closing Remarks*