Introduction

The ACL 2018 Workshop on Representation Learning for NLP (RepL4NLP) takes place on Friday, July 20, 2018 in Melbourne, Australia, immediately following the 56th Annual Meeting of the Association for Computational Linguistics (ACL). The workshop is generously sponsored by Facebook, Salesforce, ASAPP, DeepMind, Microsoft Research, and Naver.

RepL4NLP is organised by Isabelle Augenstein, Kris Cao, He He, Felix Hill, Spandana Gella, Jamie Kiros, Hongyuan Mei and Dipendra Misra, and advised by Kyunghyun Cho, Edward Grefenstette, Karl Moritz Hermann and Laura Rimell.

The 3rd Workshop on Representation Learning for NLP aims to continue the success of the 1st Workshop on Representation Learning for NLP, which received about 50 submissions and over 250 attendees and was the second most attended collocated event at ACL 2016 in Berlin, Germany after WMT; and the 2nd Workshop on Representation Learning for NLP at ACL 2017 in Vancouver, Canada.

The workshop has a focus on vector space models of meaning, compositionality, and the application of deep neural networks and spectral methods to NLP. It provides a forum for discussing recent advances on these topics, as well as future research directions in linguistically motivated vector-based models in NLP.
Organizers:

Isabelle Augenstein, University of Copenhagen
Kris Cao, University of Cambridge
He He, Stanford University
Felix Hill, DeepMind
Spandana Gella, University of Edinburgh
Jamie Kiros, University of Toronto
Hongyuan Mei, Johns Hopkins University
Dipendra Misra, Cornell University

Senior Advisors:

Kyunghyun Cho, NYU and FAIR
Edward Grefenstette, DeepMind
Karl Moritz Hermann, DeepMind
Laura Rimell, DeepMind

Program Committee:

Eneko Agirre, University of the Basque Country
Yoav Artzi, Cornell University
Mohit Bansal, UNC Chapel Hill
Meriem Beloucif, HKUST
Jonathan Berant, Tel-Aviv
Johannes Bjerva, University of Copenhagen
Jan Buys, Oxford University
Xilun Chen, Cornell University
Eunsol Choi, University of Washington
Heeyoul Choi, Handong Global University
Junyoung Chung, University of Montreal
Manuel Ciosici, Aarhus University
Stephen Clark, DeepMind
Marco Damonte, University of Edinburgh
Desmond Elliot, University of Edinburgh
Katrin Erk, University of Texas
Orhan Firat, Middle East Technical University
Lucie Flekova, Amazon Research
Kevin Gimpel, TTI-Chicago
Caglar Gulcehre, University of Montreal
Gholamreza Haffari, Monash University
Mohit Iyyer, AI2
Katharina Kann, LMU
Arzoo Katiyar, Cornell University
Miryam de Lhoneux, Uppsala University
Tegan Maharaj, Polytechnique Montreal
Ana Marasovic, Heidelberg, University
Yishu Miao, Oxford University
Todor Mihaylov, Heidelberg University
Pasquale Minervini, UCL
Nikita Nangia, NYU
Shashi Narayan, University of Edinburgh
Thien Huu Nguyen, NYU
Robert Östling, Stockholm University
Alexander Panchenko, University of Hamburg
Matthew Peters, AI2
Barbara Plank, University of Groningen
Marek Rei, University of Cambridge
Roi Reichart, Technion
Alan Ritter, Ohio State University
Diarmuid Ó Séaghdha, Apple
Holger Schwenk, Facebook Research
Tianze Shi, Cornell University
Vered Shwartz, Bar-Ilan University
Ashudeep Singh, Cornell University
Richard Socher, Salesforce
Mark Steedman, University of Edinburgh
Karl Stratos, Columbia University
Sam Thomson, CMU
Ivan Titov, University of Edinburgh
Shubham Toshniwal, TTIC
Andreas Vlachos, Sheffield
Pontus Stenetorp, UCL
Anders Søgaard, University of Copenhagen
Jörg Tiedemann, University of Helsinki
Chris Quirk, Microsoft Research
Lyle Ungar, University of Pennsylvania
Eva Maria Vecchi, University of Cambridge
Dirk Weissenborn, German Research Center for AI
Tsung-Hsien Wen, University of Cambridge
Yi Yang, Bloomberg LP
Helen Yannakoudakis, University of Cambridge

Invited Speaker:

Yejin Choi, University of Washington
Trevor Cohn, University of Melbourne
Margaret Mitchell, Google Research
Yoav Goldberg, Bar Ilan University
# Table of Contents

*Corpus Specificity in LSA and Word2vec: The Role of Out-of-Domain Documents*
   Edgar Altszyler, Mariano Sigman and Diego Fernandez Slezak ............................................. 1

*Hierarchical Convolutional Attention Networks for Text Classification*
   Shang Gao, Arvind Ramanathan and Georgia Tourassi .......................................................... 11

*Extrofitting: Enriching Word Representation and its Vector Space with Semantic Lexicons*
   Hwiyeol Jo and Stanley Jungkyu Choi ...................................................................................... 24

*Chat Discrimination for Intelligent Conversational Agents with a Hybrid CNN-LMTGRU Network*
   Dennis Singh Moirangthem and Minho Lee ............................................................................... 30

*Text Completion using Context-Integrated Dependency Parsing*
   Amr Rekaby Salama, Özge Alacam and Wolfgang Menzel ...................................................... 41

*Quantum-Inspired Complex Word Embedding*
   Qiuchi Li, Sagar Uprety, Benyou Wang and Dawei Song ......................................................... 50

*Natural Language Inference with Definition Embedding Considering Context On the Fly*
   Kosuke Nishida, Kyosuke Nishida, Hisako Asano and Junji Tomita ......................................... 58

*Comparison of Representations of Named Entities for Document Classification*
   Lidia Pivovarova and Roman Yangarber ................................................................................. 64

*Speeding up Context-based Sentence Representation Learning with Non-autoregressive Convolutional Decoding*
   Shuai Tang, Hailin Jin, Chen Fang, Zhaowen Wang and Virginia de Sa ................................. 69

*Connecting Supervised and Unsupervised Sentence Embeddings*
   Gil Levi ....................................................................................................................................... 79

*A Hybrid Learning Scheme for Chinese Word Embedding*
   Wenfan Chen and Weiguo Sheng ............................................................................................ 84

*Unsupervised Random Walk Sentence Embeddings: A Strong but Simple Baseline*
   Kawin Ethayarajh .................................................................................................................. 91

*Evaluating Word Embeddings in Multi-label Classification Using Fine-Grained Name Typing*
   Yadollah Yaghoobzadeh, Katharina Kann and Hinrich Schütze ............................................. 101

*A Dense Vector Representation for Open-Domain Relation Tuples*
   Ade Romadhony, Alfan Farizki Wicaksono, Ayu Purwarianti and Dwi Hendratmo Widyantoro 107

*Exploiting Common Characters in Chinese and Japanese to Learn Cross-Lingual Word Embeddings via Matrix Factorization*
   Jilei Wang, Shiyong Luo, Weiyan Shi, Tao Dai and Shu-Tao Xia ............................................. 113

*WordNet Embeddings*
   Chakaveh Saedi, António Branco, João António Rodrigues and João Silva ............................. 122

*Knowledge Graph Embedding with Numeric Attributes of Entities*
   Yanrong Wu and Zhichun Wang .............................................................................................. 132
Injecting Lexical Contrast into Word Vectors by Guiding Vector Space Specialisation
Ivan Vulić ................................................................. 137

Characters or Morphemes: How to Represent Words?
Ahmet Üstün, Murathan Kurfalı and Burcu Can ........................................ 144

Learning Hierarchical Structures On-The-Fly with a Recurrent-Recursive Model for Sequences
Athul Paul Jacob, Zhouhan Lin, Alessandro Sordoni and Yoshua Bengio ............. 154

Limitations of Cross-Lingual Learning from Image Search
Mareike Hartmann and Anders Søgaard ..................................................... 159

Learning Semantic Textual Similarity from Conversations
Yinfei Yang, Steve Yuan, Daniel Cer, Sheng-Yi Kong, Noah Constant, Petr Pilar, Heming Ge, Yun-hsuan Sung, Brian Strope and Ray Kurzweil ........................................ 164

Multilingual Seq2seq Training with Similarity Loss for Cross-Lingual Document Classification
Katherine Yu, Haoran Li and Barlas Oguz ................................................... 175

LSTMs Exploit Linguistic Attributes of Data
Nelson F. Liu, Omer Levy, Roy Schwartz, Chenhao Tan and Noah A. Smith .... 180

Learning Distributional Token Representations from Visual Features
Samuel Broscheit ................................................................. 187

Jointly Embedding Entities and Text with Distant Supervision
Denis Newman-Griffis, Albert M. Lai and Eric Fosler-Lussier ............................. 195

A Sequence-to-Sequence Model for Semantic Role Labeling
Angel Daza and Anette Frank ................................................................. 207

Predicting Concreteness and Imageability of Words Within and Across Languages via Word Embeddings
Nikola Ljubešić, Darja Fišer and Anita Peti-Stantić ........................................ 217
Workshop Program

Friday, July 20, 2018

09:30–09:45    Welcome and Opening Remarks

09:45–14:45    Keynote Session

09:45–10:30    Invited Talk 1
                Yejin Choi

10:30–11:00    Coffee Break

11:00–11:45    Invited Talk 2
                Trevor Cohn

11:45–12:30    Invited Talk 3
                Margaret Mitchell

12:30–14:00    Lunch

14:00–14:45    Invited Talk 4
                Yoav Goldberg

14:45–15:00    Outstanding Papers Spotlight Presentations
Friday, July 20, 2018 (continued)

15:00–16:30 Poster Session (including Coffee Break from 15:30-16:00) + Drinks Reception

Corpus Specificity in LSA and Word2vec: The Role of Out-of-Domain Documents
Edgar Altszyler, Mariano Sigman and Diego Fernandez Slezak

Hierarchical Convolutional Attention Networks for Text Classification
Shang Gao, Arvind Ramanathan and Georgia Tourassi

Extrofitting: Enriching Word Representation and its Vector Space with Semantic Lexicons
Hwiyeol Jo and Stanley Jungkyu Choi

Chat Discrimination for Intelligent Conversational Agents with a Hybrid CNN-LMTGRU Network
Dennis Singh Moirangthem and Minho Lee

Text Completion using Context-Integrated Dependency Parsing
Amr Rekaby Salama, Özge Alacam and Wolfgang Menzel

Quantum-Inspired Complex Word Embedding
Qiuchi Li, Sagar Uprety, Benyou Wang and Dawei Song

Natural Language Inference with Definition Embedding Considering Context On the Fly
Kosuke Nishida, Kyosuke Nishida, Hisako Asano and Junji Tomita

Comparison of Representations of Named Entities for Document Classification
Lidia Pivovarova and Roman Yangarber

Speeding up Context-based Sentence Representation Learning with Non-autoregressive Convolutional Decoding
Shuai Tang, Hailin Jin, Chen Fang, Zhaowen Wang and Virginia de Sa

Connecting Supervised and Unsupervised Sentence Embeddings
Gil Levi

A Hybrid Learning Scheme for Chinese Word Embedding
Wenfan Chen and Weiguo Sheng

x
Unsupervised Random Walk Sentence Embeddings: A Strong but Simple Baseline
Kawin Ethayarajh

Evaluating Word Embeddings in Multi-label Classification Using Fine-Grained Name Typing
Yadollah Yaghoobzadeh, Katharina Kann and Hinrich Schütze

A Dense Vector Representation for Open-Domain Relation Tuples
Ade Romadhony, Alfan Farizki Wicaksono, Ayu Purwarianti and Dwi Hendratmo Widyantoro

Exploiting Common Characters in Chinese and Japanese to Learn Cross-Lingual Word Embeddings via Matrix Factorization
Jilei Wang, Shiying Luo, Weiyuan Shi, Tao Dai and Shu-Tao Xia

WordNet Embeddings
Chakaveh Saedi, António Branco, João António Rodrigues and João Silva

Knowledge Graph Embedding with Numeric Attributes of Entities
Yanrong Wu and Zhichun Wang

Injecting Lexical Contrast into Word Vectors by Guiding Vector Space Specialisation
Ivan Vulić

Characters or Morphemes: How to Represent Words?
Ahmet Üstün, Murathan Kurfalı and Burcu Can

Learning Hierarchical Structures On-The-Fly with a Recurrent-Recursive Model for Sequences
Athul Paul Jacob, Zhouhan Lin, Alessandro Sordoni and Yoshua Bengio

Limitations of Cross-Lingual Learning from Image Search
Mareike Hartmann and Anders Søgaard

Learning Semantic Textual Similarity from Conversations
Yinfei Yang, Steve Yuan, Daniel Cer, Sheng-Yi Kong, Noah Constant, Petr Pilar, Heming Ge, Yun-hsuan Sung, Brian Strope and Ray Kurzweil

Multilingual Seq2seq Training with Similarity Loss for Cross-Lingual Document Classification
Katherine Yu, Haoran Li and Barlas Oguz
Friday, July 20, 2018 (continued)

LSTMs Exploit Linguistic Attributes of Data
Nelson F. Liu, Omer Levy, Roy Schwartz, Chenhao Tan and Noah A. Smith

Learning Distributional Token Representations from Visual Features
Samuel Broscheit

Jointly Embedding Entities and Text with Distant Supervision
Denis Newman-Griffis, Albert M. Lai and Eric Fosler-Lussier

A Sequence-to-Sequence Model for Semantic Role Labeling
Angel Daza and Anette Frank

Predicting Concreteness and Imageability of Words Within and Across Languages via Word Embeddings
Nikola Ljubešić, Darja Fišer and Anita Peti-Stantić

16:30–17:30  Panel Discussion

17:30–17:40  Closing Remarks + Best Paper Awards Announcement