NeuralMethodsSoSe18

Neural Methods for NLP

Seminarplan

date	theme	paper	contributor	materials	
19.04.	Introduction and Overview				
24.04.	no seminar		.	.	
03.05.	Syntactic Modeling; Semantic Role Labeling; Best Practices	paper			
10.05.	Relation Classification, OpenIE	paper			
17.05.	Sentence Representation Learning, Inference	paper			
24.05.	Inference and Interpretability	paper			
31.05.	no seminar				
07.06.	Coreference Resolution	paper			
14.06.	Multimodal NLP	paper			
21.06.	Knowledge Graphs, Graph Processing	paper			
28.06.	Generation and Style Transfer	paper			
05.07.	Adversarial Training	paper			
12.07.	Multi-task Learning, Transfer Learning	paper			
19.07.	Evaluation, Breaking Systems	paper			
26.07.	Wrap-up, Discussion, Course Notes, Lessons Learned				

Literatur- und Themenliste

Syntactic Modeling

- Adhiguna Kuncoro, Miguel Ballesteros, Lingpeng Kong, Chris Dyer, Graham Neubig, Noah A. Smith (2017): What Do Recurrent Neural Network Grammars Learn About Syntax?, EACL.
- Xingxing Zhang, Jianpeng Cheng & Mirella Lapata (2017): Dependency Parsing as Head Selection, EACL.
- Oriol Vinyals, Lukasz Kaiser, Terry Koo, Slav Petrov, Ilya Sutskever, Geoffrey Hinton (2015): Grammar as a Foreign Language, NIPS.

Semantic Role Labeling

- Jie Zhou and Wei Xu (2015): End-to-end Learning of Semantic Role Labeling Using Recurrent Neural Networks, ACL.
- Bishan Yang & Tom Mitchell (2017): A Joint Sequential and Relational Model for Frame-Semantic Parsing, EMNLP.
- Diego Marcheggiani & Ivan Titov (2017): Encoding Sentences with Graph Convolutional Networks for Semantic Role Labeling, EMNLP.
- Luheng He, Kenton Lee, Mike Lewis, Luke Zettlemoyer (2017): Deep Semantic Role Labeling: What Works and What's Next, ACL

Relation Classification and OpenIE

- Makoto Miwa & Mohit Bansal (2016): End-to-End Relation Extraction using LSTMs on Sequences and Tree Structures, ACL.
- Meishan Zhang, Yue Zhang & Guohong Fu (2017): End-to-End Neural Relation Extraction with Global Optimization, EMNLP.
- Sheng Zhang, Kevin Duh, Benjamin Van Durme (2017): MT/IE: Cross-lingual Open Information Extraction with Neural Sequence-to-Sequence Models, EACL.
- Lea Frermann and Gyuri Szarvas (2017) Inducing Semantic Micro-Clusters from Deep Multi-View Representations of Novels, EMNLP.

Sentence Representation Learning, Inference

- Alexis Conneau, Douwe Kiela, Holger Schwenk, Loïc Barrault and Antoine Bordes (2017): Supervised Learning of Universal Sentence Representations from Natural Language Inference Data, EMNLP.
- Allen Nie, Erin D. Bennett, Noah D. Goodman (2017) DisSent: Sentence Representation Learning from Explicit Discourse Relations, arXiv.

- Reza Ghaeini, Sadid A. Hasan, Vivek Datla, Joey Liu, Kathy Lee, Ashequl Qadir, Yuan Ling, Aaditya Prakash, Xiaoli Z. Fern and Oladimeji Farri (2018): DR-BiLSTM: Dependent Reading Bidirectional LSTM for Natural Language Inference, NAACL.

Inference & Interpretability

- Tim Rocktäschel, Sameer Singh and Sebastian Riedel (2015). Injecting Logical Background Knowledge into Embeddings for Relation Extraction, NAACL.
- Tim Rocktäschel & Sebastian Riedel (2017): End-to-End Differentiable Proving, NIPS.
- Leila Arras, Franziska Horn, Grégoire Montavon, Klaus-Robert Müller, Wojciech Samek (2017): "What is relevant in a text document?": An interpretable machine learning approach in: PLOS ONE 12(8).

Coreference Resolution

- Kenton Lee, Luheng He, Mike Lewis, & Luke Zettlemoyer 2017: End-to-end Neural Coreference Resolution, EMNLP.
- Kevin Clark & Christopher D. Manning (2016): Deep Reinforcement Learning for Mention-Ranking Coreference Models. EMNLP.
- Vincent Ng (2017): Machine Learning for Entity Coreference Resolution: A Retrospective Look at Two Decades of Research, AAAI.
- Vincent Ng (2010): Supervised Noun Phrase Coreference Research: The First Fifteen Years, ACL.
- Altaf Rahman and Vincent Ng (2009): Supervised Models for Coreference Resolution. EMNLP.

Multi-modal NLP

- Rowan Zellers & Yejin Choi (2017): Zero-Shot Activity Recognition with Verb Attribute Induction, EMNLP.
- Mark Yatskar, Luke Zettlemoyer, Ali Farhadi (2016): Situation Recognition: Visual Semantic Role Labeling for Image Understanding, 2016 IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- Mohit Iyyer, Varun Manjunatha, Anupam Guha, Yogarshi Vyas, Jordan Boyd-Graber, Hal Daume III, Larry Davis (2017): The Amazing Mysteries of the Gutter, Drawing Inferences Between Panels in Comic Book Narratives, CVPR.
- Spandana Gella and Frank Keller (2017): An Analysis of Action Recognition Datasets for Language and Vision Tasks, ACL.
- Hang Qi, Tianfu Wu, Mun Wai Lee, Song-Chun Zhu (2017): A Restricted Visual Turing Test for Deep Scene and Event Understanding
- Frermann, Cohen, Lapata (2017): Whodunnit? Crime Drama as a Case for Natural Language

Understanding,TACL.

- Amy Fire and Song-Chun Zhu (2017): Inferring Hidden Statuses and Actions in Video by Causal Reasoning, CVPR Workshop: Vision Meets Cognition
- Liang, Wei and Zhao, Yibiao and Zhu, Yixin and Zhu, Song-Chun (2016): What is where: Inferring containment relations from videos, IJCAI.
- Papasarantopoulos, N., Jiang, .H & Cohen, S. (2018): Canonical Correlation Inference for Mapping Abstract Scenes to Text. in AAAI-18

Graphs

- Alberto Garcia-Duran & Mathias Niepert (2017): Learning Graph Representations with Embedding Propagation, NIPS.
- W. Hamilton, R. Ying, J. Leskovec (2017): Inductive Representation Learning on Large Graphs. Neural Information Processing Systems (NIPS).
- Andreas Niepert, Mohamed Ahmed, Konstanti Kitzkov (2016): Learning Convolutional Neural Networks for Graphs, ICML.
- Daniel Onoro-Rubio, Mathias Niepert, Alberto Garcia-Duran, Roberto Gonzalez-Sanchez (2017): Representation Learning for Visual-Relational Knowledge Graphs, arXiv
- Thang D. Bui, Sujith Ravi, Vivek Ramavajjala (2018) (to appear): Neural Graph Learning: Training Neural Networks Using Graphs. Proceedings of 11th ACM International Conference on Web Search and Data Mining (WSDM)
- W. Hamilton, R. Ying, J. Leskovec (2017): Representation Learning on Graphs: Methods and Applications. IEEE Data Engineering Bulletin.

Generation and Style Transfer

- Li Dong; Shaohan Huang; Furu Wei; Mirella Lapata; Ming Zhou; Ke Xu (2017): Learning to Generate Product Reviews from Attributes, EACL.
- Jessica Ficler and Yoav Goldberg (2017): Controlling Linguistic Style Aspects in Neural Language Generation. EMNLP Workshop on Stylistic Variation.
- Zhenxin Fu, Xiaoye Tan, Nanyun Peng, Dongyan Zhao, Rui Yan (2018, to appear): Style Transfer in Text: Exploration and Evaluation, AAAI.

Adversarial Training

- Lianhui Qin, Zhisong Zhang, Hai Zhao, Zhiting Hu, Eric P. Xing (2017): Adversarial Connective-exploiting Networks for Implicit Discourse Relation Classification, ACL.
- Young-Bum Kim, Karl Stratos, and Dongchan Kim. (2017): Adversarial Adaptation of Synthetic or Stale Data. ACL 2017.
- Yaroslav Ganin, Evgeniya Ustinova, Hana Ajakan, Pascal Germain, Hugo Larochelle, Franc̗ois

Laviolette, Mario Marchand, and Victor Lempitsky (2016): Domain-adversarial training of neural networks. Journal of Machine Learning Research 17(59):1–35.

Transfer Learning / Multitask Learning

- Sebastian Ruder, Joachim Bingel, Isabelle Augenstein, Anders Søgaard (2018): Learning what to share between loosely related tasks, arXiv.
- S. Ruder (2017): An Overview of Multi-Task Learning in Deep Neural Networks, arXiv.
- Søgaard, Anders; Goldberg, Yoav (2016): Deep multi-task learning with low level tasks supervised at lower layers, ACL.
- S. Ruder, B. Plank (2017): Learning to select data for transfer learning with Bayesian Optimization, EMNLP.
- Émile Enguehard; Yoav Goldberg; Tal Linzen (2017): Exploring the Syntactic Abilities of RNNs with Multi-task Learning, CoNLL.

Evaluation and Breaking Systems

- Nils Reimers and Iryna Gurevych (2018): Why Comparing Single Performance Scores Does Not Allow to Draw Conclusions About Machine Learning Approaches, ArXiv.
- Nils Reimers, Iryna Gurevych (2017): Reporting Score Distributions Makes a Difference: Performance Study of LSTM-networks for Sequence Tagging, EMNLP.
- Jia, Robin and Liang, Percy (2017): Adversarial Examples for Evaluating Reading Comprehension Systems, EMNLP.
- Adam Geitgey: How to intentionally trick a NN -- Breaking things is easy

Best Practice

- Nils Reimers and Iryna Gurevych (2017): Optimal Hyperparameters for Deep LSTM-Networks for Sequence Labeling Tasks, CoRR.
- Graham Neubig (2017): Neural Machine Translation and Sequence-to-sequence Models: A Tutorial. arXiv

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