

AAACL-IJCNLP 2020

**Knowledgeable Natural Language Processing Workshop
(KNLP)**

**Proceedings of the First Knowledgeable Natural Language
Processing Workshop**

December 7, 2020

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Introduction

Welcome to the First Knowledgeable NLP Workshop — a workshop on the use of structured resources in NLP and on development of such resources.

Deep learning methods achieve state-of-the-art results in most NLP tasks, where a contributing factor to their remarkable performance is the ability to encode knowledge in terms of language models. For example, they can capture country-capital city association using word embeddings pre-trained on unlabelled textual data. However, in some cases, the required knowledge is rather specific and thus infrequent in text. This prevents neural models to learn it with an unsupervised approach. Still, if such specific knowledge were available, e.g., in terms of structured resources, deep learning models could boost their performance.

There exist many domain-specific structured resources (e.g., databases, ontologies) of good quality - being manually composed by experts, they are often reliable, have high coverage of their domain and in-depth information on individual objects. The goal of this workshop is to deepen researchers expertise on the use of structured knowledge for NLP and to facilitate the development of this line of research, e.g., standardizing datasets, tasks, and techniques.

The keynote talk of our workshop is given by William Cohen who is a Principal Research Scientist at Google AI. In addition to that, Ivan Titov, an Associate Professor in the University of Edinburgh and the University of Amsterdam, will give an invited talk. We thank the speakers for contributing to our workshop. We are also grateful to the authors of the papers for their input and the interest in structured resources for NLP. Last but not the least, we would like to thank the reviewers for their work.

We hope you enjoy our workshop!

Organisers:

Oren Sar Shalom, Facebook

Alexander Panchenko, Skoltech

Cicero dos Santos, Amazon

Varvara Logacheva, Skoltech

Alessandro Moschitti, Amazon

Ido Dagan, Bar Ilan University

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Steffen Remus, Universität Hamburg, Germany

Keynote Speaker:

William W. Cohen, Google AI

Invited Speaker:

Ivan Titov, University of Edinburgh, University of Amsterdam

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Workshop Program

08:00–09:30 Session 1

08:00–09:00 *Keynote talk: Knowledge-graph aware language models*
William W. Cohen

09:00–09:15 *COVID-19 Knowledge Graph: Accelerating Information Retrieval and Discovery for Scientific Literature*
Colby Wise, Miguel Romero Calvo, Pariminder Bhatia, Vassilis Ioannidis, George Karypus, George Price, Xiang Song, Ryan Brand and Ninad Kulkani

09:15–09:30 *Dialogue over Context and Structured Knowledge using a Neural Network Model with External Memories*
Yuri Murayama, Lis Kanashiro Pereira and Ichiro Kobayashi

10:00–11:30 Session 2

10:00–11:00 *Invited talk*
Ivan Titov

11:00–11:15 *Social Media Medical Concept Normalization using RoBERTa in Ontology Enriched Text Similarity Framework*
Katicapalli Subramanyam Kalyan and Sivanesan Sangeetha

11:15–11:30 *BERTChem-DDI : Improved Drug-Drug Interaction Prediction from text using Chemical Structure Information*
Ishani Mondal

Monday, December 7, 2020

