EMNLP 2019

Proceedings of the First Workshop on Commonsense Inference in Natural Language Processing

November 3, 2019
Hongkong

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Introduction

Welcome to the first Workshop on Commonsense Inference in Natural Language Processing, COIN.

This workshop takes place for the first time and has a focus on research around modeling commonsense knowledge, developing computational models thereof, and applying commonsense inference methods in NLP tasks. This includes any type of commonsense knowledge representation, and explicitly also work that makes use of knowledge bases and approaches developed to mine or learn commonsense from other sources. Evaluation proposals that explore new ways of evaluating methods of commonsense inference, going beyond established natural language processing tasks are also of interest for the workshop.

The workshop included two shared tasks on English reading comprehension using commonsense knowledge. The first task is a multiple choice reading comprehension task on everyday narrations. The second task is a cloze task on news texts.

Several teams participated in the shared tasks, with 4 teams submitting results for task 1, and one team submitting results for both tasks. All models are based on Transformer architectures. The best performing models reach 90.6% accuracy and 83.7% F1-score on task 1 and task 2, respectively.

In total, we received 22 paper submissions (among them 6 shared task papers), out of which 16 were accepted. All workshop papers are presented as talks, while the shared task papers are presented in a poster session. In addition, the workshop includes two invited talks on the topics of commonsense inference and commonsense in question answering.

The program committee consisted of 21 researchers, who we'd like to thank for providing helpful and constructive reviews on the papers. We'd also like to thank all authors for their submissions and interest in our workshop.

Simon, Sheng, Michael and Peter

Organizers:

Simon Ostermann, Saarland University / Nuance Communications
Sheng Zhang, Johns Hopkins University
Michael Roth, Saarland University / University of Stuttgart
Peter Clark, Allen Institute for AI

Program Committee:

Malihe Alikhani, Rutgers University
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Hannah Rashkin, University of Washington
Simon Razniewski, Max Planck Institute for Informatics
Niket Tandon, Allen Institute for AI
Adam Trischler, Microsoft Research

Invited Speaker:

Yejin Choi, University of Washington / Allen Institute for AI
Michael Witbrock, University of Auckland

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Conference Program

Sunday, November 3, 2019

9:00–10:30 Morning Session

9:00–9:10 ***Introduction***

9:10–10:10 *Invited talk: Commonsense Intelligence—Cracking the Longstanding Challenge in AI*
Yejin Choi

10:10–10:30 *Understanding Commonsense Inference Aptitude of Deep Contextual Representations*
Jeff Da and Jungo Kasai

10:30–11:00 ***Coffee break***

11:00–12:20 Pre-lunch Session

11:00–11:20 *A Hybrid Neural Network Model for Commonsense Reasoning*
Pengcheng He, Xiaodong Liu, Weizhu Chen and Jianfeng Gao

11:20–11:40 *Towards Generalizable Neuro-Symbolic Systems for Commonsense Question Answering*
Kaixin Ma, Jonathan Francis, Quanyang Lu, Eric Nyberg and Alessandro Oltramari

11:40–12:00 *When Choosing Plausible Alternatives, Clever Hans can be Clever*
Pride Kavumba, Naoya Inoue, Benjamin Heinzerling, Keshav Singh, Paul Reisert and Kentaro Inui

12:00–12:20 *Commonsense about Human Senses: Labeled Data Collection Processes*
Ndapa Nakashole

12:20–14:00 ***Lunch break***

Sunday, November 3, 2019 (continued)

14:00–15:20 Post-lunch Session

14:00–15:00 *Invited talk: Learning to Reason: from Question Answering to Problem Solving*
Michael Witbrock

15:00–15:20 *Extracting Common Inference Patterns from Semi-Structured Explanations*
Sebastian Thiem and Peter Jansen

15:20–16:20 Poster session

15:30–16:00 ***(including coffee break)***

15:20–16:20 *Commonsense Inference in Natural Language Processing (COIN) - Shared Task Report*
Simon Ostermann, Sheng Zhang, Michael Roth and Peter Clark

15:20–16:20 *KARNA at COIN Shared Task 1: Bidirectional Encoder Representations from Transformers with relational knowledge for machine comprehension with common sense*
Yash Jain and Chinmay Singh

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Jeff Da

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Xiepeng Li, Zhexi Zhang, Wei Zhu, Zheng Li, Yuan Ni, Peng Gao, Junchi Yan and Guotong Xie

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Chunhua Liu and Dong Yu

Sunday, November 3, 2019 (continued)

16:20–17:30 Afternoon Session

16:20–16:40 *Commonsense inference in human-robot communication*
Aliaksandr Huminski, Yan Bin Ng, Kenneth Kwok and Francis Bond

16:40–16:55 *Diversity-aware Event Prediction based on a Conditional Variational Autoencoder with Reconstruction*
Hirokazu Kiyomaru, Kazumasa Omura, Yugo Murawaki, Daisuke Kawahara and Sadao Kurohashi

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Ian Porada, Kaheer Suleman and Jackie Chi Kit Cheung

17:15–17:30 *How Pre-trained Word Representations Capture Commonsense Physical Comparisons*
Pranav Goel, Shi Feng and Jordan Boyd-Graber