

EMNLP 2021 Workshop

**Proceedings of the 3rd Workshop on Machine Reading for
Question Answering**

November 10th, 2021

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Message from the Organizers

Our workshop brings together researchers studying machine reading for question answering (MRQA). MRQA has emerged as an important testbed for evaluating how computer systems understand natural language, as well as a crucial technology for applications such as search engines and dialog systems. In recent years, MRQA systems have become much more accurate, and are even capable of retrieving evidence documents on the fly or answering without retrieved documents. Datasets and models have been developed to target many different aspects of the problem, including multi-hop reasoning, numerical reasoning, or commonsense reasoning.

Despite this progress, there are still many important desiderata that most MRQA systems do not adequately consider: multilinguality and interpretability. In the 3rd MRQA workshop, we therefore focus on these two emerging and crucial aspects of question answering models.

Systems today are predominantly evaluated by measuring accuracy on English benchmarks, yet an ideal question answering system would support a diverse range of languages. With recent developments of multilingual question answering datasets, it is timely to study how MRQA models can be designed to support typologically diverse languages.

Many systems produce correct answers for the wrong reason and are unable to explain their predictions. Given the opaque nature of modern large-scale pre-trained neural models, it is important to study how MRQA systems can offer users a way to trust (or not trust) an otherwise black-box model's predictions, as well as offer practitioners ways to diagnose critical modeling issues or dataset biases.

As in past years, we sought paper submissions of previously unpublished work. To reflect our focus on our two themes, we had separate tracks for multilinguality and interpretability-related papers, as well as a general research track. Across these three tracks, we received 21 total paper submissions after withdrawals – 14 for the general research track, 5 for the multilingual track, and 2 for the interpretability track. While the submission counts have decreased from last year, we found the average quality of submitted papers to be higher than previous years. After discussion among the organizers, we have accepted a total of 16 papers and awarded one best paper and two honorable mention papers. We also have accepted 23 non-archival submissions that were accepted at other related conferences (such as papers accepted at the main conference/findings of ACL, EMNLP, SIGIR) to be presented at our workshop. Our final program therefore includes 39 papers, of which 16 papers are included in these proceedings.

We are excited to host six stellar invited speakers. In the morning session, Reut Tsarfaty, Jon Clark, and Yiming Cui will give talks on multilinguality in question answering; in the afternoon session, Jonathan Berant, Marco Tulio Ribeiro, and Hannaneh Hajishirzi will give talks on interpretability in question answering. We thank these speakers, our program committee, the EMNLP workshop chairs, and our sponsors, Baidu and Facebook, for helping to make this workshop possible.

Organizing Committee

Adam Fisch, MIT
Alon Talmor, Tel Aviv University
Danqi Chen, Princeton University
Eunsol Choi, The University of Texas at Austin
Minjoon Seo, Naver & KAIST
Patrick Lewis, Facebook & University College London
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Shuohang Wang
Thomas Kwiatkowski
Tong Wang
Tushar Khot
Xiaodong Liu
Xinya Du
Yichen Jiang
Yizhong Wang
Yuxiang Wu

Invited Speaker

Reut Tsarfaty, Bar Ilan University

Jon Clark, Google

Yiming Cui, Joint Laboratory of HIT and iFLYTEK Research (HFL)

Jonathan Berant, Tel Aviv University, Allen Institute for AI

Marco Tulio Ribeiro, Microsoft Research

Hannah Hajishirzi, University of Washington, Allen Institute for Artificial Intelligence

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Conference Program

Wednesday, November 10, 2021

9:00–9:15 *Opening Remarks*

9:15–11:30 **Multilingual QA Invited Talk Session**

9:15–9:45 *Invited Talk 1 - Reut Tsarfaty*

9:45–10:15 *Invited Talk 2 - Jon Clark*

10:15–10:45 *Invited Talk 3 - Yiming Cui*

10:45–11:30 *Panel Discussion on Multilingual QA*

11:30–12:30 *Lunch break*

12:30–13:10 **Best Paper Talk Session**

12:30–12:44 *MFAQ: a Multilingual FAQ Dataset*
Maxime De Bruyn, Ehsan Lotfi, Jeska Buhmann and Walter Daelemans

12:44–12:57 *Rethinking the Objectives of Extractive Question Answering*
Martin Fajcik, Josef Jon and Pavel Smrz

12:57–13:10 *What Would it Take to get Biomedical QA Systems into Practice?*
Gregory Kell, Iain Marshall, Byron Wallace and Andre Jaun

Wednesday, November 10, 2021 (continued)

13:10–14:10 Poster Session (archival track)

- 13:10–14:10 *GermanQuAD and GermanDPR: Improving Non-English Question Answering and Passage Retrieval*
Timo Möller, Julian Risch and Malte Pietsch
- 13:10–14:10 *Zero-Shot Clinical Questionnaire Filling From Human-Machine Interactions*
Farnaz Ghassemi Toudeshki, Philippe Jolivet, Alexandre Durand-Salmon and Anna Liednikova
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- 13:10–14:10 *GANDALF: a General Character Name Description Dataset for Long Fiction*
Fredrik Carlsson, Magnus Sahlgren, Fredrik Olsson and Amaru Cuba Gyllensten
- 13:10–14:10 *Investigating Post-pretraining Representation Alignment for Cross-Lingual Question Answering*
Fahim Faisal and Antonios Anastasopoulos

Wednesday, November 10, 2021 (continued)

- 13:10–14:10 *Semantic Answer Similarity for Evaluating Question Answering Models*
Julian Risch, Timo Möller, Julian Gutsch and Malte Pietsch
- 13:10–14:10 *Simple and Efficient ways to Improve REALM*
Vidhisha Balachandran, Ashish Vaswani, Yulia Tsvetkov and Niki Parmar
- 13:10–14:10 Poster Session (non-archival track)**
- 13:10–14:10 *Synthetic Target Domain Supervision for Open Retrieval QA*
Revanth Gangi Reddy, Bhavani Iyer, Md Arafat Sultan, Rong Zhang, Avirup Sil, Vittorio Castelli, Radu Florian, Salim Roukos
- 13:10–14:10 *Entity-based Knowledge Conflicts in Question Answering*
Shayne Longpre, Kartik Perisetla, Anthony Chen, Nikhil Ramesh, Chris Dubois, Sameer Singh
- 13:10–14:10 *Mitigating False-Negative Contexts in Multi-Document Question Answering with Retrieval Marginalization*
Ansong Ni, Matt Gardner, Pradeep Dasigi
- 13:10–14:10 *Generative Context Pair Selection for Multi-hop Question Answering*
Dheeru Dua, Cicero Nogueira dos Santos, Patrick Ng, Ben Athiwaratkun, Bing Xiang, Matt Gardner, Sameer Singh
- 13:10–14:10 *Learning with Instance Bundles for Reading Comprehension*
Dheeru Dua, Pradeep Dasigi, Sameer Singh, Matt Gardner
- 13:10–14:10 *Can NLI Models Verify QA Systems’ Predictions?*
Jifan Chen, Eunsol Choi, Greg Durrett
- 13:10–14:10 *Knowing More About Questions Can Help: Improving Calibration in Question Answering*
Shujian Zhang, Chengyue Gong and Eunsol Choi
- 13:10–14:10 *RocketQA: An Optimized Training Approach to Dense Passage Retrieval for Open-Domain Question Answering*
Yingqi Qu, Yuchen Ding, Jing Liu, Kai Liu, Ruiyang Ren, Wayne Xin Zhao, Daxiang Dong, Hua Wu and Haifeng Wang
- 13:10–14:10 *Weakly Supervised Pre-Training for Multi-Hop Retriever*
Yeon Seonwoo, Sang-Woo Lee, Ji-Hoon Kim, Jung-Woo Ha and Alice Oh
- 13:10–14:10 *ReasonBert: Pre-trained to Reason with Distant Supervision*
Xiang Deng, Yu Su, Alyssa Lees, You Wu, Cong Yu and Huan Sun

Wednesday, November 10, 2021 (continued)

- 13:10–14:10 *Question Answering over Electronic Devices: A New Benchmark Dataset and a Multi-Task Learning based QA Framework*
Abhilash Nandy, Soumya Sharma, Shubham Maddhashiya, Kapil Sachdeva, Pawan Goyal and Niloy Ganguly
- 13:10–14:10 *Do We Know What We Don't Know? Studying Unanswerable Questions beyond SQuAD 2.0*
Elior Sulem, Jamaal Hay and Dan Roth
- 13:10–14:10 *Relation-Guided Pre-Training for Open-Domain Question Answering*
Ziniu Hu, Yizhou Sun and Kai-Wei Chang
- 13:10–14:10 *Beyond Reptile: Meta-Learned Dot-Product Maximization between Gradients for Improved Single-Task Regularization*
Akhil Kedia, Sai Chetan Chinthakindi and Wonho Ryu
- 13:10–14:10 *SD-QA: Spoken Dialectal Question Answering for the Real World*
Fahim Faisal, Sharlina Keshava, Md Mahfuz Ibn Alam and Antonios Anastasopoulos
- 13:10–14:10 *When Retriever-Reader Meets Scenario-Based Multiple-Choice Questions*
ZiXian Huang, Ao Wu, Yulin Shen, Gong Cheng and Yuzhong Qu
- 13:10–14:10 *Winnowing Knowledge for Multi-choice Question Answering*
Yejiu Li, Bowei Zou, Zhifeng Li, Ai Ti Aw, Yu Hong and Qiaoming Zhu
- 13:10–14:10 *Extract, Integrate, Compete: Towards Verification Style Reading Comprehension*
Chen Zhang, Yuxuan Lai, Yansong Feng and Dongyan Zhao
- 13:10–14:10 *Reference-based Weak Supervision for Answer Sentence Selection using Web Data*
Vivek Krishnamurthy, Thuy Vu and Alessandro Moschitti
- 13:10–14:10 *NOAHQA: Numerical Reasoning with Interpretable Graph Question Answering Dataset*
Qiyuan Zhang, Lei Wang, SICHENG YU, Shuohang Wang, Yang Wang, Jing Jiang and Ee-Peng Lim
- 13:10–14:10 *Improving Numerical Reasoning Skills in the Modular Approach for Complex Question Answering on Text*
Xiao-Yu Guo, Yuan-Fang Li and Gholamreza Haffari
- 13:10–14:10 *R2-D2: A Modular Baseline for Open-Domain Question Answering*
Martin Fajcik, Martin Docekal, Karel Ondrej and Pavel Smrz
- 13:10–14:10 *AutoEQA: Auto-Encoding Questions for Extractive Question Answering*
Stalin Varanasi, Saadullah Amin and Guenter Neumann
- 14:10–14:30 Break**

Wednesday, November 10, 2021 (continued)

14:30–16:45 **Interpretability in QA Invited Talk Session**

14:30–15:00 *Invited Talk 4 - Jonathan Berant*

15:00–15:30 *Invited Talk 5 - Marco Tulio Ribeiro*

15:30–16:00 *Invited Talk 6 - Hannaneh Hajishirzi*

16:00–16:45 *Panel Discussion on Interpretability in QA*

16:45–17:00 *Closing Remarks*

