

EMNLP 2018

The 6th BioASQ Workshop
A challenge on large-scale biomedical semantic indexing and
question answering

Proceedings of the Workshop

November 1st, 2018
Brussels, Belgium

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209 N. Eighth Street
Stroudsburg, PA 18360
USA
Tel: +1-570-476-8006
Fax: +1-570-476-0860
acl@aclweb.org

ISBN 978-1-948087-70-4

Preface

The sixth BioASQ workshop on biomedical semantic indexing and question answering took place in Brussels, Belgium on November 1st, 2018 as part of the EMNLP 2018 conference and was hosted by the SQUARE Brussels meeting centre. The workshop was supported by the BioASQ project¹, which organizes the corresponding annual challenge. The goals of the workshop were to present the results of the sixth BioASQ challenge and further the interaction with the wider community of biomedical semantic indexing and question answering. The presenters represented research teams from different parts of the globe and with different viewpoints to the problem. This contributed to a very lively and interesting discussion among the participants of the workshop.

Ten papers were presented during the workshop. All were selected by peer review for presentation. This volume includes all ten papers. The first paper gives an overview of the challenge, including especially the datasets that were used throughout the challenges and the overall results achieved by the participants.

The remaining nine papers are those presented at the workshop. The first of these papers presents an analysis of the use of Semantic Role Labeling (SRL) tools in question-answering. The second paper present a system which uses deep learning and reinforcement learning approaches for the generation of ideal answers. Deep learning techniques for the document and snippet retrieval tasks is the object of discourse of the third workshop paper. The fourth paper presents a system for document and snippet retrieval, which makes use of semantic similarity patterns that are evaluated and measured by a convolutional neural network architecture. The system presented in the fifth paper uses a novel end-to-end model, which utilizes deep learning and attention mechanism to index MeSH terms to biomedical text. In the sixth paper, the authors move toward abstractive summarization, which attempts to distill and present the meaning of the original text in a more coherent way. They incorporate a sentence fusion approach, based on Integer Linear Programming. A named-entity based method for answering factoid and list questions, and an extractive summarization technique for building paragraphs are presented in the seventh paper of the workshop. The eighth paper studies the influence of enriching the training data by manually annotated variants of gold standard answers on the evaluation performance. The last paper focuses on a system for ideal answer generation, using ontology-based retrieval and a neural learning-to-rank approach, combined with extractive and abstractive summarization techniques.

We wish to thank all who participated to the success of this workshop, especially the authors, reviewers, speakers and participants.

Ioannis A. Kakadiaris, George Paliouras and Anastasia Krithara
November 2018

¹www.bioasq.org

Organizers:

Ioannis A. Kakadiaris, University of Houston, USA
George Paliouras, NCSR "Demokritos", Greece and University of Houston, USA
Anastasia Krithara, NCSR "Demokritos", Greece

Program Committee:

Ion Androutsopoulos, Athens University of Economics and Business, Greece
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Francisco J. Ribadas-Pena, University of Vigo, Spain
Hagit Shatkay, University of Delaware, USA
Grigoris Tsoumakas, Aristotle University of Thessaloniki, Greece

Invited Speaker:

Jin-Dong Kim, DBCLS, Japan

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10:30-11:00	Coffee break
11:00-11:20	<i>Semantic role labeling tools for biomedical question answering: a study of selected tools on the BioASQ datasets</i> Fabian Eckert and Mariana Neves
11:20-11:40	<i>Macquarie University at BioASQ 6b: Deep learning and deep reinforcement learning for query-based summarisation</i> Diego Molla
11:40-12:00	<i>AUEB at BioASQ 6: Document and Snippet Retrieval</i> George Brokos, Polyvios Liosis, Ryan McDonald, Dimitris Pappas and Ion Androutsopoulos
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14:40-15:00	<i>UNCC QA: Biomedical Question Answering system</i> Abhishek Bhandwaldar and Wlodek Zadrozny
15:00-15:20	<i>An Adaption of BIOASQ Question Answering dataset for Machine Reading systems by Manual Annotations of Answer Spans.</i> Sanjay Kamath, Brigitte Grau and Yue Ma
15:20-16:00	Coffee break
16:00-16:20	<i>AttentionMeSH: Simple, Effective and Interpretable Automatic MeSH Indexer</i> Qiao Jin, Bhuwan Dhingra, William Cohen and Xinghua Lu
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