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Biomedical Language Processing (BioNLP)

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Stronger Biomedical NLP in the Face of COVID-19

Dina Demner-Fushman, Sophia Ananiadou, Kevin Bretonnel Cohen, Junichi Tsujii

This year marks the second virtual BioNLP workshop. BioNLP 2020 workshop was one of the community's first experiences in online conferences, BioNLP 2021 finds us as cohort of seasoned zoomers, webexers and users of other platforms that the conference organizers select in the hopes of finding an environment that will get us as close as possible to an in-person meeting. There is some light at the end of the tunnel: in many places the new SARS-CoV-2 infections are going down and the numbers of fully vaccinated people are going up, which allows us hoping for an in-person meeting in 2022. We believe that some of this success was enabled by our community: In 2020, BioNLP researchers contributed to development of efficient approaches to retrieval of pandemic-related information and developed approaches to clinical text processing that supported many tasks focused on containment of the pandemic and reduction of COVID-19 severity and complications.

Much of the language processing work related to COVID-19 was enabled by and built on the foundation established by the BioNLP community. This year, the community continued expanding BioNLP research that resulted in 43 submissions to the workshop and 16 additional submissions of the work describing innovative approaches to the MADIQA 2021 Shared Task described in the overview paper in this volume.

As always, we are deeply grateful to the authors of the submitted papers and to the reviewers (listed elsewhere in this volume) that produced three thorough and thoughtful reviews for each paper in a fairly short review period. The quality of submitted work continues growing and the Organizers are truly grateful to our amazing Program Committee that helped us determine which work is ready to be presented and which will benefit from additional experiments and analysis suggested by the reviewers. Based on the PC recommendations, we selected eight papers for oral presentations and 15 for poster presentations. These presentations include transformer-based approaches to such fundamental tasks as relation extraction and named entity recognition and normalization, creation of new datasets and exploration of knowledge-capturing abilities of deep learning models.

The keynote titled "Information Extraction from Texts Using Heterogeneous Information" will be presented by Dr. Makoto Miwa, an associate professor of Toyota Technological Institute (TTI). Dr. Miwa received his Ph.D. from the University of Tokyo in 2008. His research mainly focuses on information extraction from texts, deep learning, and representation learning. Specifically, the keynote will highlight the following:

With the development of deep learning, information extraction targeting sentences using only linguistic information has matured, and interest increases beyond the boundaries of sentences and languages. Labeled information is limited for such information extraction due to high annotation costs, and a variety of information must be used to complement them, such as language structure and external knowledge base information. In the talk, Dr Miwa will mainly introduce his recent efforts to extract information from texts using various heterogeneous information inside and outside the language and discuss the direction and prospects of information extraction in the future.

As always, we are looking forward to a productive workshop, and we hope that new collaborations and research will evolve, continuing contributions of our community to public health and well-being.

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08:45–09:00 *Scalable Few-Shot Learning of Robust Biomedical Name Representations*
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Session 7: Invited Talk by Makoto Miwa

17:00–17:30 ***Makoto Miwa: Information Extraction from Texts Using Heterogeneous Information***

17:30–18:00 **Closing remarks**