

ICDAM-2022
International Conference on Data Analysis and Management
Organized by THE KORKONOSZA UNIVERSITY OF APPLIED SCIENCE

On 25th - 26th June, 2022

***** **CALL FOR PAPERS** *****

SPECIAL SESSION ON
Biomedical Natural Language Processing

SESSION ORGANIZERS:

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- **Dr. Kannan Balakrishnan Nair**, Emeritus professor, Department of Computer Applications, Cochin University of Science and Technology (CUSAT), Kerala, India
- **Dr. Rajeev R R**, Programme Head (e-Governance and Development) at International Centre for Free and Open Source Software (ICFOSS), Kerala, India
- **Dr Manjira Sinha**, Assistant Professor, GS Sanyal School of Telecommunication & joint faculty, Centre of Excellence in Artificial Intelligence, IIT Kharagpur.

SESSION DESCRIPTION:

Natural language processing (NLP) is a key area of artificial intelligence research. The research community has made significant progress in several areas, including machine translation, speech recognition, question answering, and language model pretraining, thanks to recent statistical and deep neural revolutions. The mainstream NLP concentrate more on general domains like social media posts, web and newswires. NLP applications in specific domains including biomedicine has received little attention.

Owing to the advancements of biomedical technologies, recent years have witnessed an explosion of biomedical data. Interestingly, the bulk of biomedical data is conducted and recorded in natural language. The avalanche of biomedical data far outnumbers manual curation. For example, PubMed adds two

biomedical papers every minute, thousands every day, and over a million every year. Statistics become even more when we consider the data available in the form of clinical notes and electronic health records. Mining these massive biomedical data can reveal many hidden links to the genetic-phenotypic mechanisms of complex diseases and their personalized treatment.

In contrast to the mainstream NLP, the biomedical NLP application has specific challenges. First of all, biomedical NLP needs to tackle more complex linguistics phenomena. For example, the relation extraction in mainstream NLP may limit to one or two sentences. But we need to expand the scope to complex relations involving three or more entities, which typically span multiple sentences. The NLP task should also deal with less redundant information. This field also faces substantial machine learning challenges. The standard supervised paradigm requires annotated examples. In general domains, these can be produced at scale by crowdsourcing. In specialized domains such as biomedicine, crowdsourcing is difficult, as annotation requires domain expertise that crowd workers do not possess.

This special session will focus on emerging NLP applications on biomedical text data, and the use of multi-modal data for biomedical knowledge discovery. Additionally, this special session gives a platform for machine learning experts and computational linguists to discuss the scope extending their expertise for betterment of life.

RECOMMENDED TOPICS:

Topics to be discussed in this special session include (but are not limited to) the following:

- **Deep Learning in Health Care**
- **Biomedical Information Retrieval**
- **Relation Extraction from medical records**
- **Application of Ontologies and Knowledge graphs for Bio/medical data analysis**
- **Question answering in medical or biomedical domain**
- **Dialogue Assistant in medical or biomedical domain**
- **Biomedical Named Entity Recognition**
- **Bioinformatics Applications of NLP**
- **Clinical NER**
- **NLP based clinical knowledge discovery**
- **Text mining for personalized medicine**
- **Automated database curation techniques for Biomedical domain**

SUBMISSION PROCEDURE:

Researchers and practitioners are invited to submit papers for this special theme session on **Biomedical Natural Language Processing** *on or before March 20, 2022*. All submissions must be original and may not be under review by another publication. INTERESTED AUTHORS SHOULD CONSULT THE CONFERENCE'S GUIDELINES FOR MANUSCRIPT SUBMISSIONS at http://icdam-conf.com/paper_submission.html. All submitted papers will be reviewed on a double-blind, peer review basis.

NOTE: While submitting paper in this special session, please specify **Biomedical Natural Language Processing** at the top (above paper title) of the first page of your paper.

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