

BMLLC 2022

Special Session on Bio-modeling and Machine Learning in Prediction of Metastasis in Lung Cancer

at the 14th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2022)

Almaty, Kazakhstan, June 6-9, 2022

Conference website: <http://www.aciids.pwr.edu.pl/>

Special Session Organizers

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Objectives and topics

Lung cancer is one of the most commonly diagnosed cancers and is the leading cause of cancer-related deaths. The most common histological subtype is non-small-cell lung carcinoma, accounting for 85% of all lung cancer cases. Advanced NSCLC is more likely to metastasize, leading to severe symptoms and a decrease in overall survival. The presence of distant metastases is one of the most predictive factors of poor prognosis. The main goal of this session is to present original models and methods, which support analysis of clinical, molecular and imaging data and aim at better prediction of spread and colonization of tumor cells to distant organs, with emphasis on the most common subtype of lung cancer - non-small-cell lung carcinoma (NSCLC). Since the metastatic tumor is mainly incurable, due to its resistance to treatment, we expect to be able to discuss the urgent biological and clinical question: how, when, and where the primary tumor will spread to distant locations. The proposed session is supposed to include interdisciplinary research employing methods from machine learning, data analysis, bio-mathematical modeling, image processing, bioinformatics and systems biology, with strong support from clinical, molecular and biomedical images data. It will give opportunity to present a new framework of data integration and analysis and novel algorithms that will support interdisciplinary research. We want to offer an opportunity for researchers and practitioners to identify new promising research directions as well as to publish recent advances in this area. The scope of the BMLLC 2022 includes, but is not limited to the following topics:

- Bio-mathematical models of cancer spread and metastasis
- Feature selection and classification methods in cancer metastasis prediction .
- Machine learning algorithms for prediction of cancer progress and anticancer therapy outcome
- Image processing methods in radiomics
- Simulation tools for modeling and prediction of cancer metastasis
- Data mining techniques with application to lung cancer
- Algorithms for integration of clinical, molecular and radiomic data
- Bioinformatic analysis of molecular and genomic data related to lung cancer
- Modeling of lung cancer evolution
- Omics' in lung cancer
- Modelis of links between cancer and immune system
- Cellular automata in modeling of tumor growth and invasion

Important dates

Submission of papers: **15 January 2022**
Notification of acceptance: **1 March 2022**
Camera-ready papers: **15 March 2022**
Registration & payment: **15 March 2022**
Conference date: **6-9 June 2022**

Program Committee (to be invited)

Sebastien Benzekry, Inria Sophia-Antipolis Center for Research on Cancer of Marseille, France
Rafal Suwinski, Maria Sklodowska-Curie National Research Centre of Oncology, Branch Gliwice, Poland
Helmut Popper, Medical University of Graz, Austria
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Andrzej Swierniak, Silesian University of Technology, Gliwice, Poland

Submission

All contributions should be original and not published elsewhere or intended to be published during the review period. Authors are invited to submit their papers electronically in pdf format, through EasyChair. All the special sessions are centralized as tracks in the same conference management system as the regular papers. Therefore, to submit a paper please activate the following link and select the track: ***BMLLC 2022: Special Session on Bio-modeling and Machine Learning in Prediction of Metastasis in Lung Cancer.***

<https://easychair.org/conferences/?conf=aciids2022>

Authors are invited to submit original previously unpublished research papers written in English, of up to 13 pages, strictly following the LNCS/LNAI format guidelines. Authors can download the Latex (recommended) or Word templates available at [Springer's web site](#). Submissions not following the format guidelines will be rejected without review. To ensure high quality, all papers will be thoroughly reviewed by the BMLLC 2022 Program Committee. All accepted papers must be presented by one of the authors who must register for the conference and pay the fee. The conference proceedings will be published by Springer in the prestigious series LNCS/LNAI (indexed by ISI CPCI-S, included in ISI Web of Science, EI, ACM Digital Library, dblp, Google Scholar, Scopus, etc.).