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MILAN, ITALY
MAY 5 2023
& ONLINE

ARTIFICIAL INTELLIGENCE FOR ONCOLOGY

PRESIDENT OF THE CONFERENCE:
Arsela Prelaj

Fondazione IRCCS Istituto Nazionale dei Tumori
Sistema Socio Sanitario Regione Lombardia
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GENERAL INFORMATION

VENUE
Aula Magna
Fondazione IRCCS Istituto Nazionale Tumori
Via Giacomo Venezian, 1 - Milan (Italy)

VIRTUAL CONFERENCE
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REGISTRATION
Registration is free of charge
You may register for IN-PERSON OR ONLINE-ONLY ACCESS
www.events-communication.com/event/ai

OFFICIAL LANGUAGE
The official language is English

OFFICIAL TIME
The official Time is Central European Summer Time (CEST), UTC +2

CME CREDITS
CME accreditation (valid for Italian participants only) for: PHYSICIAN, PHARMACIST, BIOLOGIST, NURSE
CME credits: 4,2 - ID event: 372599 (in presence)
CME credits: 9 - ID event: 372613 (online)
Italian CME credits will be granted to those participants who attend at least 90% of scientific works, fill in the questionnaire assessment of perceived quality and duly fill in the evaluation questionnaires answering correctly 75% of the questions.

SCIENTIFIC PROGRAM

09:30 Welcome and Introduction
F. de Braud
G. Apolone
A. Prelaj

SESSION 1

BACKGROUND ON AI METHODOLOGIES AND THEIR USE IN THE CLINICAL PRACTICE

CHAIRS: L. Mazzeo, V. Miskovic, A. Prelaj

09:50 Machine Learning for real-world data analysis F. Trovò

10:10 Deep Learning models for imaging and genomics
J. Vibert

10:30 Explainable Trustworthy AI: translating AI into the clinical practice A.L.G. Pedrocchi

10:50 Discussion

SESSION 2

AI MODELS USHERING IN A NEW AGE FOR IMAGING IN ONCOLOGY

CHAIRS: L. Agnelli, M. Boeri, A. Cicchetti

11:10 Digital pathology - bolstering its impact through AI toolsets
J. Dolezal

11:30 Radiomics applications of AI for cancer research
R. Pérez-Lopez

11:50 AI as a double reader on images from screening programs
U. Pastorino

12:10 Discussion

12:30 Lunch Break

SESSION 3

HARNESSING THE POWER OF AI FOR MULTIOMICS DATA INTEGRATION AND DISCOVERY

CHAIRS: C. M. Della Corte, R. Ferrara, G. Viscardi

13:30 Multiomics data and predictive AI for cancer immunotherapy
S. Shah

13:50 AI supporting the discovery of new molecules and biomarkers
A.T. Pearson

14:10 AI-based multimodal data integration applied to oncology
J. N. Kather

14:30 Discussion

SESSION 4

ADAPTING DATA STORAGE MODELS AND REGULATORY FRAMEWORKS TO THE AI PARADIGM

CHAIRS: S. Damian, M. Ganzinelli, S. Kosta

14:50 Innovative data repositories and platforms designs R. L. Grossman

15:10 AI-powered wearables and medical devices for novel endpoints monitoring
E. Ambrosini

15:30 Specifics of the regulatory and cybersecurity frameworks in the AI field E. Biasin

15:50 Discussion

16:15 Coffee break

SESSION 5

BEYOND REAL-LIFE IMPLEMENTATION, NEW AVENUES FOR INNOVATION

CHAIRS: C. Genova, G. Lo Russo, C. Proto

16:30 AI to accelerate clinical trials' design and implementation
M. C. Garassino

16:50 Applied AI projects - the I3LUNG Horizon Europe project and the Apollo 11 Master Protocol
A. Prelaj, A. Vingiani

17:10 Beyond AI: Quantum Science
L. Gagliardi

17:30 Discussion

17:50 **ROUND TABLE**
How to effectively exploit Big Data and AI innovation in oncology? Finding common ground for academic, policy makers and industry stakeholders

CHAIRS: A. De Toma, D. Signorelli

DISCUSSANTS: P. Auletta, L. Castelo-Branco, D. Monzani

18:20 Take-home messages
A. Prelaj

OVERVIEW

AI methodologies have been applied to medical research for years, and has recently made an impactful entrance in oncology more specifically. AI broadly speaking consists in a set of techniques allowing computers to emulate human intelligence, employing algorithms created for the analyses and the design of either predictions or conclusions based on the analysis of big datasets.
The latter is especially important for cancer research considering the critical mass of data available for analysis and that standard analysis methods fail to exploit to its fullest potential. This is particularly the case for multiomics data, with their high variation in nature, format or storage. The proper and effective and integration of these novel methodologies into the standards of clinical – but also basic and translational – research could prove to be an important leap forward for oncology research. Hence, this event will have two core training objectives. The first will be to ease the clinical and research community into the mindset of AI methodologies themselves, as it has been applied to the medical field for years now, for instance in designing medical devices, yet is still misunderstood or not known to its full potential – from a general overview of the most frequently used ML/DL methods and Explainable AI to a deep dive in novel data platforms and repository structures integrating these approaches in their design. This will allow clinicians to identify the value of AI models for their trials and studies, making the volume of patient- and tumor-related data valuable and more fully exploitable; as well as biologists to increase the playing field in tumor biology to discover new biomarkers and mechanisms. The second main endpoint will be to demonstrate not only the possibilities offered by the inclusion of AI models in standard practice, but really to present some concrete and innovative activities where they are already being successfully implemented. The focus is to demonstrate in particular the value of AI for both its predictive power and for the possibilities it opens up for the discovery of both new biomarkers and of new molecules targeting specific tumors. In particular, one section will be focused on the translational field and the synergy between AI-powered multiomic data analysis and clinical research, with regards to cancer immunotherapy. As the AI research field is evolving at a rapid pace, the event will be topped off by a session offering perspectives already going beyond the current state of the art and providing insights into the AI of tomorrow – how it could be involved as full-fledged actor in clinical decision-making, all the way to the field of quantum sciences.
The event is set to be a full-day program. The speakers will have a diverse background to reflect the spectrum of AI research (and beyond), from AI engineering experts, to clinicians and translational researchers, and hybrid figures such as clinical AI specialists.
The attendance is expected to mirror this variety, along with participants with a more specific background in imaging and pathology.