

## Faculty

**AGNELLI LUCA** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano

**AMBROSINI EMILIA** Politecnico di Milano, DEIB

**BORACCHI GIACOMO** Politecnico di Milano, DEIB

**CICCHETTI ALESSANDRO** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano

**CRISPIN ORTUZAR MIREIA** University of Cambridge

**DE BRAUD FILIPPO** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano

**DE TOMA ALESSANDRO** ASST Santi Paolo e Carlo, Ospedale San Paolo, Milano

**DI MAIO MASSIMO** President-elect of AIOM University of Turin, AOU Città della Salute e della Scienza di Torino, Ospedale Molinette

**FERRARA ROBERTO** IRCCS Ospedale San Raffaele, Milano

**GANZINELLI MONICA** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano

**GARASSINO MARINA CHIARA** University of Chicago

**GENNARI FRANCESCA** Scuola Superiore Sant'Anna, Pisa

**HO DEAN** University of Singapore

**KATHER JAKOB NIKOLAS** Technical University Dresden

**KOSTA SOKOL** Aalborg University, Denmark

**LO RUSSO GIUSEPPE** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano

**MAZZEO LAURA** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano

**MISKOVIC VANJA** Politecnico di Milano, DEIB

**MONZANI DARIO** University of Palermo, IEO Milano

**PEARSON ALEXANDER T.** University of Chicago

**PEDROCCHI ALESSANDRA** Politecnico di Milano, DEIB

**PÉREZ-LOPEZ RAQUEL** Vhio Radiomics Group, Barcelona

**PRELAJ ARSELA** Fondazione IRCCS Istituto Nazionale dei Tumori, Politecnico di Milano

**PROTO CLAUDIA** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano

**PROVENZANO LEONARDO** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano

**RESTELLI MARCELLO** Politecnico di Milano, DEIB

**SANCHEZ VEGA FRANCISCO** Memorial Sloan Kettering New York

**SANTORO EUGENIO** Istituto Mario Negri Milano

**SHAH SOHRAB** Memorial Sloan Kettering New York

**SIGNORELLI DIEGO** Niguarda Cancer Center, Grande Ospedale Metropolitano Niguarda, Milano

**SPAGNOLETTI ANDREA** Fondazione IRCCS Istituto Nazionale dei Tumori, Milano IT

**TROVÒ FRANCESCO** Politecnico di Milano, DEIB

**TRUHN DANIEL** RWTH Aachen University, Aachen Germany

**VERLINGUE LOÏC** Centre Leon Berard Lyon

**VIBERT JULIEN** Gustave Roussy, Villejuif France

**VISCARDI GIUSEPPE** Azienda Ospedaliera Monaldi Cotugno Cto, Università degli Studi della Campania Luigi Vanvitelli, Napoli

UNDER THE AUSPICES OF

ASCO®

ASCO® is a registered trademark of the American Society of Clinical Oncology®. Used with permission. This is not an ASCO sponsored event.\*



WITH THE UNCONDITIONAL SPONSORSHIP OF

PLATINUM SPONSOR



GOLD SPONSOR



SILVER SPONSOR



SCIENTIFIC PROVIDER AND CONGRESS ORGANIZER



Events srl  
Via Lorenzo Lotto 9, 60019 Senigallia (AN)  
www.events-communication.com  
segreteria@events-communication.com  
Ph. +39 071 7930220 Fax. +39 071 9252094



2<sup>nd</sup> edition

# ARTIFICIAL INTELLIGENCE FOR ONCOLOGY

PRESIDENT OF THE CONFERENCE  
**ARSELA PRELAJ**

MILAN, ITALY  
**MAY 10<sup>th</sup> 2024**  
& ONLINE



Sistema Socio Sanitario



## PRESIDENT OF THE CONFERENCE

**Arsela Prelaj**, MD, PhD Candidate  
Medical Oncologist and PhD student in Bioengineering and Artificial Intelligence  
Politecnico di Milano  
Thoracic Oncology Unit, Medical Oncology Department 1  
Fondazione IRCCS Istituto Nazionale Tumori, Milan (Italy)  
Member of the ESMO Working Group on Real World Data and Digital Health

## SCIENTIFIC COMMITTEE

**Filippo de Braud**, Fondazione IRCCS Istituto Nazionale Tumori, Milan (Italy)

**Alessandra Pedrocchi**, **Francesco Trovò**, **Vanja Miskovic**  
Politecnico di Milano, DEIB

## SCIENTIFIC SECRETARIAT

**Giovanni Scoazec**, **Leonardo Provenzano**  
Fondazione IRCCS Istituto Nazionale Tumori, Milan (Italy)

# General Information

## CONGRESS VENUE

**Aula Magna**, *Fondazione IRCCS Istituto Nazionale Tumori*  
Via Giacomo Venezian, 1 20133 Milan (Italy)

## VIRTUAL CONFERENCE

<https://www.events-fad.com/>

## REGISTRATION

Registration is free of charge.  
You may register for IN-PERSON OR ONLINE-ONLY ACCESS  
[www.events-communication.com/event/ai2024](http://www.events-communication.com/event/ai2024)

## OFFICIAL LANGUAGE AND TIME

The official language is English  
The official Time is Central European Summer Time (CEST), UTC +2

## CME CREDITS

CME accreditation (valid for Italian participants only) for: Medical Doctor, Chemist, Pharmacist, Biologist, Physician, Nurse.

CME credits RES: 4,9 - CME credits FAD: 10,5

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.

# Overview

AI methodologies have been applied to medical research for years, and have 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 field of AI methodologies themselves, 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 assess its potential 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, for example metastatic lung cancer. In this context, we will showcase and discuss ongoing projects, including I3LUNG, along with other initiatives focused on the diagnostic and treatment pathways optimization for lung cancer patients. These projects involve collaboration among research institutes, academia, and private companies. 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 Artificial Intelligence of tomorrow – how it could be involved as full-fledged actor in clinical decision-making.

## FORMAT

The event is set to be a full-day program. The speakers will have a diverse background to reflect the spectrum of Artificial Intelligence research (and beyond), from Artificial Intelligence engineering experts, to clinicians and translational researchers, and hybrid figures such as clinical Artificial Intelligence specialists. The attendance is expected to mirror this variety, along with participants with a more specific background in imaging and pathology.

## ABSTRACT SUBMISSION CLOSED

Abstract submission is now closed.  
The results of the abstract submission will be available on 04<sup>th</sup> March. Check your emails!

## TOPIC AREAS:

1. Cancer screening with AI
2. Image diagnosis (radiomics and/or digital pathology)
3. Multiomics and/or Multimodal Integration with AI
4. Treatment prediction and Selection with AI and explainability
5. Special Section (AI legal-ethical frameworks, Innovative platforms and Cognitive sensing and wearable devices)

## SUBMISSION DEADLINES:

31<sup>st</sup> January 2024 submission deadline  
04<sup>th</sup> March 2024 outcome notifications

# Scientific Program

## 08:30 POSTER SESSION

**09:30** Welcome  
**Arsela Prelaj**  
**Gustavo Galmozzi** *President Fondazione IRCCS Istituto Nazionale dei Tumori*  
**Carlo Nicora** *General Director Fondazione IRCCS Istituto Nazionale dei Tumori*  
**Giovanni Apolone** *Scientific Director Fondazione IRCCS Istituto Nazionale dei Tumori*  
**Filippo de Braud** *Director Dpt. of Oncology and Hemato-Oncology, Fondazione IRCCS Istituto Nazionale dei Tumori*  
**Bruno Aratri** *President IPOP Onlus*

**09:50** Introduction  
**Massimo Di Maio** *President-elect of AIOM*

## session 1

### BACKGROUND ON AI METHODOLOGIES AND THEIR USE IN THE CLINICAL PRACTICE

*Chairs:* **Francisco Sanchez Vega**, **Monica Ganzinelli**, **Francesco Trovò**

**10:00** Machine, Deep Learning and Reinforcement Learning in medicine  
**Marcello Restelli**

**10:20** Explainable AI for RWD, genomics and gaps in images  
**Vanja Miskovic**

**10:40** Deep Learning applied to Genomics and Transcriptomics  
**Julien Vibert**

**11:00** Discussion

## session 2

### AI AND IMAGING: CLINICAL PRACTICE APPLICATION AND FUTURE DIRECTIONS

*Chairs:* **Andrea Spagnoletti**, **Alessandro Cicchetti**, **Giacomo Boracchi**

**11:20** Integration of radiomics in clinical practice for screening and diagnosis  
**Mireia Crispin Ortuzar**

**11:40** The use of radiomics in prediction: treatment outcomes and toxicity  
**Raquel Pérez-Lopez**

**12:00** Integration of digital pathology in clinical practice for screening and diagnosis  
**Jakob Nikolas Kather**

**12:20** The use of digital pathology in prediction: treatment outcomes and toxicity  
**Alexander T. Pearson**

**12:40** Discussion

**13:00** Lunch Break **POSTER SESSION**

## session 3

### AI FOR OMICS AND MULTIMODAL DATA ANALYSIS

*Chairs:* **Alessandra Pedrocchi**, **Arsela Prelaj**, **Luca Agnelli**

**14:00** Multimodal integration: from methodology to its successful application  
**Sohrab Shah**

**14:20** Shared talk: Molecular Tumor Board and the role of AI: the oncologist and AI-expert point of view  
**Filippo de Braud**, **Loic Verlingue**

**14:45** Drug discovery using virtual AI lab - Special lecture  
**Marina Chiara Garassino**

**15:05** Discussion

## session 4

### DATA STORAGE AND ITS REGULATORY FRAMEWORK

*Chairs:* **Sokol Kosta**, **Emilia Ambrosini**, **Laura Mazzeo**

**15:25** Bridging the Gap: Federated Learning as a Catalyst for Collaborative Development of AI Models  
**Daniel Truhn**

**15:45** Digital therapeutics: clinical applications in oncology  
**Eugenio Santoro**

**16:05** AI and the MDR: between compliance and liability  
**Francesca Gennari**

**16:25** Discussion

**16:40** Coffee Break **POSTER SECTION**

## session 5

### SPECIAL SECTION AND PROJECTS

*Chairs:* **Giuseppe Lo Russo**, **Claudia Proto**, **Diego Signorelli**

**17:20** Accelerating Clinical Trials with AI-powered medical platforms for personalized dosing and Digital Twins  
**Dean Ho**

**17:40** Updates on the I3LUNG Horizon Europe Project  
**Leonardo Provenzano**

**17:50** Patients Decision Aid using AI tools  
**Dario Monzani**

**18:00** Discussion

## session 6

### AWARDS (NO CME SESSION)

*Chairs:* **Giuseppe Viscardi**, **Alessandro De Toma**, **Roberto Ferrara**

**18.10** Introduction

**18:15** Deep Learning-Based Tool for Detection and Discrimination of Breast Microcalcification on Mammography  
**Filippo Pesapane**

**18:20** Modelling toxicity after prostate cancer radiotherapy using genetically guided Voxel-Based Analysis  
**Nicola Rares Franco**

**18:25** Best poster award  
**The winner**

**18:30** Farewell and take-home messages  
**Arsela Prelaj**