GENERAL INFORMATION

STUDIO CONGRESSI srl
ORGANIZING SECRETARIAT

MED TECH SCIENCE srl
CME PROVIDER (ID Ref.: 752)

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REGISTRATION

If you wish to participate in the conference, please access the platform: **https://sc.qlearning.it**
Click on "**Register**", fill in the requested data and create your account. An e-mail confirming your registration will be sent within 24 hours.
Your registration to the course is valid only after paying the admission fee. Please visit also:
http://www.studio-congressi.com/calendario_eventi.php

CME CREDITS

- **CME REF. NUMBER:** 752 - **315010**
- **CME CREDITS:** 17
- **ATTENDEES:** Medical Doctors, Physicists, Engineers, Mathematicians, Statisticians, Computer Scientists.
- **FIELDS OF INTEREST:** Radiology, Radiotherapy,
- Nuclear Medicine, Surgery, Oncology, Neuro-radiology, Physics, Engineering, Math.

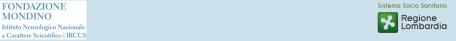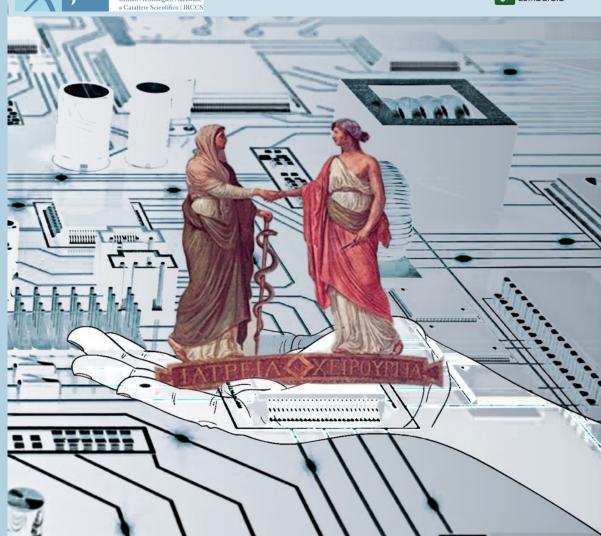## MAX. NUMBER OF PARTICIPANTS: 40

Endorsed by:

UNIVERSITÀ DI PAVIA

RADIOMICS TOOLBOX:
WORKFLOW & QUALITY MANAGEMENT
Pavia, 8-9-10 September 2021

DAY 1 : 8 September 2021

MORNING SESSION

08:30 Participants' registration

09:00 Welcome

Introduction

Anna PICHIECCHIO – Lorenzo PREDA - Andrea FILIPPI

MODERATORS ~ G. MAGENES, F. CALLIADA

09:30–10:00 Fundamentals of Radiomics in Medical Images

A. LASCIALFARI

10:00–10:30 How radiomics could change our approach to medical imaging

R. ORECCHIA

Methods

10:30–11:00 Evaluating machine learning models **R. BELLAZZI**

11:00–11:15 **Coffee break**

MODERATORS ~ L. PAVARINO, E. D'ANGELO

11:15–11:45 Machine learning methods in Radiomics: supervised and unsupervised approaches **F. MAMBRETTI**

11:45–12:30 Deep learning for Biomedical Images **S. GUALANDI**

12:30–13:30 *Sponsored lecture 1*

AIforCOVID: predicting the clinical outcomes in patients with COVID-19 applying AI to chest-X-rays. An Italian multicenter study, N. C. D'AMICO, Centro Diagnostico Italiano S.p.A., Bracco Imaging S.p.A.

13:30–14:30 **Lunch**

AFTERNOON WORKSHOP

14.30–17.30 **ARTIFICIAL INTELLIGENCE APPROACH FOR MEDICAL USE**

M. GROSSI/D. M. REBUZZI

17:30 Visit at the Golgi Museum

19:00 Happy hour - "Get together"

DAY 2 : 9 September 2021

MORNING SESSION

MODERATORS ~ G. RIZZO, S. FIGINI

08:30–09:00 Feature extraction: hand-crafted/engineered versus deep learning **E. SCALCO**

09:00–09.30 Analysis of small dataset in radiomics and machine learning **A. RETICO**

09:30–10:00 Biophysics inspired neural network **G. CASTELLANI**

10:00–10:30 **Coffee break**

MODERATORS ~ G. TOSCANI, R. BELLAZZI, A. LASCIALFARI

10:30–11:00 Principles of image based Brain Modeling

E. D'ANGELO

11:00–11:30 Features for modeling brain pathologies

N. OXTOBY

11:30–12:00 Quantification of Nuclear Imaging in Neurology

A. CHINCARINI

12:00-13:00 *Sponsored lecture 2*

Easing the workflow of radiomics analysis through QUIBIM Precision Platform, A. JIMENEZ, ELSE Solutions s.r.l.

13:00-14:00 **Lunch**

AFTERNOON WORKSHOP

14.00–17.00 **BODY STRUCTURE SEGMENTATION & BRAIN DYNAMICS SIMULATION**

Segmentation
C. BORTOLOTTO/A. LANCIA/L. BIANCHINI

Brain dynamics simulation using **The Virtual Brain**
F. PALESI/R.M. LORENZI/A. MONTEVERDI

20:00 **Social dinner**

Artificial Intelligence for healthcare, B. TAMERSOY, Siemens Healthcare

MORNING SESSION
Moderators ~ A. FILIPPI, V. VALENTINI

08:00-09:00 Radiomic and radiogenomic features in Oncology

Guest of Honor **P. LAMBIN**

09:00-09:30 Radiomics: the in-vivo non-invasive biopsies for

personalized medicine **I. CASTIGLIONI**

09:30-10:00 Integrating radiomics in clinical trials in oncology

L. BOLDRINI

10:00-10:30 **Coffee Break**

Moderators ~ S. BASTIANELLO, S. PAPA

10:30-11:00 Applications in Neurology of quantitative Magnetic

Resonance Imaging **C. GANDINI**

11:00-11:30 Translational research in neurodegenerative diseases:

ready for "prime time"? **S. CAPPA**

11:30-12:30 *Sponsored lecture 3*

**Sonography & Artificial Intelligence: Design and Opportunities
of Decision Support Systems in gynecology,
R. BELLACOSA MAROTTI, SynDiag**

12:30-14:00 **Lunch**

AFTERNOON WORKSHOP

14.00–17.00 **MACHINE LEARNING APPLICATIONS FOR QUANTITATIVE MRI**

Neural networks for automatic segmentation
A. AGOSTI/M. PAOLETTI
Radiomics features extraction and machine learning methods
P. FELISAZ/G. COLELLI

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SYNOPSIS

Radiomics and artificial intelligence (AI) are currently revolutionising the way we look at big data and our approach in the understanding of diseases, connecting imaging metrics, biological biomarkers, genetics and clinical scores. Radiomics emerged as a translational field of research with the aim of extracting mineable data from clinical images, with initial specific attention to oncologic imaging, but soon expanded its application to all spheres of imaging. Beyond the initial focus on conventional imaging sequences, the technological advances are such that this field needs to further expand itself to embrace all kinds of quantitative imaging mapping solutions.

The application of AI is further sustaining the evolution of radiomics and promises to boost its applications, progressively proving itself to be crucial in the interplay between radiology and other medical and scientific disciplines in supporting the understanding of pathological mechanisms of diseases as well as potentially predicting clinical outcomes.

The availability of such a large amount of data poses several issues and highlights the need to improve our abilities in building and organizing adequate datasets, extracting features and signatures as well as optimizing their analysis and interpretation by correctly setting up a robust "pipeline". Another critical issue in modern radiomics/AI based medical research is paving the way to translating these results into clinical practice.

The aim of this three-day School, coordinated by the University of Pavia, is to respond to these needs of a robust pipeline with quality control in order to translate research evidence into clinical practice. In this arduous attempt, the school will provide the attendants a complete "toolbox" to operate in this field. The technical steps will be explored in detail, ranging from data collection, data organization, analysis, feature extraction and data presentation, both from a technical/operational perspective as well as from a medical/interpretative one. Special attention will be paid not only to the pipeline but also to quality assurance in order to ease an adequate translation of evidence into clinical practice.

With the contribution of:

REGISTRATION

- ACCESS THE PLATFORM https://sc.qlearning.it
- CLICK ON "REGISTER"
- FILL IN THE REQUESTED DATA AND CREATE THE ACCOUNT

IMPORTANT

In order to participate in this course, we would like to remind you to pay the **admission fee** and fill in the billing information.
An e-mail confirming your registration will be sent within 24 hours.
After receiving the registration email, please refer to the following steps:

- ACCESS THE PLATFORM WITH THE USER ID AND PASSWORD CHOSEN DURING REGISTRATION;
- CLICK ON THE "**ON-SITE EVENTS**" ICON AT THE BOTTOM OF THE PAGE;
- CLICK ON THE "**COURSE BROCHURE**" ICON AND TYPE THE FOLLOWING ACCESS CODE: **IRCCSP/21.**

REGISTRATION DEADLINE: 30 June 2021

REGISTRATION FEES (22% VAT included)
please tick the appropriate box

☐ **320 Euro**

☐ **160 Euro (only for junior doctors and graduate students)**

The registration fee includes:

Participation in the conference (from Sept. 8 throughout Sept. 10, 2021)
Coffee Break, Lunch, Welcome cocktail and visit at the Golgi Museum (1st DAY)
Coffee Break, Lunch and Dinner (2nd DAY)
Coffee Break and Lunch (3rd DAY)
Certificate of Attendance

PAYMENT

A copy of the bank transfer must be carried out and sent to the Organizing Secretariat STUDIO CONGRESSI SRL:

⇒ **BANK NAME** Intesa San Paolo, Viale C. Battisti, 18 - Pavia (IT)
⇒ **IBAN** IT86X0306911310000099728448
⇒ **Purpose of the Payment** Conference Registration "RADIOMICS TOOLBOX" 8-9-10 SEPT. 2021, PAVIA (IT)

PayPal payment also available

Important: please remember to specify your role (Jr. doctor or graduate student/other) by ticking the appropriate box.

A copy of the bank transfer must be sent to the Organizing Secretariat STUDIO CONGRESSI s.r.l. Via fax +39 (0)382 303082 or e-mail info@studio-congressi.com

BILLING INFORMATION

A payment receipt will be sent to you upon receipt of the registration fee:

Please indicate:
Participant's name & surname: _____

Name of the Company (in case the registration fee is sponsored by a Pharmaceutical Company, public authority or private company):

_____
_____

Billing Address:

_____
Town: _____ Zip code _____ State: _____
Phone: _____ E-mail: _____
Fiscal Code: _____ VAT number: _____
Single Code for the Electronic Invoicing: _____

The undersigned agrees to allow Studio Congressi s.r.l. to use the information provided above in accordance with Italian law nr. 679/2016 and successive modifications and amendments.

Date: _____ Signature: _____