

GENERAL INFORMATION

STUDIO CONGRESSI srl
ORGANIZING SECRETARIAT

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

Phone.: + 39 (0)382 21424

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info@studio-congressi.com - www.studio-congressi.com

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:



Associazione
Italiana
Radioterapia
Oncologica



Gruppo Nazionale di Bioingegneria



ESTRO



Istituto Nazionale di Fisica Nucleare



UNIVERSITÀ
DI PAVIA

RADIOMICS TOOLBOX: WORKFLOW & QUALITY MANAGEMENT

Pavia, 8-9-10 September 2021



Fondazione IRCCS
Policlinico San Matteo

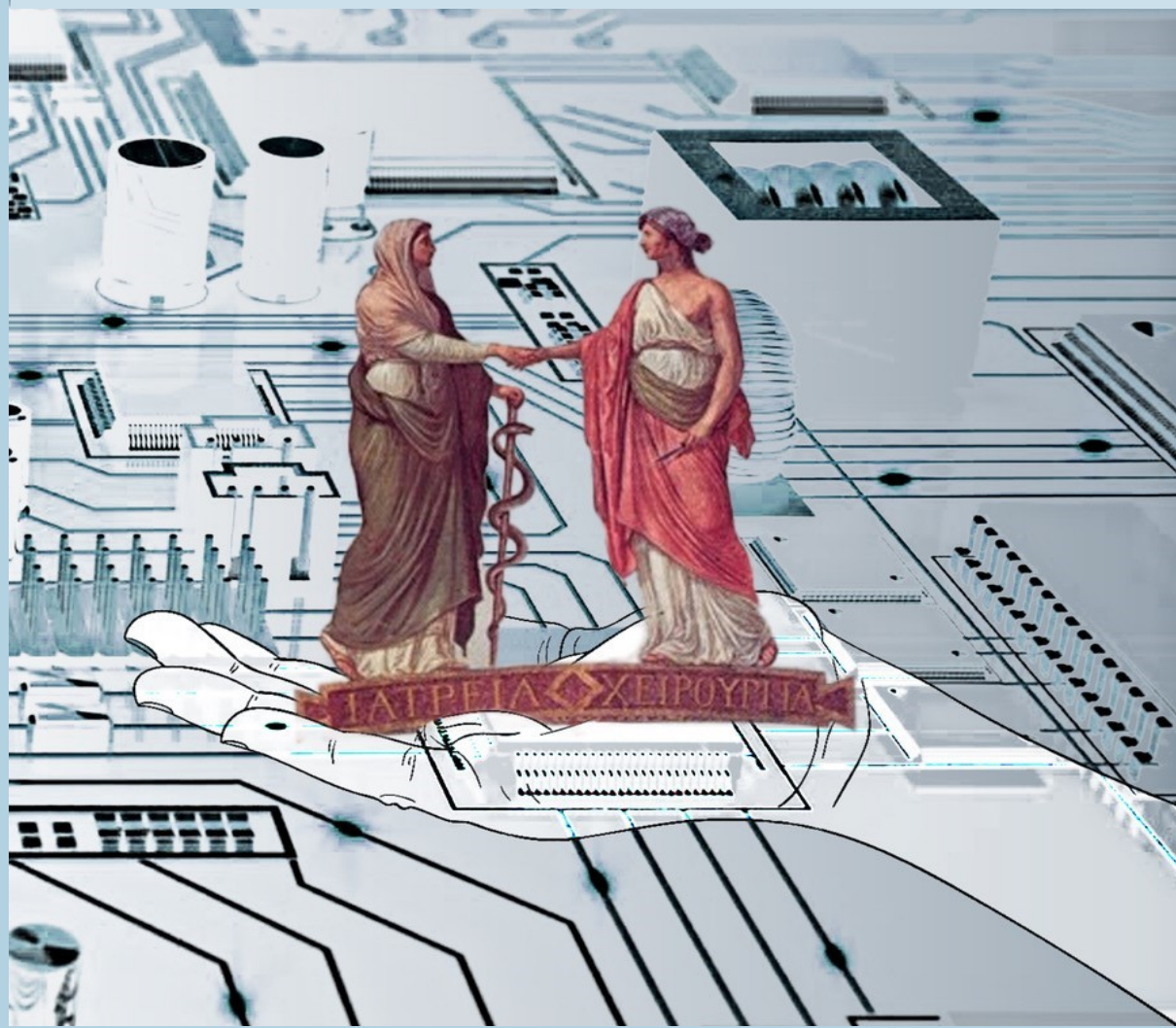
Sistema Socio Sanitario



Regione
Lombardia



FONDAZIONE
MONDINO
Istituto Neurologico Nazionale
a Carattere Scientifico | IRCCS



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**

AlforCOVID: 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"

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. BORTOLOTTI/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

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:



ORGANIZERS**Anna PICHIECCHIO**

Università degli Studi di Pavia ~ IRCCS Fondazione Mondino Pavia

Lorenzo PREDA

Università degli Studi di Pavia ~ IRCCS Policlinico San Matteo Pavia

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Università degli Studi di Pavia

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Università degli Studi di Pavia

Daniela M. REBUZZI

Università degli Studi di Pavia & INFN, Sezione di Pavia

Giuseppe TOSCANI

Università degli Studi di Pavia

Abramo AGOSTI ~ Università degli Studi di Pavia

Linda BIANCHINI ~ Università degli Studi di Pavia

Rosiliari BELLACOSA MAROTTI - R&D Director SynDiag

Luca BOLDRINI ~ Fondazione Policlinico Universitario "A. Gemelli", Roma

Chandra BORLOLOTTO ~ IRCCS Policlinico San Matteo Pavia

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Isabella CASTIGLIONI ~ Università degli Studi Milano Bicocca

Andrea CHINCARINI ~ INFN Genova

Giulia COLELLI ~ Università degli Studi di Pavia

Natascha C. D'AMICO ~ Centro Diagnostico Italiano S.p.A., Bracco Imaging S.p.A.

Paolo FELISAZ ~ Ospedale Fatebenefratelli e Oftalmico, Milano

Stefano GUALANDI ~ Università degli Studi di Pavia

Michele GROSSI ~ IBM, Università degli Studi di Pavia, INFN Pavia

Ana JIMENEZ PASTOR ~ R&D Engineer, QUIBIM, Valencia

Philippe LAMBIN ~ Maastricht University

Andrea LANCIA ~ IRCCS Policlinico San Matteo Pavia

Roberta M. LORENZI ~ Università degli Studi di Pavia

Francesco MAMBRETTI ~ Università degli Studi di Padova

Anita MONTEVERDI ~ Università degli Studi di Pavia

Roberto ORECCHIA ~ IRCCS Istituto Europeo di Oncologia Milano

Neil OXTOBY ~ Dept. of Computer Science, University College London

Fulvia PALES ~ Università degli Studi di Pavia

Matteo PAOLETTI ~ IRCCS Fondazione Mondino Pavia

Sergio PAPA ~ Centro Diagnostico Italiano di Milano

Alessandra RETICO ~ INFN Pisa

Giovanna RIZZO ~ Istituto di Tecnologie Biomediche CNR Milano

Elisa SCALCO ~ Istituto di Tecnologie Biomediche CNR Milano

Birgi TAMERSOY ~ Sr. Key Expert Artificial Intelligence Siemens

Vincenzo VALENTINI ~ Università Cattolica S. Cuore, Roma

Organizing Secretariat
STUDIO CONGRESSI SRL

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

CONFERENCE VENUE (MORNING SESSIONS)

FONDAZIONE ISTITUTO NEUROLOGICO CASIMIRO MONDINO

Aula Berlucci & Aula Mondino

27100 Pavia PV - Phone: 0382 3801 - info@mondino.it - www.mondino.it

CONFERENCE VENUE (AFTERNOON WORKSHOPS)

FACOLTA' DI INGEGNERIA

Aula B1 & Aula B2

Via Adolfo Ferrata, 5 - 27100 Pavia PV - Phone: 0382 985500

HOW TO GET TO PAVIA

AIRPLANE The town of Pavia does not have its own airport. You need to reach one of the following airports: **Milan Linate**, **Milan Malpensa** or **Milan Bergamo**. The [Linate shuttle](#) bus service connects **Linate airport** to **Milan Central Station** (Milano Stazione Centrale). The [Malpensa Shuttle](#) bus service connects **Malpensa Terminal 1 and Terminal 2** to **Milan Central Station**. The [Malpensa Express](#) train service takes you directly to **Milan Central Station**. From **Milan Bergamo** airport there is also a bus service to Milan Central Station.

TRAIN Pavia is on the **Milano-Genova railway line**; a daily train service is available from **Milano Central Station** to **Pavia**. The trip by train takes about 30 minutes. For the timetables, please click here www.trenitalia.com

CAR Pavia is on the **A7 highway**, 30 kilometers south from **Milan Ring Road** (Tangenziale). The exit to Pavia is **Bereguardo/Pavia Nord**.

BUS The town of Pavia has an efficient bus service. For more info, please refer to the following website: <http://pavia.autoguidovie.it/>

TAXI Radio Taxi Pavia
 Phone.: 0382 576.576 - 0382 577799

HOTEL INFORMATION

With regard to the hotel reservation, please note that Studio Congressi has provisionally booked a limited number of rooms for our guests. All payments for bookings will be carried out by the guests directly at the hotel. As part of your booking, you may be required to provide details of a credit or debit card. **The rooms have been booked until June 30, 2021.**

SUGGESTED HOTELS & UNIVERSITY COLLEGES:

COLLEGIO UNIVERSITARIO SANTA CATERINA

RESIDENZA UNIVERSITARIA BIOMEDICA

Via Giuseppe Maria Giulietti, 412 - Phone.: 0382 516762

COLLEGIO NUOVO

Via Abbiategrasso, 404 - 27100 Pavia PV - Phone.: 0382 5471

COLLEGIO ALESSANDRO VOLTA

Via Adolfo Ferrata, 17 - 27100 Pavia PV - Phone.: 0382 548511

HOTEL MODERNO (near Pavia Train Station)

Viale Vittorio Emanuele II, 41 - 27100 Pavia PV - Phone.: 0382 303401

For more info, please contact the Organizing Secretariat
Studio Congressi s.r.l.
Phone 0382 21424 - info@studio-congressi.com
Mobile: 351 8055151

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: _____