

## GENERAL INFORMATION

**STUDIO CONGRESSI srl**  
ORGANIZING SECRETARIAT

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

Phone.: + 39 (0)382 21424

Fax: + 39 (0)382 303082

info@studio-congressi.com - [www.studio-congressi.com](http://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](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*

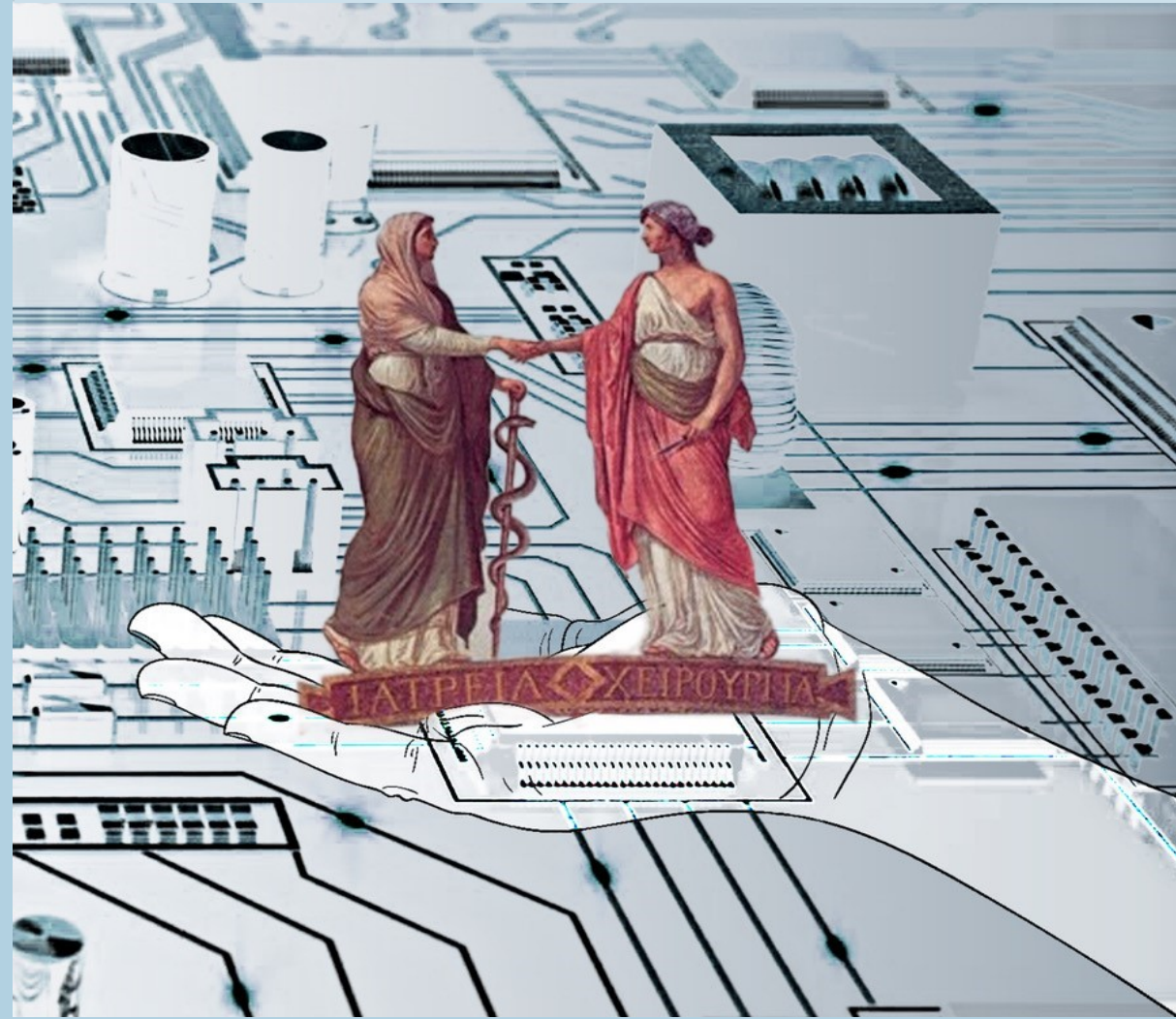


FONDAZIONE  
MONDINO  
Istituto Neurologico Nazionale  
a Carattere Scientifico | IRCCS

Fondazione IRCCS  
Policlinico San Matteo

Sistema Socio Sanitario

Regione  
Lombardia



**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 PREDÀ**

Università degli Studi di Pavia ~ IRCCS Policlinico San Matteo Pavia

**Andrea FILIPPI**

Università degli Studi di Pavia ~ IRCCS Policlinico San Matteo Pavia

**SCIENTIFIC COMMITTEE****Stefano BASTIANELLO**

Università degli Studi di Pavia ~ IRCCS Fondazione Mondino Pavia

**Riccardo BELLAZZI**

Università degli Studi di Pavia ~ Fondazione S. Maugeri Pavia

**Fabrizio CALLIADA**

Università degli Studi di Pavia ~ IRCCS Fondazione Mondino Pavia

**Egidio D'ANGELO**

Università degli Studi di Pavia ~ IRCCS Fondazione Mondino Pavia

**Silvia FIGINI**

Università degli Studi di Pavia

**Claudia GANDINI WHEELER KINGSHOTT**

Università degli Studi di Pavia ~ UCL London

**Alessandro LASCIALFARI**

Università degli Studi di Pavia & INFN, Sezione di Pavia

**Giovanni MAGENES**

Università degli Studi di Pavia

**Luca PAVARINO**

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 BORTOLOTTO** ~ IRCCS Policlinico San Matteo Pavia

**Stefano CAPPÀ** ~ Università degli Studi di 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

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**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 PALESI** ~ 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**

CME Provider (RIF. 752)  
**MED TECH SCIENCE SRL**

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### CME CREDITS

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- 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](mailto:info@mondino.it) - [www.mondino.it](http://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](http://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](mailto: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 (1<sup>st</sup> DAY)*  
*Coffee Break, Lunch and Dinner (2<sup>nd</sup> DAY)*  
*Coffee Break and Lunch (3<sup>rd</sup> 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](mailto: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):  
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**Billing Address:**

Town: \_\_\_\_\_ Zip code \_\_\_\_\_ State: \_\_\_\_\_

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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: \_\_\_\_\_