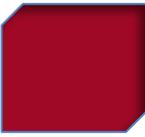# Optimization of AI-driven predictivity and confirmation systems for planning and monitoring imaging guided therapies of liver tumors

Supervisor: Prof. Chiara Floridi

Department of Odontostomatologic and Specialized Clinical Sciences

https://disco.univpm.it/welcome-to-department-of-odontostomatologic-and-specialized-clinical-sciences/

HR EXCELLENCE IN RESEARCH

UNIVERSITÀ POLITECNICA DELLE MARCHE

Prof. Chiara Floridi

Position: AssociateProfessor [SSD/Area]
Institution: Università Politecnica delle Marche (UNIVPM), Italy

Associate Professor in Radiology, DISCO, UNIVPM

Chair of General and Special Radiology course of **Dentistry and Orthodontics degree program** based in the Faculty of Medicine, Università Politecnica delle Marche

Interventional Radiologist in Azienda Ospedaliero-Universitaria delle Marche.

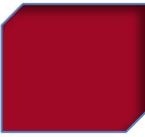Supervisor of Medical students and radiology fellows.

Senior researcher with expertise in **Interventional and Diagnostic Radiology** with special emphasis on **Interventional Radiology Oncology**.

108 **peer-reviewed research articles** with about 2,000 citations received **https://orcid.org/0000-0002-6863-9471** (https://www.scopus.com/authid/detail.uri?authorId=54969549000, H-index = 28 according to Scopus).

Head of Computed Tomography Italian **Computed Tomography Subspecialty Section of the Italian Society of Medical and Interventional Radiology.** Involved in several national and international projects with great experience ininternational and multicentre studies.

HR EXCELLENCE IN RESEARCH

Prof. Chiara Floridi
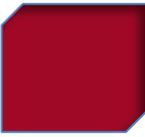
5 Selected Recent Pubblications

1. Cacioppa LM, Boscarato P, Valeri T, Mariotti F, Bruno A, Rossini N, Francavilla G, Aste A, Di Lello O, Rosati M, Felicioli A, Vento V, Gatta E, Giantomassi L, Paci E, Candelari R, **Floridi C.** *Endovascular treatment of true visceral artery aneurysms: a decade of experience and key outcomes from a high- volume single center*. CVIR Endovasc. 2026 Feb 28;9(1):21.

2.
    Cacioppa LM, Mariotti F, Mari A, Bruno A, Rossini N, Francavilla G, Macchini, M, Rosati M, Matteagi D, Veccia P, Bindi E, Galosi AB, Cobellis G, Candelari R, **Floridi C.** *A step toward diagnostic reference levels for male varicocele embolization: dosimetric comparison across two generations of angiographic systems*. Radiol Med. 2026 Jan 8.

3. **Floridi C**, Cacioppa LM, Rossini N, Macchini M, Bruno A, Agostini A, Consoli V, Inchingolo R, Acquafredda F, Nicolini D, Schiadà L, Svegliati Baroni G, Candelari R. *Microwave ablation followed by cTACE in 5-cm HCC lesions: does a single-session approach affect liver function?* Radiol Med. 2024 Aug;129(8):1252-1264

4. **Floridi C**, Cellina M, Irmici G, Bruno A, Rossini N, Borgheresi A, Agostini A, Bruno F, Arrigoni F, Arrichiello A, Candelari R, Barile A, Carrafiello G, Giovagnoni A. Precision Imaging Guidance in the Era of Precision Oncology: An Update of Imaging Tools for Interventional Procedures. J Clin Med. 2022 Jul 12;11(14):4028.

5.
    Floridi C, Carnevale A, Fumarola EM, Schampaert S, Fontana F, De Palma D, Del Sole A, Giganti M, Carrafiello G. *Percutaneous Lung Tumor Biopsy Under CBCT Guidance with PET-CT Fusion Imaging: Preliminary Experience.* Cardiovasc Intervent Radiol. 2019 Nov;42(11):1644-1648.

Research Interests & Potential MSCA Area
- Imaging Guindance
- Artificial Intelligence
- Virtual Reality

-> Potential project domain: **[Radiology-Biomedical Engineering-Informatics-Biophysics]**

The Department of Odontostomatologic and Specialized Clinical Sciences

Director: Prof. Giovanni Cobellis

2026

AT A GLANCE

DISCO

Last three years 2023-24-25

15 Scientific Areas
MEDS-07/B, MEDS-14/B, MEDS-14/C, MEDS-16/A, MEDS-22/A, MEDS-22/B, MEDS-20/A, MEDS-21/A, MEDS-26/A, MEDS-08/C, MEDS-26/B, BIOS-07/A, BIOS-08/A, BIOS-09/A, BIOS-10/A, PHYS-06/A

741 Publications

>2.900.000 € Research income

45 Staff

48 PhD, Post-doc, Research fellows

Teaching programs for **undergraduates** in Medicine and Surgery, Dentistry, Professional education, Physiotherapy, Dietetics, Dental hygiene, Nursing, Speech Therapy, Obstetrics, Biomedical laboratory techniques, Prevention techniques in the environment and workplace, Medical, Imaging and Radiation Therapy techniques.
Postgraduate Medical Training specialty in Gynecology and Obstetricia, Medical Physics, Pediatrics, Pediatric Surgery, Radiodiagnostics, Urology, Nuclear Medicine, Oral Surgery, Sport Medicine

1 Centre of Artificial Intelligence & Digital Health in Medicine and Biology AIDH

1 Centre of Health Education and promotion (CIESS)

Master's Degree in:
- **Nutrition and Dietetics**
- **Applied Nutrition and Dietetics**
- **Sports Applied Nutrition and Dietetics**
- **Vegetarian Nutrition and Dietetics**
- **Expert in Diet Planning**
- **Nutrition in Physiological condition**
- **Nutrition in Patological condition**

8 Clinical research Units

19 Research Laboratories

6 Clinic Laboratories

UNIVERSITÀ POLITECNICA DELLE MARCHE

<u>Diagnostic and Interventional Radiology Department</u> — UNIVPM

A multidisciplinary environment supporting research in:

- Liver Tumors
- Vascular Pathologies
- Artificial Intelligence in Biomedical Imaging
- New Technologies for Iinterventional Radiology

Research Group Description

The group is currently formed by a **full Professor, four Associate Professors and four Researchers with** strong international network and collaborations

Key Infrastructure & Laboratories

- Two fully equipped angiosuites equipped with Cone-beam computed tomography with advanced needle guidance and vessel navigator softwares
- Three Dual energy Dual Source and Rapid Switching computed tomography scans;
- Three MR 1.5T scanners;
- One PET-MR 3.0T scanner;

Training & Career Development Opportunities
Access to doctoral school courses, transferable skills training
Support for Open Science, dissemination, and stakeholder engagement
Opportunities for **secondments** and **non-academic placement**

hr
HR EXCELLENCE IN RESEARCH

Supervisor: Chiara Floridi

Project idea - **Optimization of AI-driven predictivity and confirmation systems for planning and monitoring imaging guided therapies of liver tumors**

Overall Goal

This project aims to enhance **AI-powered predictive models** and **real-time confirmation systems** to improve planning, execution, and monitoring of **imaging-guided therapies for liver tumors**. By integrating **multi-modal imaging data** with advanced **AI algorithms**. The project will refine treatment **personalization**, **optimize decision-making**, and **enhance therapeutic outcomes**.

Specific Objectives

- Develop and optimize **AI-driven models** for **predicting treatment response** in **liver tumor** therapies.
- Enhance **real-time confirmation systems** to support interventional radiologists in **decision-making**.
- Integrate multi-omics and imaging data to **refine predictive accuracy**.
- **Improve AI interpretability and clinical usability** for **personalized therapy planning**.

Novelty & Interdisciplinarity

Combines expertise in **Interventional radiology/tumor local therapies + Artificial Intelligence/decision making systems** with strong potential for academic + non-academic impact

Expected Outcomes

High-impact publications
New methodology / prototype / dataset
Enhanced career perspectives for the fellow