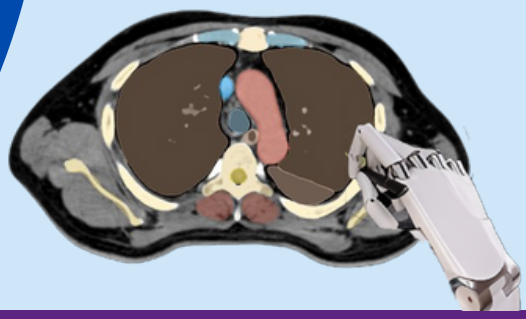
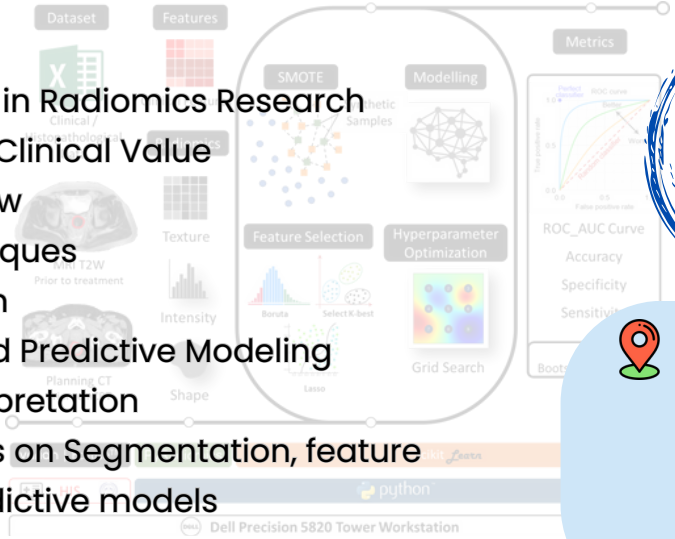
1ST WORKSHOP ON RADIOMICS AND AUTO SEGMENTATION

14 & 15TH NOVEMBER 2025



This two-day workshop is to introduce clinicians, medical physicists and imaging researchers to radiomics and autosegmentation with an emphasis on practical implementation and critical understanding. Participants will learn how to extract and analyze quantitative imaging features to improve diagnosis, prognosis, and treatment planning. This is a **level 1 workshop** and will include hands-on sessions using accessible tools for image segmentation and radiomics feature extraction, model building using machine learning and interpretation, with minimal coding skills requirement.

KEY TOPICS COVERED



- How to Formulate Questions in Radiomics Research
- Radiomics Fundamentals & Clinical Value
- Radiomics Workflow Overview
- Image Segmentation Techniques
- Radiomics Feature Extraction
- Machine Learning Basics and Predictive Modeling
- Limitations and Critical Interpretation
- Hands-On Practical Sessions on Segmentation, feature extraction, and building predictive models

SAVE THE DATE

Time
9:00 AM to 4:30 PM

Venue
17- Classroom
18-Residents room
B0004 (Basement)
Radiation Oncology
Ranipet Campus, CMC Vellore

Who Should Attend?

Clinicians (e.g Oncologists, Radiologists, etc) physicists, and medical imaging researchers who are interested in integrating quantitative imaging analytics into health care decision making.

Prerequisites

Basic familiarity with medical imaging (Radiology, DICOM etc) recommended.
Laptops should be brought for the hands-on workshop with Google Colab setup completed before the workshop. Instructions will be provided.

Registration

Send an email to cmcbmiuconnect@cmcvellore.ac.in .
First-come first serve basis. **Limited seats available.**
Payment link will be provided and through other means not allowed.
Registration fee: Rs 5000 (Rs 2500 - CMC staff) excluding GST.
Last date of registration **October 30th, 2025**

ORGANIZED BY

Christian Medical College Vellore
Radiation Oncology Unit 2

QIRAIL
(Quantitative Imaging Research and AI Lab)

Biomedical Informatics Unit

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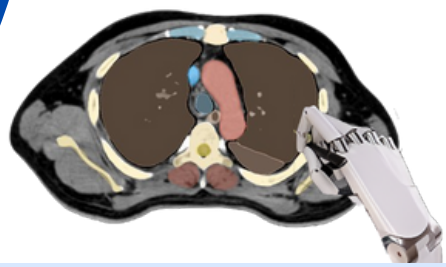

Venue : 17- Classroom, 18-Residents room,
B0004 (Basement), Radiation Oncology, Ranipet Campus, CMC Vellore

DAY 1 - 14/11/2025

Time	Session Title	Facilitator(s)	Key Focus/Description
09:00 AM - 09:30 AM	Inauguration		
09:40 AM- 10:00 AM	Introduction to Radiomics	Dr Hannah Mary Thomas	Review of basic concepts
10:00 AM- 10:30 AM	Research planning: How to formulate a question for AI research	Dr Balu Krishna S	Hypothesis design, Data requirements, Sample size
10:30 AM - 11:00 AM	Segmentation of Medical Images	Dr Jeny Rajan, NIT Suratkal	Review of segmentation techniques
11:00 AM- 11:30 AM	Break		
11:30 AM - 11:45 AM	Need for segmentation in clinical scenario	Dr Jino Wilson	Segmentation to support clinical decision-making
11:45 AM - 12:15 PM	Demo of Segmentation applications		
12:15 PM - 12:45 PM	Hand crafted Radiomics vs Deep Radiomics	Dr Varsha Gouthamchand, Maastrict University	Difference between the two Radiomics types, when to use, practical considerations
12:45 PM -01:30 PM	Lunch		
01.30 PM - 01:45 PM	Group photo		
02:00 PM - 04:00 PM	Hands-on: Segmentation on 3D Slicer - SlicerRadiomics	QIRAIL Team	Reading/manipulating images, segmentation examples (CT, MRI)
04:00 PM - 04:15 PM	Tea		

Note : Schedule is subject to change

DAY 2 - 15/11/2025

Time	Session Title	Facilitator(s)	Key Focus/Description
08:30 AM - 08:45 AM	Recap	Dr Simon Pavamani	Highlights from Day 1
08:45 AM- 09:15 AM	Building an AI Models	Dr Hannah Mary Thomas	Basics of AI models, Data Handling, Choice of ML classifiers
09:15 AM- 09:45 AM	How to Evaluate AI Models?	Mr Asjad Nabeel NIT Suratkal	Segmentation and Classification models; Cross validation, Performance metrics
09:45 AM - 10:15 AM	What it takes to do Radiomics ?	Dr Rajendra Benny	Practical considerations in doing a radiomics study
10:15 AM- 10:45 AM	Break		
10:45 AM - 11:15 AM	Explainability of AI Models	Dr Hannah Mary Thomas	Need for explainability, Methods to improve Explainability, (SHAP, LIME)
11:15 AM - 11:45 AM	Reporting Guidelines for AI/ML studies	Dr Hannah Mary Thomas	Quality gaps, reporting guidelines and checklists
11:45 AM - 12:15 PM	Group activity		Published study walkthrough
12:15 PM - 01:00 PM	Lunch		
01.00 PM - 02.00 PM	Hands-On Part 1	QIRAIL Team	Data QC, Feature extraction and Pre-processing,
02:00 PM - 03:00 PM	Hands-On Part 2	QIRAIL Team	Model Building & Evaluation
03:00 PM - 03:15 PM	Exit Quiz		
03.15 PM - 03:30 PM	Closing remarks		
03.30 PM - 03:45 PM	Tea		

Note : Schedule is subject to change

1ST WORKSHOP LEVEL 1