

Artificial Intelligence in Medicine

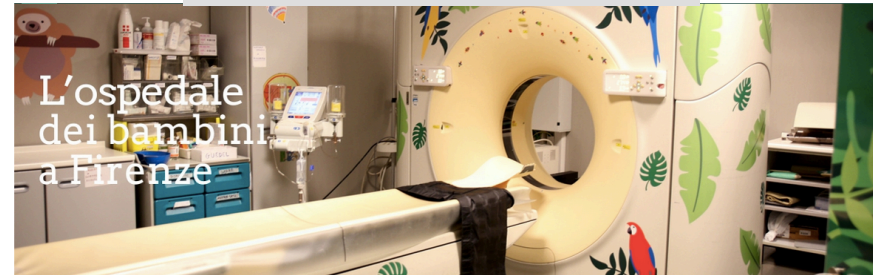


AIM

INFN-CNS5
2019-2021

UO FIRENZE

AIM: FIRENZE group description



Istituto Nazionale di Fisica Nucleare | Sezione di Firenze



AIM: FIRENZE group description

Medical Team	Dott.ssa Daniela Greto Dott.ssa Silvia Scoccianti Prof.ssa Monica Mangoni
Physics Meyer Team	Dott. Antonio Ciccarone Dott. Paolo Dicarolo
Physics INFN-UNIFI Team	Dott.ssa Silvia Calusi Dott. Stefano Piffer Prof.ssa Stefania Pallotta Prof.ssa Cinzia Talamonti

AIM: Project Implementation

		I year	II year	III year	
<i>Networking and Continuous Training</i>	AIM+	T+.1	*	*	*
		T+.2	*	*	*
<i>Data harmonization</i>	AIM1	T1.1	*	*	*
		T1.2	*	*	
<i>Quantification</i>	AIM2	T2.1	*	*	
		T2.2	*	*	*
<i>Predictive Models</i>	AIM3	T3.1	*	*	*
		T3.2	*	*	*
		T3.3	*	*	*
		T3.4	*	*	

AIM 3: Predictive models

AIM3.T1 - Predictive models for Radiation Therapy treatments (FI, GE, PI)

Milestones

	I year	II year	III year
AIM3	M3.1 (31-12-2019) Creation of database for predictive models for Radiation Therapy treatments	M3.1 (31-12-2020) Software development for the selection of the most important features and first test on data	M3.1 (31-12-2021) Data analysis and study of results obtained in predicting: overall survival, radiation treatment response, distant metastases, recurrences, and radiation-related toxicity
	M3.2a (30-06-2019) Development of a CNN for automatic classification of breast density according to the 4 BIRADS classes	M3.2a (30-06-20) Validation of the CNN on the available database	M3.2a (30-06-2021) Development and validation of a CNN for automatic classification of breast density according to the 4 BIRADS classes on the harmonized database
	M3.2b (31-12-2019) Database creation and development of analysis software for predictive models for Contrast Enhanced Spectral Mammography	M3.2 (31-12-2020) Further patient data acquisition and application of the analysis software on the data acquired on the first year and validation of an automatic classification method	M3.2 (31-12-2021) Application of the analysis software on all data acquired and publication of the results
	M3.3 (31-12-2019) Database creation and development of analysis software for predictive models for transcranial-MR-guided Focused Ultrasound Surgery	M3.3 (31-12-2020) Further patient data acquisition and application of the analysis software on the data acquired on the first year	M3.3 (31-12-2021) Application of the analysis software on all data acquired and publication of the results
	M3.4 (31-12-2019) Development of a pipeline for the integration of multiple omics data in relation to drug target identification	M3.4 (31-12-2020) Application of the pipeline to real patient case studies for personalized targeting	--