

Personal information

Surname	Favali
Name	Margherita
Nationality	Italian

Education

Position	PhD student in Biomedical Engineering at Nearlab, Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB)
From-to	09/2023-in progress
Name and address of university	Politecnico di Milano Piazza Leonardo da Vinci, 32
Project title	Explainable Artificial Intelligence to predict treatment response and survival in NSCLC patients by using multimodal data

Title of qualification awarded	Master degree	
From-to	2020-2023	
Name and type of organization providing education and training	Biomedical Engineering, Politecnico di Milano	
Principal subjects/occupational skills covered	Functional evaluation, Biomedical electronics, Medical informatics, Virtual modelling, Mathematical and numerical methods, Neuroengineering	
Final mark obtained	110/110	
Thesis		
Title	Explainable ML and DL models to predict immunotherapy response in NSCLC patient by using CT scans	
Thesis Summary	The aim of the thesis is contribute to research regarding IO outcome prediction in advanced NSCLC by realizing a binary classification problem in order to characterize each patient as responder or non-responder to therapy by assessing the predictive power of features coming from medical images (CT scans). To accomplish this goal two different pipelines are proposed. The first one (ML	

solution) involves extracting radiomic features from CT scans and utilized them to
fed ML classifiers. The second one (DL solution) aims at using a multimodal
model to directly extract the features from images, referred to as deep learning
features, and perform the classification. Throughout this study, the explainability
and interpretability of both the ML and DL models was prioritized to ensure that
the results are interpretable and can potentially be applied in a clinical practice
setting.

Title of qualification awarded	Bachelor's degree	
From-to	2017-2020	
Name and type of organization providing education and training	Electronics Engineering, University of Modena and Reggio Emilia, Ingegneria "Enzo Ferrari"	
Principal subjects/ occupational skills covered	Electronics, Informatics, Physics, Math, Statistics, Communications	
Final mark obtained	110 cum laude	
Thesis		
Title	The modern transport protocols: comparison between TCP and QUIC	
Thesis Summary	Two network transport protocols are analysed: TCP, which is the most famous and widespread, and QUIC, which is very innovative and designed by Google. Both the packets allow the two hosts engaged in a communication to exchange information. The goal of my thesis was to identify the differences between the two protocols and underline the advantages and disadvantages, both from a theoretical and practical point of views. The analyse the packets exchanged in both the protocols Wireshark software has been used.	

Title of qualification awarded	Diploma
Date	2012-2017
Name and type of organization providing education	Liceo Scientifico -ISS 'Cattaneo dall'Aglio'
Principal subjects/ occupational skills covered	Maths, Physics, Latin, Chemistry, Science, History, English, Italian
Final mark obtained	100/100

Certifications

Certifications of language	Trinity College, B2, 09/2019
knowledge (English)	

Work experiences

Type of employment	Teaching assistant
From-to	02/10/2024-in progress

Name and address of company/university	Politecnico di Milano
Type of business or sector	Course name: Strumentazione Biomedica
Main activities and responsibilities	Exercises lessons

Type of employment	Occasional collaborator
From-to	25/03/2023-31/12/2024
Name and address of company/university	Istituto Nazione dei Tumori Fondazione IRCCS, Milano (MI)
Type of business or sector	Artificial Intelligence for health
Main activities and responsibilities	Data scientist

Type of employment	Master thesis internship
From-to	10/2022-04/2023
Name and address of company/university	Istituto Nazione dei Tumori Fondazione IRCCS, Milano (MI)
Type of business or sector	Artificial Intelligence for health
Main activities and responsibilities	Retrieve clinical and radiomics data (CT scans) to be used in ML and DL algorithms. Experience in AI and medical field thanks to collaboration with medical team

Type of employment	Children educator
From-to	05/2016-10/2017
Name and address of company/university	Onda della Pietra, Castelnovo ne' Monti (RE)
Type of business or sector	Education

Languages

Mother language	Italian
Other language	English

Publications

Author(s) and title	Arsela Prelaj, Vanja Miskovic, Matteo Sacco, Alberto Ferrarin, Aleksandra Zec, Laila C. Roisman, Maria Spector, Leonardo Provenzano, Margherita Favali, Monica Ganzinelli, Melissa Fernández, Enriqueta Felip, Helena Linardou, Martin Reck, Nir Peled, Alex Pearson, Francesco Trovo, Giuseppe Lo Russo, Alessandra Pedrocchi, Marina Chiara Garassino, 13LUNG-PDSS: A multimodal AI-based clinical decision support system for predicting immunotherapy efficacy in metastatic NSCLC, 2025
Publication place	ASCO (poster)
Date of publication	2025

Author(s) and title	A Prelaj, V Miskovic, M Zanitti, F Trovo, C Genova, G Viscardi, S E Rebuzzi, L Mazzeo, L Provenzano, S Kosta, M Favali , A Spagnoletti, L Castelo-Branco, J Dolezal, A T Pearson, G Lo Russo, C Proto, M Ganzinelli, C Giani, E Ambrosini, S Turajlic, L Au, M Koopman, S Delaloge, J N Kather, F de Braud, M C Garassino, G Pentheroudakis, C Spencer, ALG Pedrocchi, Prelaj, A., et al., <i>Artificial Intelligence</i> <i>for predictive biomarker discovery in immuno-oncology: a systematic review</i>
Publication place	Annals of Oncology
Date of publication	January 2024

Author(s) and title	M. Ruggirello, R. Vigorito, G. Francesca Gabriella, G. Calareso, M. Favali , A. Marchianò, <i>Modelli esplicativi di machine learning e deep learning nel predire la risposta alla immunoterapia nei pazienti con tumore polmonare non a piccole cellule mediante l'utilizzo di esami tc</i>
Publication place	SIRM 2024
Date of publication	2024

Author(s) and title	Provenzano L, Favali M, Mazzeo L, Spagnoletti A, Giani C, Calareso G, Ruggirello M, Greco G, Vigorito R, Occhipinti M, Brambilla M, Manglaviti S, Proto C, Lo Russo G, Trovò F, De Braud F, Ganzinelli M, Pedrocchi ALG, Miskovic V, Prelaj A, <i>Explainable Radiomics, machine and deep learning models to predict immune-Checkpoint Inhibitor Treatment efficacy in Advanced Non-Small Cell Lung Cancer Patients</i>
Publication place	ESMO
Date of publication	2023