Curriculum vitae of teaching and scientific activities of Valerio Guarrasi

1. Personal data and curriculum vitae

Personal info

I was born in Palermo, Italy, the 21st of April, 1995. I'm an Italian citizen.
Personal ID: GRRVLR95D21G273M
Address: Via Iberia 47, 00183, Rome, Italy
Mobile: +393466095623, e-mail: valerio.guarrasi@unicampus.it
ORCID: 0000-0002-1860-7447, Scopus: 57219750978

Work experience

From 2023	**Assistant Professor**, Department of Engineering, Università Campus Bio-Medico di Roma. Field: Computer Science and Computer Engineering (ING-INF/05) Research project: “Future Artificial Intelligence Research (FAIR)”.
2023	**PostDoc**, Department of Engineering, Università Campus Bio-Medico di Roma. Field: Computer Science and Computer Engineering (ING-INF/05) Research project: “Artificial intelligence for precision medicine”.
11-12/2022	**Temporary contract**, Department of Engineering, Università Campus Bio-Medico di Roma, Unit of Computational Systems and Bioinformatics. Field: Computer Science and Computer Engineering (ING-INF/05)
2020-2022	**Lead Data Scientist**, GenomeUp, Rome Development of Machine Learning and Deep Learning methods to aid the research for hospitals and medical oriented research groups to solve real-world healthcare problems using medical imaging, genomics, and electronic health records data.
2019-2020	**Data Scientist**, IBM, Rome Development of Machine Learning and Deep Learning methods integrated in the Watson AI products to validate PoCs for new potential clients.

Other Academic Roles

From 2023	**Third Mission Representative** of the Research Unit of Computer Systems and Bioinformatics at the Campus Bio-Medico University of Rome. In this role, I am responsible for public outreach, technology transfer, and promoting the societal impact of research conducted within the unit.
From 2023	**Qualified Expert** for the evaluation of project proposals and projects funded by the calls managed by ARTES 4.0 (Advanced Robotics and Enabling Digital Technologies & Systems, Recognized Association). My responsibilities include assessing the technical and scientific merit of proposals and ensuring the alignment of projects with the strategic goals of ARTES 4.0.

Education

2019-2023	**PhD in Data Science**, Sapienza University of Rome Final Mark: Excellent cum laude Thesis: “Multimodal Deep Learning for Medical Imaging” Research Exchange: Department of Radiation Sciences, Umeå University
2017-2019	**Master's Degree in Data Science**, Sapienza University of Rome Final mark: 110/110 cum laude - Honors Program Thesis: “Generalized Model for Temporal Motifs” Research Exchange: Department of Computer Science, University of New York, Buffalo
2014-2017	**Bachelor's Degree in Management Engineering**, Sapienza University of Rome Final Mark: 109/110
2006-2016	**Master's Degree in Piano**, Conservatoire Santa Cecilia, Rome
2009-2014	**Technological Scientific High School Diploma**, High School V. Colonna, Rome Final Mark: 98/100.

Post-master courses

I attended at the following PhD schools and courses:

2021	**ALGADIMAR: European Summer School on Learning in Games, Markets, and Online Decision Making**, Sapienza University of Rome, Director: prof. S. Leonardi.
2021	**ACDL 2021: 4th Advanced Online & Onsite Course on Data Science & Machine Learning**, Certosa di Pontignano, Director: prof. G. Nicosia.
2021	**M2L: Mediterranean Machine Learning Summer School**, AI Education Foundation - University of Milano-Bicocca, Director: prof. M. Palmonari.
2020	**RegML 2020: Regularization Methods for Machine Learning**, University of Genova, Director: prof. S. Vigogna.
2018	**Training Camp SAS**, Sapienza University of Rome, Directors: prof. L. Tardella.
2018	**Training Camp Facebook**, Sapienza University of Rome, Director: prof. F. Silvestri.
2017	**Statistical Programming with R - Summer School**, Utrecht University, Director: L. Frank.
2017	**Multiple Imputation in Practice - Summer School**, Utrecht University, Director: G. Vink.
2017	**Data Analysis and Visualization - Summer School**, Utrecht University, Director: M. Cruyff.

Personal grants

2024	**Grant for “Erasmus+: Staff mobility for teaching**”, with sending organization Università Campus Bio-Medico di Roma and receiving organization Umeå University. Value: 1800 €
2023	**Grant for “Contributi premiali per i ricercatori e assegnisti di ricerca per rafforzarne la condizione professionale e potenziare il sistema della ricerca del**

Lazio", Regione Lazio, Programma Fondo Sociale Europeo Plus (FSE+) 2021- 2027. Value: 2000 €

2023 **Grant for PostDoc in Computer Science and Computer Engineering (ING-INF/05**), Department of Engineering, Università Campus Bio-Medico di Roma. Title of the research project: "Artificial intelligence for precision medicine".

2022 **Grant for the Researcher Exchange Italy/Sweden**, Fondation C.M. Lerici. Research project performed at Department of Radiation Sciences, Umeå University (in collaboration with prof. A. Eklund and prof. C. Nilsson). Duration: 6 months. Value: 2500 €

2019 **Grant for the XXXV PhD course in Data Science**, Sapienza University of Rome. Duration: 3 years.

2019 **Grant for the International Thesis Scholarship**, Sapienza University of Rome. Thesis project performed at Department of Computer Science, University of New York, Buffalo. Thesis: "Generalized Model for Temporal Motifs" (in collaboration with prof. E. Sariyuce). Duration: 6 months. Value: 3000 €.

2019 **Grant for the student Honors Program for the Master's Degree in Data Science**, Sapienza University of Rome. Value: 3000 €

Language skills

English: Excellent knowledge of speaking and writing. Certificates:

- Trinity College London: 12/12 – C2;
- TOEFL: 105/120 – C2.

French: Good knowledge of speaking and writing. Certificates:

- DELF: B2.

2. Teaching

National tenure – Università Campus Bio-Medico di Roma

I have held courses at Università Campus Bio-Medico di Roma. Below there is the detailed list of my assignments:

From 2024/2025	**Course of Fundamentals of Artificial intelligence: development tools and methods**, Master's degree in Intelligent Systems Engineering, Department of Engineering (15 CFU).
From 2024	**Course of Image Processing, part of the integrated course on Signal and Image Processing**, Master's Degree Program in Medicine and Surgery "MedTech", Department of Medicine and Surgery (12 CFU).
From 2024	**Course of AI and Data Mining**, Bachelor's Degree Program in Biomedical Engineering, Department of Engineering (6 CFU).
2023-2024	**Course of Fundamentals of Artificial Intelligence**, Master's degree in Intelligent Systems Engineering, Department of Engineering (9 CFU).
From 2023	**Course of Machine Learning and Big Data Analytics**, Master's degree in Biomedical Engineering, Department of Engineering (6 CFU).
2023-2024	**Course of Programming and Experimental Methods for Artificial Intelligence**, Master's Degree Program in Intelligent Systems Engineering, Department of Engineering (9 CFU).

Teaching assignments within Master's level II courses

2023-2024	**Lecturer in the "Introduction to Programming and Intelligent Databases" module for students of the 2nd level Master's degree in "Precision Medicine between culture and society: Genomics, Bioinformatics, AI and Management"**, set up by UCBM in collaboration with CMP3VdA, a research centre specialising in genomic and Big Data analysis based in the Autonomous Region of Valle d'Aosta (16 hours).
2023-2024	**Lecturer in the "Machine Learning" module for students of the 2nd level Master's degree in "Precision Medicine between culture and society: Genomics, Bioinformatics, AI and Management"**, set up by UCBM in collaboration with CMP3VdA, a research centre specialising in genomic and Big Data analysis based in the Autonomous Region of Valle d'Aosta (24 hours).

Assignment of teaching or official research positions at foreign and international universities and research institutes of high qualification

2022-2024	**Research Associate at the Department of Diagnostics and Intervention, Radiation Physics, Biomedical Engineering, Umeå University, Sweden.** An official 2-year contract, during which I am involved in conducting research, developing solutions, and collaborating on interdisciplinary projects within the medical and computer science fields.
2024	**Lecturer of the course "Hands-on Machine Learning and Deep Learning" at the Department of Diagnostics and Intervention, Radiation Physics, Biomedical Engineering of Umeå University, Sweden.** The course focused on practical applications and implementation of machine learning and deep learning techniques (10 hours).

Collaborative teaching positions

2022-2023	**Teacher Assistant: Fundamentals of Computer Science**, Bachelor's Degree Program in Biomedical Engineering, Department of Engineering, Università Campus Bio-Medico di Roma (10 CFU).
2022-2023	**Teacher Assistant: Computer Science**, Master's Degree Program in Medicine and Surgery "MedTech", Department of Medicine, Università Campus Bio-Medico di Roma (5 CFU).
2021-2023	**Teacher Assistant: Computer Science and Statistics**, Bachelor's Degree Program in Medicine, Department of Medicine, Università Campus Bio-Medico di Roma (2 CFU).
2020-2023	**Teacher Assistant: Programming**, Master's Degree Program in Intelligent Systems Engineering, Department of Engineering, Università Campus Bio-Medico di Roma (9 CFU).
2018-2019	**Teacher Assistant: Algorithmic Methods of Data Mining**, Master's Degree Program in Data Science, Department of Information Engineering, Sapienza University of Rome (9 CFU).

Supervision

I have been supervising and co-supervising the following PhD theses:

XXXVII cycle	Camillo Caruso, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XXXVIII cycle	Filippo Ruffini, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XXXVIII cycle	Aurora Rofena, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XXXVIII cycle	Massimiliano Mantegna, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XXXIX cycle	Alice Natalina Caragliano, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XXXIX cycle	Arianna Francesconi, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XXXIX cycle	Marco Salmè, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XL cycle	Carmela Lipari, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XL cycle	Alessandro Pesci, National PhD in Artificial Intelligence, curriculum in Health and

	life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
XL cycle	Daniele Molino, National PhD in Artificial Intelligence, curriculum in Health and life sciences, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.

I have supervised for the following incoming exchange PhD students as part of international collaborations:

2023/2024	Eduoardo Almeda Luna, Department of Computing and Numerical Analysis, Andalusian Research Institute in Data Science and Computational Intelligence (DaSCI), University of Córdoba, Córdoba, Spain.
2023/2024	Zhuoru Wu, College of Computer Science and Software Engineering, Shenzhen University, Shenzhen, China.
2023/2024	Shaonan Liu, College of Computer Science and Software Engineering, Shenzhen University, Shenzhen, China.

I have been supervisor of the following bachelor and master's degree theses:

2021/2022	Miriana Pastina, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: "Multi-task XAI to Classify Higher-level Gait Disorder".
2021/2022	Aurora Rofena, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: "Virtual Contrast Enhancement for Contrast Enhanced Spectral Mammography (CESM): a Deep Learning Approach".
2021/2022	Viviana De Felice, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: "Cardiovascular Risk Prediction Based on Dynamic Selection of Multimodal Models".
2021/2022	Sara Tassinari, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: "Sequential Foward Fusion of Multimodal Deep Networks to Classify Higher-level Gait Disorder".
2022/2023	Rebecca Restivo, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: "Whole-Body Image-to-Image Translation for a Virtual Scanner in a Healthcare Digital Twin".
2022/2023	Carolina Adornato, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: "Bridging Paired and Unpaired Domains: Guided Image-to-Image Translation for Low-Dose CT Denoising".
2022/2023	Arianna Francesconi, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: "Multimodal Learning for Alzheimer's Disease Diagnosis and Early Detection".
2022/2023	Daniele Molino, Master's Degree in Intelligent Systems Engineering, Excellence Program, Università Campus Bio-Medico di Roma, Project: "Generating Tabular Data for Bio-medical Applications".
2022/2023	Carlo Di Cicco, Bachelor's Degree in Industrial Engineering, Università Campus Bio-Medico di Roma, Thesis: "Software for Virtual Radiology".
2022/2023	Antonio Zidaric, Master's Degree in Biomedical Engineering, Università Campus

Bio-Medico di Roma, Thesis: “Whole slide imaging-based deep learning comparative analysis for the prediction of the treatment response for III and IV stages NSCLC patients”.

2023/2024 Cecilia Assolito, Master's Degree in AI and Robotics, Sapienza University of Rome, Thesis: “Texture-Aware StarGAN for CT data harmonization”.

2023/2024 Costanza Fioroni, Master's Degree in Intelligent Systems Engineering, Università Campus Bio-Medico di Roma, Thesis: “Denoising 1.5T Brain MRI: A Diffusion Model Approach for Achieving 3T Image Quality”.

2023/2024 Daniele Molino, Master's Degree in Intelligent Systems Engineering, Università Campus Bio-Medico di Roma, Thesis: “MedCoDi-M: A Multi-Prompt Vision-Language Model for Multi-Modal Medical Data Generation”.

2023/2024 Arianna Manchia, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: “Generative Artificial Intelligence for Virtual CESM in Breast Cancer”.

2023/2024 Chiara Piacente, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: “From Many Models to One: a Unified Approach for Whole-Body CT-to-PET Translation”.

2023/2024 Francesco Sarcina, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: “Image Genaration from Scene Graphs”.

2023/2024 Irene Iele, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: “Test-Time Adaptation for Medical Image-to-Image Transaltion”.

2023/2024 Ludovica Pompilio, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: “StarDiffusionGAN: Towards a Texture-Aware Approach for CT Data Harmonization”.

2023/2024 Virginia Montinaro, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: “Development of a Gene-Phenotype Scoring Model to Support the Prioritization of Pathogenic Variants”.

2023/2024 Patrick Bianchi, Postgraduate Master's Degree in Precision Medicine Between Culture and Society: Genomics, Bioinformatics, AI and Management. Thesis: “Geography and migrations as potential drivers for Aosta Valley population stratification”.

2023/2024 Riccardo Bruni, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: “Not Another Imputation Method for Medical Imaging”.

2023/2024 Clelia Samolè Coppola, Master's Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Thesis: “Not Another Imputation Method for Medical Time-Series”.

2023/2024 Giulia Pascoletti, Bachelor's Degree in Industrial Engineering, Excellence Program, Università Campus Bio-Medico di Roma, Project: “AI-Powered Web Application for Virtual Treatment and Personalized Medical Data Generation”.

2023/2024 Vincenzo Rivieccio, Bachelor's Degree in Industrial Engineering, Excellence Program, Università Campus Bio-Medico di Roma, Project: “Web-Based Platform for Any to Any Multimodal Medical Data Generation”.

2023/2024 Elena Mulero Ayllón, Bachelor's Degree in Biomedical Sciences, International

	University of Catalonia, Title: “Development of a GAN-based Model to Predict the Evolution of a Tumor Mass Undergoing Radiation Therapy”.
2024/2025	Júlia Ortiga Carrillo, Bachelor's Degree in Biomedical Sciences, International University of Catalonia, Title: “Twitter rumour detection in the health domain”.

The theses I supervised covered different areas of computer science, and very often they are interdisciplinary dissertations, overlapping with other medical and engineering areas. The topics covered in the theses are diverse, pertinent to the SSD of ING-INF/05.
A short list of main themes discussed in the theses are:

- Deep Learning;
- Machine Learning;
- Multimodal Deep Learning;
- Explainable Artificial Intelligence;
- Digital Twin;
- Graph Theory;
- Radiomics.

3. Research activity

Research themes
My research activity concerns artificial intelligence, with particular reference to bio-medical applications. We are witnessing a fast adoption of artificial intelligence, and advancements in deep learning should improve the diagnosis, prognosis and treatment decisions in healthcare. However, most deep learning models for medical applications consider only unimodal data, neglecting information available in other modalities of patient digital phenotypes. I tackle this challenge by advancing multimodal deep learning (MDL), studying how deep neural networks can learn shared representations between different modalities, addressing issues still open in the literature. I also try to open the black-box nature of MDL models to explain the decisions taken via explainable artificial intelligence (XAI) methods.
My research activities aim to develop new approaches and technologies able to deal with real-world challenges and aim to develop new applications exploiting state-of-the-art methodologies. The practical applications of my research activities have impacted the biomedical applications of precision medicine.

Multimodal Deep Learning: MDL refers to the process of combining information from multiple modalities (e.g., audio, text, image, video) to make more accurate and robust decisions or inferences. This can be useful in a variety of applications, such as speech recognition, image classification, machine translation, and many others. One of the main challenges in MDL is to effectively combine the different modalities in a way that takes into account their relative strengths and weaknesses. This often requires designing appropriate fusion strategies that can effectively extract and combine relevant information from the different modalities. Within these contexts, I have focused on methods for ensemble learning, which are classification systems integrating several classifiers, in particular techniques of classifier fusion. The algorithms developed are able to automaticcaly understand when, which and how to fuse different modalities in an optimized and efficient way for the considered task. My main application of these techniques is in radiomics, which consists in the automated imaging phenotype quantification using data-characterization algorithms, mining the data for hypothesis generation, testing, associating with biological and clinical endpoints, as well as the development of prognostic and predictive personalized models. I have investigated radiomics approaches for the overall survival prediction of non-small cell lung cancer patients [J13] and the diagnosis and prognosis of patients affected by the COVID-19 virus [J6, J8, J16, C1, C2].

Explainable Artificial Intelligence: Recently, the pervasive use of artificial intelligence in various areas of society has led to the need to ask whether these models can be reliable in their decisions. In particular, the study of XAI is a cutting-edge research area that focuses on creating explanations and interpreting machine learning and deep learning (black box) models to make decisions understandable to the human operator. This also provides a clearer view of how they work to inspect their decision reliability and correctness. Within this context, I am studying XAI methods to open the black-box nature of MDL models used for the prognosis of patients affected by the COVID-19 virus [S1].

Digital Twin: Recent research is focusing on developing high throughput methods to generate digital twins in the context of radiology and radiotherapy. These digital twins will serve as input for analysis, modeling, and virtual scanning, and will integrate AI models to provide intra- and inter-modality views. This means that they will be able to translate images within a single modality or between different medical imaging modalities. This will reduce the need for

multiple scans, minimize radiation exposure, and help match each patient to the most appropriate imaging resource and imaging protocol. Generative image-to-image translation methods have already been developed in the context of mammography [S2], which demonstrates their potential for application in the development of digital twins in healthcare.

Scientific responsibilities for national and international research, founded on the basis of a peer-review process

2023-2024 Project coordinator of the "AI in Health and Life Sciences Summer School" within the call of the C.M. Lerici Foundation "Academic Grants". Value: 10000 €.

2023-2025 Task coordinator of the task T1.5 "Specific Domain Multimodal Datasets" within the transversal project "TP Vision Language and Multimodal Challenge (TP VLMC)", part of the broader "PNRR FAIR - Future AI Research" project.

2023-2025 Task leader of the task T3.5.3 "Multi-modal fusion algorithms" within the project "PNRR FAIR - Future AI Research" project.

2021-2022 Project coordinator of the research project entitled "Optimization of Neural Networks for the Diagnosis of COVID-19 on Chest X-ray". The project is supported by an internal call (externally reviewed) "Avvio alla Ricerca" of Sapienza University of Rome. Duration: 12 months. Value: 1000 €.

2020-2021 Project coordinator of the research project entitled "Radiomics and Deep Learning for the Detection of COVID-19". The project is supported by an internal call (externally reviewed) "Avvio alla Ricerca" of Sapienza University of Rome. Duration: 12 months. Value: 1000 €.

Organization or participation as a speaker at scientific conferences in Italy or abroad

Chair of scientific committee of international conferences relevant for in the scientific field

2025 Area Chair of the International Joint Conference on Neural Networks (IJCNN 2025), June 30- July 5, 2025, Rome, Italy.

2025 Program Committee Chair of the 38th IEEE International Symposium on Computer-Based Medical Systems, June 18-20, 2025, Madrid, Spain.

2025 Publicity Chair of the IEEE Symposium on CI in Image, Signal Processing and Synthetic Media (IEEE CISM) part of the 2025 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2025), March 17-20, 2025, Trondheim, Norway.

2025 Publicity Chair of the International Joint Conference on Neural Networks (IJCNN 2025), June 30- July 5, 2025, Rome, Italy.

Conference Workshop Chairing

2025 Chair of the Special Session entitled "Foundation Models in Medicine (FMM)", International Joint Conference on Neural Networks (IJCNN 2025), June 30- July 5, 2025, Rome, Italy.

2025 Chair of the Special Track entitled "Multimodal Artificial Intelligence in Healthcare (MAIH)", 39th IEEE International Symposium on Computer-Based Medical Systems, June 18-20, 2025, Madrid, Spain.

2024 Chair of the Special Track entitled “Multimodal Learning in Biomedical Applications (MLBA)”, 38th IEEE International Symposium on Computer-Based Medical Systems, June 26-28, 2024, Guadalajara, Mexico.

2024 Chair of the Workshop entitled “Design, Evaluation and Deployment of Robust Recommender Systems (RobustRecSys)”,18th ACM Conference on Recommender Systems, October 14-18, 2024, Bari, Italy.

Invited talks

2025 “AI-Driven Multimodal Vision Language Synthesis in Healthcare”, held at the FAIR Spoke Workshop – Spoke 3.

2024 “Specific Domain Multimodal Datasets”, held at the Workshop Italian Visual and Language models: challenges and activities.

2024 “Enhacing the Resilience of Multimodal Learning”, held at the 1st FAIR Workshop on Resilient AI.

2022 “New start-up experience: Multimodal Deep Learning”, held at the Artificial Intelligence and liver diseases monothematic conference by AISF 2022.

2020 “Computational Medicine Challenges in Oncology”, held by the Sapienza Information-Based Technology Innovation Center for Health, October 15, 2020.

Participation as a speaker at international conferences

2024 Poster: “Enhancing the Resilience of Multimodal Learning in Healthcare”, held at General Conference FAIR 2024.

2022 Poster: “Temporal Network Motifs: Models, Limitations, Evaluation”, held at ICDE 2022 TKDE.

2021 Seminar: “Microbiota and Artificial Intelligence”, held at Probiotics, Prebiotics & New Foods 2021.

2019 Poster: “Temporal Motifs”, held at CSDE Days University of New York at Buffalo.

Teaching assignments and participation in the scientific board of PhD courses

Organisation of PhD school

2025 Lead Organizer of the “Summer School on Artificial Intellignece in health and Life Sciences”, Università Campus Bio-Medico di Roma, Italy.

2024 Lead Organizer of the “Summer School on Artificial Intellignece in health and Life Sciences”, Università Campus Bio-Medico di Roma, Italy.

2023 Program Committee Member of the “PhD School for the National PhD in Artificial Intelligence - Health and life sciences area”, Università Campus Bio-Medico di Roma, Italy.

Courses held for PhD courses recognized by the National Education Department

2024/2025 **Lecturer of the course “Hands-on Machine Learning and Deep Learning”**, National PhD in Artificial Intelligence, Health and Life Sciences area (20 hours).

2024/2025 **Lecturer of the course “Machine Learning and Deep Learning”**, PhD course of

Università Campus Bio-Medico di Roma (20 hours).

2023/2024 **Lecturer of the course "Hands-on Machine Learning and Deep Learning"**, National PhD in Artificial Intelligence, Health and Life Sciences area (20 hours).

2023/2024 **Lecturer of the course "Machine Learning and Deep Learning"**, PhD course of Università Campus Bio-Medico di Roma (20 hours).

Direction or participation in the activities of a research group characterized by national or international collaborations

Project participation

2023-2025 "FAIR: Future Artificial Intelligence Research" project, funded by MUR. Specifically contributing to Spoke 3 "Resilient AI" and Work Package 3.5 "Resilient Multimodal Systems", focusing on developing resilient AI systems capable of handling diverse and multimodal data sources to enhance system robustness and adaptability.

2023-2025 "Transversal project TP Vision Language and multimodal challenge (TP VLMC)", transveral project of the "PNRR FAIR - Future AI Research" project, which has the ambition to implement new open-source solutions in computer vision, NLP and multimodal processing, as well as data management policies.

2022-2025 "Fit4MedRob: Fit for medical robotics", supported by The National Recovery and Resilience Plan (NRRP), MUR. The project aims to address an important clinical, socio-economic and humanitarian problem arising from the demand for rehabilitation and care of persons with reduced or absent motor, sensory or cognitive functions due to injury or congenital reasons.

2023-2026 "IDEA: AI-powered digital Twin for next-generation lung cancEr cAre", Internal Call 2023. The Project aims to develop digital twin for non-small cell lung cancer, combining this technology with artificial intelligence in order to improve diagnosis and optimise therapy.

2023-2026 "AIDA: explAinable multImodal Deep learning for personAlized oncology", PRIN 2022. Il progetto mira a studiare nuovi approcci di multimodal deep learning per integrare dati radiomici, patomici e testuali dei referti clinici nell'oncologia di precisione al fine di prevedere la prognosi dei pazienti affetti da tumore al polmone non a piccole cellule.

2023-2026 "PICTURE: Pathological response AI-driven prediCTion after neoadjUvant theRapiEs in NSCLC ": project funded by European Union, NextGenerationEU, Ministro dell'Università e della Ricerca, for the call "PRIN: Progetti di Ricerca di Rilevante Interesse Nazionale – Bando 2022 PNRR". Role in the project: development of multimodal deep learning models for the prediction of pathologic complete response of patients affected by non-small cell lung cancer.

2022-2023 "Applicazioni di machine learning su immagini di mammografia con contrasto (Applications of machine learning on contrast-enhanced mammography images)": project supported by Bracco Imaging S.p.A. Role in the project: development of generative models on CESM images for the detection or characterization of lesions for dose reduction.

2023 "Trustworthy AI-driven next generation precision medicine in COVID-19": project supported by the Italian Ministry of Foreign Affairs and International Cooperation.

Role in the project: development of multimodal deep learning algorithms to detect signatures for the risk of severe outcome in patients affected by COVID-19.

2023 "Piattaforma per la Medicina di Precisione: Intelligenza Artificiale e Diagnostica Clinica Integrata (Platform for Precision Medicine: Artificial Intelligence and Integrated Clinical Diagnostics)": project supported by FONDO PER LA CRESCITA SOSTENIBILE (F.C.S.), Bando Accordo Innovazione DM 24/5/2017 (Ministero delle Imprese e del Made in Italy). Role in the project: development of federated learning algorithms to facilitate the use of medical data across different centers.

2022 "A network-based approach for in-silico identification of drug-repurposing opportunities for the treatment of neurological diseases": project supported by an internal call (externally reviewed) "Progetti di Ricerca - Progetti Piccoli" of Sapienza University of Rome. Role in the project: development of AI-based algorithms to facilitate the finding of innovative therapies for fighting Multiple Sclerosis.

2021 "ShowmotionHome4Covid": project as part of ARTES 4.0, with the collaboration of COT and NCS LAB srl. Role in the project: development of AI-based algorithms to facilitate the telemonitoring of COVID-19 affected patients.

2021-2022 "Progetto Genoma Trisomia 21 (HGP-T21)": project grant RSI - Application no. PROT. A0320-2019-28186 - Public Notice "Progetti Strategici 2019" - POR FESR Lazio 2014-2020 - Action 1.1.4 - BURL No. 29. Role in the project: development of AI-based algorithms for the study of the genome and microbiome of Trisomy 21 patients.

2021 "Development of a network theory-based algorithm for drug repositioning and its application to COVID-19": project supported by an internal call (externally reviewed) "Progetti di Ricerca - Progetti Medi" of Sapienza University of Rome. Role in the project: development of AI-based algorithms to facilitate correlations for COVID-19 drug discoveries.

2020-2021 "HERMES- Healthcare Emergency support system for the distributed Response and Monitoring of Epidemics in the Society". Role in the project: development of AI-based algorithms to detect COVID-19 pneumonia in RX images.

2020-2021 "Objective Speech Quality Measurement System" (Sistema di Misura Oggettiva della Qualità del Parlato: SMOQP): project as part of ARTES 4.0, with the collaboration of Mediavoice S.r.l., the Simple Operating Unit of Integrated Therapies in Otolaryngology at UCBM Polyclinic, and the Cloudwise Group.
Role in the project: development of an algorithm for measuring the degree of correctness of a speaker's diction and pronunciation of terms of a specific language.

2020 "AIforCovid Imaging Archive": project sponsored by Bracco S.p.a in collaboration with the Centro Diagnostico Italiano and the Istituto Italiano di Tecnologia (IIT) in Genova for the collection and radiomic analysis of images with the aim of creating a dataset for sharing radiological and clinical data on Covid-19.
Role in the project: development of algorithms for radiomic analysis of COVID-19 patient images, specifically using multimodal deep learning methodologies.

2019- "CoLlAborative multi-sources Radiopathomics approach for personalized Oncology in non-small cell lung cancer (CLARO)": project funded by the University Campus Bio-Medico carried out in collaboration with the radiology, radiotherapy and pathological anatomy units of the University Polyclinic. Role in the project: development of algorithms for radiomic analysis of multimodal data of patients with

lung cancer.

Participation and collaboration in the activities of national or international research groups

2022- Department of Radiation Sciences, Umeå University. Collaboration with Professor Anders Eklund and Professor Christer Grönlund on research activities focused on the application of multimodal AI to medical imaging. Specifically, the research is focused on developing novel AI-based approaches to improve the accuracy and efficiency of medical image analysis for disease diagnosis and treatment planning.

2020- Research Units of the University and of the Campus Bio-Medico University Hospital in Rome. I'd like to underline the multidisciplinary nature of the research, which takes place in collaboration with the University Policlinico of the Campus Bio-Medico University of Rome, and in particular with the Unit of Immunology, Unit of Physiatrics, Unit of Radiology and Radiotherapy, Unit of Otorhinolaryngology.

2020- Research & Development Division of Mediavoice S.r.l. The collaboration is on the topic of realizing a system for the analysis and quantitative measurement of a patient's speech quality in the context of speech therapies for the System for Objective Measurement of Speech Quality (SMOQP) project under ARTES 4.0, with the Simple Operating Unit of Integrated Therapies in Otolaryngology of the UCBM Polyclinic and the Cloudwise group. My contribution is focusing on the analysis of signals from speech using machine learning and deep learning techniques to build a system for the extraction and analysis of language phonemes from a speech acoustic signal.

2020- Bracco Imaging, Istituto Italiano di Tecnologia: I have been cooperating with the research team headed by Bracco Imaging to investigate the use of chest-X-ray images to predict the final outcome in COVID-19 pneumonia, and to study the late COVID-19 syndrome. The activity is also in cooperation with several hospitals in Italy that collect the data.

2020- Microbiome Research Unit of Ospedale Pediatrico Bambin Gesù. I have been collaborating on research aimed at developing and applying bioinformatic algorithms for mapping pediatric microbiomes associated with gastrointestinal or gastrointestinal-related physiological and pathological conditions.

2020- GenomeUp s.r.l. is a health-tech startup that offers an ecosystem of AI-powered solutions for genetic analysis and clinical decision support for diseases. I have been collaborating on topics related to the development of machine learning and deep learning methods to aid the research for hospitals and medical-oriented research groups to solve real-world healthcare problems using medical imaging, genomics, and electronic health records data.

Direction or participation in editorial committees of journals, book series, encyclopedia, essays, and proceedings of well known reputation

Journals

2025 Lead Guest Editor of Artificial Intelligence in Medicine (AIIM), Elsevier. Special Issue on “IEEE CBMS 2025 - Artificial Intelligence for Next-Generation Healthcare Solutions”.

2025 Guest Editor of Health Information Science and Systems (HISS), SpringerLink.

	Special Issue on “Connected Healthcare: Data-Driven and Scalable Solutions”.
2024-2025	Lead Guest Editor of Multimedia Tools and Applications, SpringerLink. Special Issue on “Exploring the Frontiers of Medical Imaging with Multimodal Learning”.
From 2024	Associate Editor of Multimedia Tools and Applications, SpringerLink.

Awards

2025	Recipient of “Computing’s Top 30 Early Career Professionals for 2024”, IEEE Computer Society, 2024. Link.
2025	Awarded the Seal of Excellence following evaluation by an international panel of independent experts, recognizing it as a high-quality project proposal in a highly competitive selection process. Project Proposal: 101203747 - IDEA “AI-powered digital twin for next-generation lung cancer care”. Submitted under the HORIZON-MSCA-2024-PF-01-01 (MSCA Postdoctoral Fellowships 2024), European Commission Horizon Europe
2022	Winner of the international competition: “Covid CXR Hackathon”, Bracco Imaging, Dubai Expo 2020. Prize: 5000 €
2021	Winner of the international competition: “AI against COVID-19: Screening X-ray Images for COVID-19 Infection”, IEEE SIGHT, University of Waterloo, 2021. Prize: 5000 €.
2018	Winner of the international competition: “Stats Under the Stars 4 Competition”, Società Italiana Statistica, Findomestic. Prize: 1000 €
2018	Winner of the university competition: “Quantitative Methods of Economic Analysis and Management”, Sapienza University of Rome. Prize: 500 €

Third Mission and Technology Transfer Activities

2024	Participation in Boost Your Ideas program, Lazio Innova, 2024
2024	Finalist in Startcup Lazio 2024 - Regional Business Plan Competition, Università degli Studi di Roma Tor Vergata, Regione Lazio, Lazio Innova
2024	Winner of the Special Prize “Rogue Data” (Startcup Lazio 2024) Includes funding opportunities through contracts and research collaborations in the Smart City domain.
2024	Finalist in the National Innovation Award - PNI CUBE 2024.
2024	Winner of the Special Prize “Young Entrepreneur Program” (PNI CUBE 2024) Includes a €1,000 grant to support entrepreneurial development

Association membership and fellowship

2025-	Member of the IEEE Computer Society
2024-	Member of Italian Association for Computer Vision, Pattern Recognition and Machine Learning (CVPL-ex-GIRPR).
2024-	Member of the IEEE and IEEE Computer society.

2024- Member of Italian Society of Biomedical Informatics (SIBIM).

2024- Member of Associazione Italiana per l'Intelligenza Artificiale (AIxIA).

Conference Program Committee membership

- 22rd Conference on Artificial Intelligence in Medicine (AIME 2024)
- 29th International Conference on Natural Language & Information Systems (NLDB 2024)
- IEEE 37th International Symposium on Computer-Based Medical Systems (CBMS 2024)
- 18th ACM Conference on Recommender Systems (RecSys 2024)
- 23rd Conference on Artificial Intelligence in Medicine (AIME 2025)
- 2025 IEEE Symposium on Computational Intelligence in Image, Signal Processing and Synthetic Media (SSCI 2025)
- Special Session "3P - Pixel, Patterns, Pathologies: providing clinicians the best Deep Learning Architectures" at the International Joint Conference on Neural Networks (IJCNN 2025)

Reviewer activities

International journals

- Artificial Intelligence In Medicine, Elsevier;
- Alexandria Engineering Journal, Elsevier;
- Computers in Biology and Medicine, Elsevier;
- European Journal of Medical Physics, Elsevier;
- Engineering Applications of Artificial Intelligence, Elsevier;
- IEEE Journal of Biomedical and Health Informatics.

International conferences

- ACM Conference on Bioinformatics, Computational Biology, and Health Informatics;
- IEEE International Conference on Healthcare Informatics;
- IEEE Symposium Series on Computational Intelligence;
- International Conference on Medical Image Computing and Computer-Assisted Intervention;
- International Joint Conference on Neural Networks.

List of all scientific publications

I report in the following the full list of my scientific publications, divided into international journals and international conferences.

According to the Scopus source, as of 25/03/2025 the number of citations is 387 for 36 census publications, with H-index equal to 11.

According to the Google Scholar source, as of the same date, the number of citations is 567, with H-index equal to 14.

International journals

[J27] **Guarrasi, V.**, Di Teodoro, G., Siciliano, F., Vandamme, A. M., Ghisetti, V., Sönnerborg, A., Zazzi, M., Silvestri, F., Palagi, L. A graph neural network-based model with Out-of-Distribution Robustness for enhancing Antiretroviral Therapy Outcome Prediction for HIV-1. (2025) Computerized Medical Imaging and Graphics, 120, art. no. 102484. DOI: 10.1016/j.compmedimag.2024.102484

[J26] **Guarrasi V.**, Mogensen K., Larsson J., Hansson W., Wåhlin A., Koskinen L.-O., Malm J., Eklund A., Soda P., Qvarlander S. An optimized ensemble search approach for classification of higher-level gait disorder using brain magnetic resonance images. (2025) Computers in Biology and Medicine, 184, art. no. 109457. DOI: 10.1016/j.compbiomed.2024.109457.

[J25] **Guarrasi, V.**, Tronchin, L., Albano, D., Faiella, E., Fazzini, D., Santucci, D., Soda, P., Multimodal Explainability via Latent Shift applied to COVID-19 stratification. (2024) Pattern Recognition, 156, art. no. 110825. DOI: 10.1016/j.patcog.2024.110825.

[J24] Piccolo C.L., Sarli M., Pileri M., Tommasiello M., Rofena A., **Guarrasi V.**, Soda P., Beomonte Zobel B. Radiomics for Predicting Prognostic Factors in Breast Cancer: Insights from Contrast-Enhanced Mammography (CEM). (2024) Journal of Clinical Medicine, 13 (21), art. no. 6486. DOI: 10.3390/jcm13216486

[J23] Ristori, M.V., **Guarrasi, V.**, Soda, P., Petrosillo, N., Gurrieri, F., Longo, U.G., Ciccozzi, M., Riva, E., Angeletti, S. Emerging Microorganisms and Infectious Diseases: One Health Approach for Health Shared Vision. Genes 2024, 15, 908. DOI: 10.3390/genes15070908

[J22] **Guarrasi V.**, Rofena A., Sarli M., Piccolo C.L., Sammarra M., Zobel B.B., Soda P. A deep learning approach for virtual contrast enhancement in Contrast Enhanced Spectral Mammography. (2024) Computerized Medical Imaging and Graphics, 116, art. no. 102398. DOI: 10.1016/j.compmedimag.2024.102398

[J21] **Guarrasi V.**, Caruso C.M., Ramella S., Soda P. A deep learning approach for overall survival prediction in lung cancer with missing values. (2024) Computer Methods and Programs in Biomedicine, 254, art. no. 108308. DOI: 10.1016/j.cmpb.2024.108308

[J20] Romani L., Chierico F.D., Pane S., Ristori M.V., Pirona I., **Guarrasi V.**, Cotugno N., Bernardi S., Lancella L., Perno C.F., Rossi P., Villani A., Campana A., Palma P., Putignani L. Exploring nasopharyngeal microbiota profile in children affected by SARS-CoV-2 infection. (2024) Microbiology Spectrum, 12 (3). DOI: 10.1128/spectrum.03009-23

[J19] Marzano V., Levi Mortera S., Vernocchi P., Del Chierico F., Marangelo C., **Guarrasi V.**, Gardini S., Dentici M.L., Capolino R., Digilio M.C., Di Donato M., Spasari I., Abreu M.T., Dallapiccola B., Putignani L. Williams–Beuren syndrome shapes the gut microbiota metaproteome. (2023) Scientific Reports, 13 (1), art. no. 18963. DOI: 10.1038/s41598-023-46052-9

[J18] Vernocchi P., Marangelo C., Guerrera S., Del Chierico F., **Guarrasi V.**, Gardini S., Conte F., Paci P., Ianiro G., Gasbarrini A., Vicari S., Putignani L. Gut microbiota functional profiling in autism spectrum disorders: bacterial VOCs and related metabolic pathways acting as disease biomarkers and predictors. (2023) Frontiers in Microbiology, 14, art. no. 1287350. DOI: 10.3389/fmicb.2023.1287350

[J17] Laterza, L., Putignani, L., Settanni, C.R., Petito, V., Varca, S., De Maio, F., Macari, G., **Guarrasi, V.**, Gremese, E., Tolusso, B., Wlderk, G., Pirro, M.A., Fanali, C., Scaldaferri, F., Turchini, L., Amatucci, V., Sanguinetti, M., Gasbarrini, A. Ecology and Machine Learning-Based Classification Models of Gut Microbiota and Inflammatory Markers May Evaluate the Effects of Probiotic Supplementation in Patients Recently Recovered from COVID-19. (2023) International Journal of Molecular Sciences, 24 (7), art. no. 6623, . DOI: 10.3390/ijms24076623.
[J16] **Guarrasi, V.**, Soda, P. Multi-objective optimization determines when, which and how to fuse deep networks: an application to predict COVID-19 outcomes. (2023) Computers in Biology and Medicine, 154, art. no. 106625, . DOI: 10.1016/j.compbiomed.2023.106625.
[J15] Levi Mortera, S., Marzano, V., Vernocchi, P., Matteoli, M.C., **Guarrasi, V.**, Gardini, S., Del Chierico, F., Rapini, N., Deodati, A., Fierabracci, A., Cianfarani, S., Putignani, L. Functional and Taxonomic Traits of the Gut Microbiota in Type 1 Diabetes Children at the Onset: A Metaproteomic Study. (2022) International Journal of Molecular Sciences, 23 (24), art. no. 15982, . DOI: 10.3390/ijms232415982.
[J14] Infantino, M., Palterer, B., Previtali, G., Alessio, M.-G., Villalta, D., Carbone, T., Platzgummer, S., Paura, G., Castiglione, C., Fabris, M., Pesce, G., Porcelli, B., Terzuoli, L., Bacarelli, M.-R., Tampoia, M., Cinquanta, L., Brusca, I., Buzzolini, F., Benucci, M., Tortora, M., Tronchin, L., **Guarrasi, V.**, Soda, P., Manfredi, M., Bizzaro, N. Comparison of current methods for anti-dsDNA antibody detection and reshaping diagnostic strategies. (2022) Scandinavian Journal of Immunology, 96 (6), art. no. e13220, . DOI: 10.1111/sji.13220.
[J13] **Guarrasi, V.**, Caruso, C.M., Cordelli, E., Sicilia, R., Gentile, S., Messina, L., Fiore, M., Piccolo, C., Beomonte Zobel, B., Iannello, G., Ramella, S., Soda, P. A Multimodal Ensemble Driven by Multiobjective Optimisation to Predict Overall Survival in Non-Small-Cell Lung Cancer. (2022) Journal of Imaging, 8 (11), art. no. 298, . DOI: 10.3390/jimaging8110298.
[J12] Del Chierico, F., Conta, G., Matteoli, M.C., Fierabracci, A., Reddel, S., Macari, G., Gardini, S., **Guarrasi, V.**, Levi Mortera, S., Marzano, V., Vernocchi, P., Sciubba, F., Marini, F., Deodati, A., Rapini, N., Cianfarani, S., Miccheli, A., Putignani, L. Gut Microbiota Functional Traits, Blood pH, and Anti-GAD Antibodies Concur in the Clinical Characterization of T1D at Onset. (2022) International Journal of Molecular Sciences, 23 (18), art. no. 10256, . DOI: 10.3390/ijms231810256.
[J11] Romani, L., Del Chierico, F., Macari, G., Pane, S., Ristori, M.V., **Guarrasi, V.**, Gardini, S., Pascucci, G.R., Cotugno, N., Perno, C.F., Rossi, P., Villani, A., Bernardi, S., Campana, A., Palma, P., Putignani, L., the CACTUS Study Team. The Relationship Between Pediatric Gut Microbiota and SARS-CoV-2 Infection. (2022) Frontiers in Cellular and Infection Microbiology, 12, art. no. 908492, . DOI: 10.3389/fcimb.2022.908492.
[J10] Vernocchi, P., Ristori, M.V., Guerrera, S., **Guarrasi, V.**, Conte, F., Russo, A., Lupi, E., Albitar-Nehme, S., Gardini, S., Paci, P., Ianiro, G., Vicari, S., Gasbarrini, A., Putignani, L. Gut Microbiota Ecology and Inferred Functions in Children With ASD Compared to Neurotypical Subjects. (2022) Frontiers in Microbiology, 13, art. no. 871086. DOI: 10.3389/fmicb.2022.871086.
[J9] **Guarrasi, V.**, Cipollari, S., Pecoraro, M., Bicchetti, M., Messina, E., Farina, L., Paci, P., Catalano, C., Panebianco, V. Convolutional Neural Networks for Automated Classification of Prostate Multiparametric Magnetic Resonance Imaging Based on Image Quality. (2022) Journal of Magnetic Resonance Imaging, 55 (2), pp. 480-490. DOI: 10.1002/jmri.27879.
[J8] **Guarrasi, V.**, D'Amico, N.C., Sicilia, R., Cordelli, E., Soda, P. Pareto optimization of deep networks for COVID-19 diagnosis from chest X-rays. (2022) Pattern Recognition, 121, art. no. 108242, . DOI: 10.1016/j.patcog.2021.108242.
[J7] Tozzi, A.E., Del Chierico, F., Pandolfi, E., Reddel, S., Gesualdo, F., Gardini, S., **Guarrasi, V.**, Russo, L., Croci, I., Campagna, I., Linardos, G., Concato, C., Villani, A., Putignani, L.

Nasopharyngeal microbiota in hospitalized children with Bordetella pertussis and Rhinovirus infection. (2021) Scientific Reports, 11 (1), art. no. 22858, . DOI: 10.1038/s41598-021-02322-y.

[J6] Soda, P., D'Amico, N.C., Tessadori, J., Valbusa, G., **Guarrasi, V.**, Bortolotto, C., Akbar, M.U., Sicilia, R., Cordelli, E., Fazzini, D., Cellina, M., Oliva, G., Callea, G., Panella, S., Cariati, M., Cozzi, D., Miele, V., Stellato, E., Carrafiello, G., Castorani, G., Simeone, A., Preda, L., Iannello, G., Del Bue, A., Tedoldi, F., Alí, M., Sona, D., Papa, S. AIforCOVID: Predicting the clinical outcomes in patients with COVID-19 applying AI to chest-X-rays. An Italian multicentre study. (2021) Medical Image Analysis, 74, art. no. 102216, . DOI: 10.1016/j.media.2021.102216.

[J5] Fiscon, G., Salvadore, F., **Guarrasi, V.**, Garbuglia, A.R., Paci, P. Assessing the impact of data-driven limitations on tracing and forecasting the outbreak dynamics of COVID-19. (2021) Computers in Biology and Medicine, 135, art. no. 104657, . DOI: 10.1016/j.compbiomed.2021.104657.

[J4] Del Chierico, F., Manco, M., Gardini, S., **Guarrasi, V.**, Russo, A., Bianchi, M., Tortosa, V., Quagliariello, A., Shashaj, B., Fintini, D., Putignani, L. Fecal microbiota signatures of insulin resistance, inflammation, and metabolic syndrome in youth with obesity: a pilot study. (2021) Acta Diabetologica, 58 (8), pp. 1009-1022. DOI: 10.1007/s00592-020-01669-4.

[J3] Taibi, C., Luzzitelli, I., Comandini, U.V., Girardi, E., Monacelli, G., Rapisarda, L.M., Garbuglia, A.R., Minosse, C., **Guarrasi, V.**, Vincenzi, L., Iacomi, F., D'offizi, G. Hepatitis C diagnosis and treatment in people who use drugs: Mind the gap in the linkage to care. (2021) European Review for Medical and Pharmacological Sciences, 25 (19), pp. 5913-5921. DOI: 10.26355/eurrev_202110_26867.

[J2] Liu, P., **Guarrasi, V.**, Sariyuce, A.E. Temporal Network Motifs: Models, Limitations, Evaluation. (2021) IEEE Transactions on Knowledge and Data Engineering, . DOI: 10.1109/TKDE.2021.3077495.

[J1] Sias, C., **Guarrasi, V.**, Minosse, C., Lapa, D., Nonno, F.D., Capobianchi, M.R., Garbuglia, A.R., Del Porto, P., Paci, P. Human Papillomavirus Infections in Cervical Samples From HIV-Positive Women: Evaluation of the Presence of the Nonavalent HPV Genotypes and Genetic Diversity. (2020) Frontiers in Microbiology, 11, art. no. 603657, . DOI: 10.3389/fmicb.2020.603657.

International Conferences and Workshops Proceedings

[C9] **Guarrasi V.**, Siciliano F., Silvestri F. RobustRecSys @ RecSys2024: Design, Evaluation and Deployment of Robust Recommender Systems. (2024) RecSys 2024 - Proceedings of the 18th ACM Conference on Recommender Systems, pp. 1265 - 1269. DOI: 10.1145/3640457.3687106

[C8] Ruffini, F., Tronchin, L., Wu, Z., Chen, W., Soda, P., Shen, L., **Guarrasi, V.** Multi-Dataset Multi-Task Learning for COVID-19 Prognosis, (2024) International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2024), pp. 251-261. DOI: 10.1007/978-3-031-72390-2_24.

[C7] Adornato, C., Assolito, C., Cordelli, E., Di Feola, F., **Guarrasi, V.**, Iannello, G., Marcoccia, L., Mulero Ayllon, E., Restivo, R., Rofena, A., Sicilia, R., Soda, P., Tortora, M., Tronchin, L. Virtual Scanner: Leveraging Resilient Generative AI for Radiological Imaging in the Era of Medical Digital Twins, Ital-IA 2024

[C6] Aksu, F., Bria, A., Caragliano, A.N., amillo Maria Caruso, C.M., Chen, W., Cordell, E., Coser, O., Francesconi, A., Furia, L., **Guarrasi, V.**, Iannello, G., Lauretti, C., Manni, G., Marino, G., Paolo, D., Ruffini, F., Shen, L., Sicilia, R., Soda, P., Tamantini, C., Tortora, M., Wu, Z., Zollo, L. Towards AI-driven Next Generation Personalized Healthcare and Well-being, Ital-IA 2024

[C5] Conte, F., Cordelli, E., **Guarrasi, V.**, Iannello, G., Sicilia, R., Soda, P., Tortora, M., Tronchin, L. Sustainable AI: inside the deep, alongside the green, Ital-IA 2023
[C4] **Guarrasi, V.**, Tronchin, L., Caruso, C.M., Rofena, A., Manni, G., Aksu, F., Paolo, D., Iannello, G., Sicilia, R., Cordelli, E., Soda, P. Building an AI-Enabled Metaverse for Intelligent Healthcare: Opportunities and Challenges, Ital-IA 2023
[C3] Cordelli, E., **Guarrasi, V.**, Iannello, G., Ruffini, F., Sicilia, R., Soda, P., Tronchin, L. Making AI trustworthy in multimodal and healthcare scenarios, Ital-IA 2023
[C2] **Guarrasi, V.**, Soda, P. Optimized Fusion of CNNs to Diagnose Pulmonary Diseases on Chest X-Rays. (2022) ICIAP 2022: Image Analysis and Processing – ICIAP 2022, 13231 LNCS, pp. 197-209. DOI: 10.1007/978-3-031-06427-2_17.
[C1] **Guarrasi, V.**, D'Amico, N.C., Sicilia, R., Cordelli, E., Soda, P. A multi-expert system to detect COVID-19 Cases in X-ray images. (2021) Proceedings - IEEE Symposium on Computer-Based Medical Systems, 2021-June, art. no. 9474724, pp. 395-400. DOI: 10.1109/CBMS52027.2021.00090.

Abstracts
[A13] Brunetti, L., Macerelli, M., Santo, V., Garbo, E., Owen, D.H., Kalvapudi, S., Bironzo, P., Josephides, E., Giusti, R., Bria, E., Rost, M., Minuti, G., Tiseo, M., Cantini, L., Lo Russo, G., Aboubakar Nan, F., Nassar, A., Ricciuti, B., Caruso, C.M., **Guarrasi, V.**, Cortellini, A., Transforming prognostication: a 5-year follow-up study to unravel prognostic predictors across age groups in NSCLC using transformer-based AI, 2025 ASCO Annual Meeting
[A12] Stefanini, A., Ghionzoli, N., Halasz, G., Sciaccaluga, C., Sorini Dini, C., Righini, F.M., **Guarrasi, V.**, Francesconi, A., Soda, P., Concetta, Pastore, M.C., Aboumarie, H.S., Piazza, V., Marini, M., Ribichini, F.L., Gabrielli, D., Cameli, M., Valente, S., Identifying Cardiogenic Shock Sub-Phenotypes with Machine Learning: A Multicenter Study Combining Clinical and Echocardiographic Data, Heart Failure Congress (HFA 2025)
[A11] Cortellini, A., Garbom, E., Pinato, D.J., Owen, D.H., Passiglia, F., Yendamuri, S., Karapanagiotou, E., Giusti, R., Bria, E., Rost, M., Minuti, G., Tiseo, M., Cantini, L., Mountzios, G., Beninato, T., Aboubakar Nana, F., Nassar, A., Ricciuti, B., Caruso, C.M., **Guarrasi, V.** Transformer-based AI approach to unravel long-term, time-dependent prognostic complexity in patients with advanced NSCLC and PD-L1 ≥50%: insights from the Pembrolizumab 5-year global registry, European Lung Cancer Congress (ELCC 2025)
[A10] Esposito, M., Gravina, M., **Guarrasi, V.**, Giulio Iannello, G., Carlo Sansone, C., Soda, P., Vento, M. Towards a multimodal AI resilient to data in-the-wild, General Conference FAIR 2024
[A9] Greco, C., Ippolito, E., Miele, M., Onorati, E., Tacconi, C., Trodella, L.E., Nibid, L., Caragliano, A.N., **Guarrasi, V.**, Perrone, G., Soda, P., Ramella, S. A Deep Learning Model to Predict Pathological Complete Response in NSCLC patients undergoing neoadjuvant chemoradiation, 34° Congresso Nazionale AIRO
[A8] Sarli, M., Piccolo, C., Rofena, A., **Guarrasi, V.**, Soda, P., Faiella, E., Grasso, R. F., Beomonte Zobel, B., Sammarra, M. Comparing Breast Biopsy Techniques: A Study on Diagnostic Precision, Patient Safety and Radiation Exposure, European Congress of Radiology ECR 2024
[A7] Petsas, N., **Guarrasi, V.**, Morena, E., Piervincenzi, C., Spagnoli A., Pantano P., Salvetti M., Grassi F., Palagi L. Lesion Pattern in Mutiple Sclerosis: a Deep Learning Exploration Approach, ECTRIMS 2024.
[A6] Petsas, N., **Guarrasi, V.**, Morena, E., Piervincenzi, C., Spagnoli A., Pantano P., Salvetti M., Grassi F., Palagi L. Lesion Pattern in Mutiple Sclerosis: a Deep Learning Exploration Approach, XII Congresso Nazionale SISMEC 2023: Ambiente, Clima, Popolazioni: Fonti, Dati, Metodi per la tutela della salute individuale e collettiva.

[A5] Mogensen, K., **Guarrasi, V.**, Larsson, J., Hansson, W., Wåhlin, A., Koskinen, L., Malm, J., Eklund, A., Soda, P., Qvarlander, S. Multi-Expert System for the Differentiation Between Subjects Affected by Higher-Level Gait Disorder and Matched Controls Applied on Brain MR Images From the VESPR Cohort, ISMRM Workshop on Neurofluids: Anatomy, Physiology & Imaging.
[A4] Mogensen, K., **Guarrasi, V.**, Larsson, J., Hansson, W., Wåhlin, A., Koskinen, L., Malm, J., Eklund, A., Soda, P., Qvarlander, S. Differentiation between Higher-Level Gait Disorder and matched controls using deep learning on brain MR images from the VESPR cohort, Hydrocephalus2022.
[A3] Cordelli, E., D'Amico, N.C., **Guarrasi, V.**, Iannello, G., Liu, C., Santucci, D., Sicilia, R., Soda, P., Tortora, M., Tronchin, L. Bit-Omics: exploiting patient digital phenotypes for AI-driven next generation personalized medicine, Ital-IA 2022.
[A2] **Guarrasi, V.**, Iannello, G., Sicilia, R., Soda, P., Tronchin, L. XAI in Time Series and Multimodal Learning, Ital-IA 2022.
[A1] Liu, P., **Guarrasi, V.**, Sariyuce, A.E., Temporal Network Motifs: Models, Limitations, Evaluation, SIAM Workshop on Network Science (NS20).

Submitted work
[S5] **Guarrasi, V.**, Nyman, E., Nordin, S., Ng, N., Liv, P., Näslund, U., Wennberg, P., Norberg, M., Soda, P., Grönlund, C. (2024). Beyond Unimodal Analysis: Multimodal Ensemble Learning for Enhanced Atherosclerosis Disease Progression. Submitted to Computerized Medical Imaging and Graphics.
[S4] Tronchin, L., Tommy Löfstedt, Soda, P., **Guarrasi, V.** (2024). Beyond a Single Mode: GAN Ensembles for Diverse Data Generation. Submitted to European Conference on Computer Vision (ECCV).
[S3] **Guarrasi, V.**, Aksu, F., Caruso, C.M., Di Feola, F., Rofena, A., Ruffini, F., Soda, P. (2024) A Systematic Review of Intermediate Fusion in Multimodal Deep Learning for Biomedical Applications. Submitted to Information Fusion. Link: https://arxiv.org/abs/2408.02686.
[S2] Wu, Z., Chen, W., Li, X., Ruffini, F., Liu, S., Tronchin, L., Albano, D., Faiella, E., Fazzini, D., Santucci, D., **Guarrasi, V.**, Soda, P., Shen, L. Attribute-Centric Graph Modelling Network for concurrent missing tabular data imputation and COVID-19 prognosis. Submitted to Pattern Recognition.
[S1] Di Feola, F., Tronchin, L., **Guarrasi, V.,** & Soda, P. (2024). Multi-Scale Texture Loss for CT denoising with GANs. Submitted to AI Open. Link: https://arxiv.org/abs/2403.16640.

I hereby authorize the use of my personal data in accordance to the GDPR 679/16 - "European regulation on the protection of personal data".