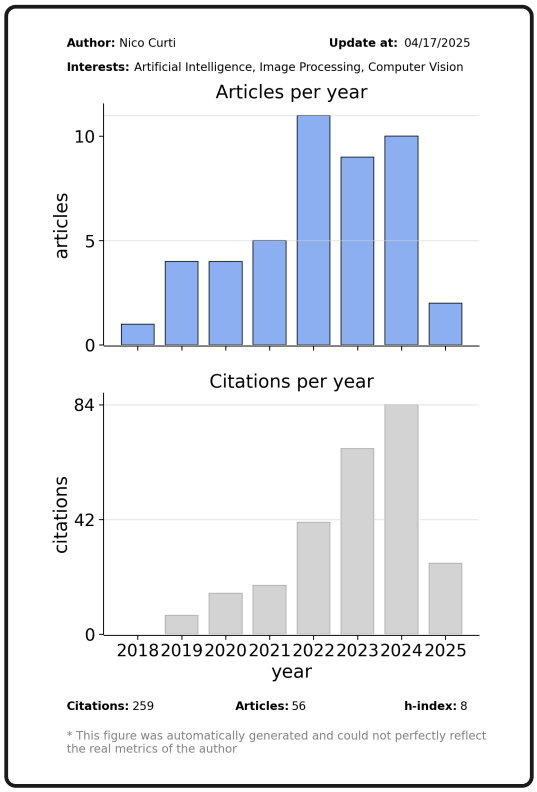
Nico Curti

Curriculum Vitae

Thursday 17th April, 2025

Dept. of Physics and Astronomy of Bologna University
Bologna (Italy)
+39 333 997 93 99
nico.curti2@unibo.it
https://github.com/Nico-Curti
https://orcid.org/0000-0001-5802-1195

Academic History



Nico Curti was born in Cattolica (RN, Italy) on 28/09/1992. He obtained the bachelor degree in Physics in 2014 at the University of Bologna (BO, Italy) and the Master Degree in *Applied Physics* with the vote of 110/110 with laude, defending the work entitled *Implementazione e benchmarking dell'algoritmo QDANet PRO per l'analisi di Big Data genomici*, developed under the supervision of Prof. Daniel Remondini and Prof. Gastone Castellani. During his work of thesis, Dr. Nico Curti deepened his informatic skills, focusing his work on the implementation and optimization of algorithms applied on *high-performance-computers*.

Later, in 2019, he obtained the PhD in Physics, defending the thesis entitled "Implementation and optimization of algorithms in Biological Big Data Analytics", developed under the supervision of Prof. Daniel Remondini, Prof. Gastone Castellani, and Prof. Armando Bazzani at the University of Bologna. Dr. Curti collaborated with numerous international research groups during his PhD, and he developed applications of data analysis for several academic and private projects.

During the years 2019-2021, Dr. Curti was research fellow at the Dept. of Experimental, Diagnostic and Specialty Medicine of Bologna University, under the supervision of Prof. Enrico Giampieri, Prof. Emanuela Marcelli, and Prof. Gastone Castellani. Along this period he collaborated to numerous projects about biomedical applications, working side-by-side by expert clinicians. In particular, he worked on the analysis of histopathological images (WSI) developing machine learning models for the segmentation and characterization of biological tissues and microscopy analyses. The resulting *Decision Support Systems* aimed to facilitate and improve the clinical efficiency of the Azienda Ospedaliera IRCCS Sant'Orsola-Malpighi of Bologna. Furthermore, he collaborated with the Ophatmological Unit of the Azienda Ospedaliera IRCCS Sant'Orsola-Malpighi of Bologna, developing fully automated solutions for the evaluation of slit lamp images. Dr. Curti worked on several scientific research projects involving the application of *artificial intelligence* models on radiological images, involving CT, PET, and MRI formats. The resulting models were used for the automated segmentation of cancer volumes and radiomic analysis of the tissues.

From 2023 to date, Dr. Curti is a junior assistant professor (fixed term) at the Dept. of Physics and Astronomy of Bologna University, under the supervision of Prof. Daniel Remondini.

Academic Degrees

2011	Diploma	Scientific High School A. Volta	
2014	Bachelor Degree in Physics	University of Bologna	*Integrazione di misure NMR e microscopiche per la descrizione quantitativa degli effetti di stress esterni su colture cellulari*
2016	Master Degree in Applied Physics	University of Bologna	*Implementazione e benchmarking dell'algoritmo QDANet PRO per l'analisi di Big Data genomici*
2019	PhD in Physics (Applied Physic)	University of Bologna	*Implementation and optimization of algorithms in Biological Big Data Analytics*

Prizes and Research Grants

2016	Research Grant	*Big Data Analytics di dati genomici e sociali high-throughput in ambiente HPC*
2017	National prize	*Premio Nazionale Giulia Vita Finzi* per la miglior tesi di laurea magistrale su attività di ricerca e sviluppo nell'ambito del calcolo dell'INFN
2018	Research Grant	*Applicazione di algoritmi di machine learning nel contesto della comunicazione medico-paziente, all'interno del progetto FILOBLU* (INFN)
2019	Research Grant	*Integrazione di dati clinici e multi-omici per la cura dei pazienti con patologie complesse e multisettoriali* (DIMES)
2020	Research Grant	*Computer Vision ed Intelligenza artificiale per l'armonizzazione e l'analisi di imaging medico e dati multiomici* (DIMES)
2021	Research Grant	*Machine learning ed Intelligenza artificiale per l'armonizzazione e l'analisi di dati multiomici del progetto HARMONY-PLUS* (DIMES)
2022	Start Cup	*Finalista* della Start Cup - Emilia-Romagna 2022 con il progetto imprenditoriale *HIDRA - Human Interactions in Disease Records and Atlases*
2022	Research Grant	*Machine learning ed Intelligenza artificiale per l'armonizzazione e l'analisi di dati multiomici in Oncoematologia (Progetto GenoMed4All)* (DIFA)

Participation in Research Projects

2017	HARMONY	*IMI2-H2020, project no. 116026, Alliance for Resourceful Medicines Offensive against Neoplasms in HematologY*
2017	IM4Future	*EU project ITN (International Training Network), project no. 721815, Innovative training in methods for future data*
2019	HARMONY-PLUS	*IMI2-H2020, project no. 116026, Alliance for Resourceful Medicines Offensive against Neoplasms in HematologY*
2021	GENOMED4ALL	*Horizon 2020/2023 program, project no. 101017549, Genomics and Personalized Medicine for all though Artificial Intelligence in Haematological Diseases*
2022	SYNTHEMA	*Horizon 2020/2023 program, project no. 1101095530, Synthetic generation of haematological data over federated computing frameworks*
2022	AIRC IG - G. Castellani	*Artificial intelligence for genomics and personalized medicine in myelodysplastic syndromes (MDS)*
2023	METASTRA	*EU project, project no. 101080135, Transforming Fracture Risk Assessment for Cancer patients with Vertebral Metastases*
2023	TRIGGER	*EU project, project no. 101057739, SoluTions foR mItiGatinG climate-induced hEalth thReats*

Teaching

2013	Volunteer at the Secondary School of the village of Guandumehhy, Mbulu district (Tanzania) as math and physics teacher.
2016	Tutor at the Science School of the University of Bologna for the teaching course *Analisi dati della fisica* of the master degree in physics (16 hours).
2020—2021 (2y)	Tutor at the course *Physical Methods of Biology* - 87995 by prof. Castellani in the course of master degree in physics at the University of Bologna.
2020—2024 (4y)	Adjunct professor at the Science School of the University of Bologna for the teaching course of *Applied Physics* - 58200 (24 hours) at the school of Nursing.
2022—2023 (2y)	Elective course *AI4Medicine* at the Dept. of Experimental, Diagnostic and Specialty Medicine of Bologna University.
2023—2024 (2y)	Tutor at the course *Progetto Lauree Scientifiche Teoria dei network e intelligenza artificiale tra fisica, biologia e social media* at the Dept. of Physics and Astronomy of Bologna University (12 hours).
2023	Tutor at the course *Artificial Intelligence and Machine Learning for Climate Science* at the Dept. of Physics and Astronomy of Bologna University (12 hours).
2023	Tutor at the course *Pattern Recognition* at the Dept. of Physics and Astronomy of Bologna University (12 hours).
2023	Teaching at the II level master course *Neurofisiologia Clinica* at the IRCCS Istituto delle Scienze Neurologiche di Bologna (1 hour).
2024	Teaching at the course *Artificial Intelligence and Machine Learning for Climate Science* at the Dept. of Physics and Astronomy of Bologna University (12 hours).
2024	Teaching at the course *Pattern Recognition* at the Dept. of Physics and Astronomy of Bologna University (12 hours).
2024	Teaching at the course *Software and Computing for Applied Physics* at the Dept. of Physics and Astronomy of Bologna University (12 hours).
2024	Teaching at the PhD course *Scienze chirurgiche e tecnologie innovative* at the Dept. of Medical and Surgical Sciences of Bologna University (4 hours).
2025	Teaching at the PhD course *Scienze chirurgiche e tecnologie innovative* at the Dept. of Medical and Surgical Sciences of Bologna University (8 hours).

Institutional Roles

2020—2025	UNIBO - DIMEC	*Degree Commission - First Cycle Degree/Bachelor in Nursing (Professional Degree)*
2022—2025	UNIBO - DIMEC	*Quality Assurance committees - First Cycle Degree/Bachelor in Nursing*
2024	UNIBO - DIFA	*Selection Committees - PhD in Physics*
2024	UNIBO - DIFA	*Working group "Founding"*

Conferences

Partecipation to the conference *Problems in discrete dynamics: from biochemical systems to rare events, networks, clustering and related topics - II Edition*, from 05/10/2017 to 07/10/2017, in which I discussed the work entitled *Learning by message-passing in networks of discrete synapses the traffic congestion prediction*.

Partecipation to the conference *EuroPar 2018*, from 27/08/2018 to 31/08/2018, in which I discussed the work entitled *Cross-Environment comparison of a bioinformatics pipeline: perspectives for hybrid computations*.

Partecipation to the conference *INFN BioPhys and PlexNet*, from 10/09/2018 to 12/09/2018, in which I discussed the work entitled *Cross-Environment comparison of a bioinformatics pipeline: perspectives for hybrid computations*.

Partecipation to the conference *INFN BioPhys and PlexNet*, from 24/09/2019 to 26/09/2019, in which I discussed the work entitled *Introducing the Complex Human Interactions in MEdical Records and Atlases Network - CHIMERA*.

Partecipation to the conference *AIM - Live Meeting*, on 16/10/2020, in which I discussed the work entitled *Automatic Pipeline for Identification of Ground Glass Opacities in CT Images of COVID-19 Affected Patients*.

Partecipation to *Notte dei Ricercatori* on 27/11/2020, in which I discussed the work entitled *Intelligenza artificiale in medicina - AI vs COVID-19*.

Partecipation to the conference *Next-AIM - kick-off meeting*, on 18/02/2022, in which I discussed the work entitled *Super Resolution in Medical Images*.

Partecipation to the conference *Complex System*, on 24/03/2022, in which I discussed the work entitled *Effectiveness of biological inspired neural network models in learning and patterns memorization*.

Partecipation to seminary *Medico per un giorno*, on 01/04/2022, in which I discussed the work entitled *Medicina del Futuro: Intelligenza Artificiale e Immagini Mediche*.

Invited Speaker to seminary *Intelligenza Artificiale in Senologia Parte II: Principi e Potenzialità*, on 16/02/2022, in which I discussed the work entitled *Intelligenza Artificiale: i diversi approcci*.

Invited Speaker to conference *Radiomics toolbox: Workflow and quality management*, from 07/09/2022 to 09/09/2022, in which I discussed the work entitled *Biophysics inspired neural network*.

Partecipation to the conference *XXII International Conference on Mechanics in Medicine and Biology*, on 20/09/2022, in which I discussed the work entitled *Semi-supervised active learning in automated wound image segmentation via smartphone mobile App*.

Partecipation to seminario *Occhio non vede Cuore non duole*, on 13/12/2022, in which I discussed the work entitled *Intelligenza Artificiale: cos'è e a cosa serve*.

Partecipation to the conference *Next-AIM - General Meeting*, from 13/02/2023 to 15/02/2023, in which I discussed the work entitled *Low-dimensional signatures from high-dimensional data: the DNetPRO algorithm*.

Invited Speaker to conference *Intelligenza Artificiale in Medicina - Società Medica Chirurgica di Bologna*, on 14/06/2023, in which I discussed the work entitled *Diagnostica per immagini: intelligenza artificiale ed automatizzazione dei processi*.

Invited Speaker to conference *Congresso Nazionale SIF*, from 11/09/2023 to 15/09/2023, in which I discussed the work entitled *Novel perspectives on the human brain modeling*.

Partecipation to the conference *INFN BioPhys 2023*, from 18/09/2023 to 20/09/2023, in which I discussed the work entitled *Graphomics: A network approach to Medical Image Analysis*.

Invited Speaker to conference *XV Congresso Nazionale AIRMM*, from 15/04/2024 to 17/04/2024, in which I discussed the work entitled *The Emergence of Pathomics: artificial intelligence applied to digital histopathology*.

Invited Speaker to seminary *Corso di Laurea in Infermieristica - Campus Rimini*, on 03/05/2024, in which I discussed the work entitled *Dati omici e intelligenza artificiale: i nuovi approcci all'analisi dei dati per la pratica clinica*.

Conference Organising Committee of the event *Physics for a Better Planet - 6th Physical Sensing and Processing Summer School*, from 08/07/2024 to 12/07/2024.

Invited Speaker to conference *2024 International Conference of the Society for Design and Process Science*, from 06/10/2024 to 09/10/2024, in which I discussed the work entitled *The Emergence of Pathomics: artificial intelligence applied to digital histopathology*.

Partecipation to the conference *next-AIM workshop on XAI techniques for medical data analysis*, from 16/10/2024 to 18/10/2024, in which I discussed the work entitled *Improved interpretability with DNetPRO classifier applied to radiomics data*.

Conference Organising Committee of the event *IIT-UNIBO Workshop on Biophysics and Data Analysis in Biomedicine*, from 27/01/2025 to 28/01/2025.

Invited Speaker to seminary *Art & Science across Italy (V edizione)*, on 21/02/2025, in which I discussed the work entitled *Intelligenza Artificiale in medicina*.

Invited Speaker to seminary *Intelligenza Artificiale e malattie dell'apparato digerente - Scuola di Specializzazione in malattie dell'apparato digerente (XVII Seminario)*, on 28/03/2025, in which I discussed the work entitled *Intelligenza artificiale per le immagini mediche e istopatologiche*.

Training courses

Partecipation at the trainig course INFN International School of Bertinoro entitled *Eighth I.N.F.N. International School on architectures, tools and methodologies for developing efficient large scale scientific computing applications*, from 24/10/2016 to 29/10/2016.

 Partecipation to *Intel-Code Modernization Workshop Rome*, from 23/05/2017 to 24/05/2017.

 Partecipation to the conference *Due seminari sul tema dell'Intelligenza Artificiale*, 13/06/2018, introduced by Prof. Gianni Zanarini and Prof. Paola Mello.

 Partecipation to the training course at the INFN Data Center CNAF of Bologna entitled *Implementazione di Sistemi di Gestione per la Sicurezza delle Informazioni in conformità alla Norma UNI CEI ISO/IEC 27001*, from 15/07/2019 to 18/07/2019.

 Partecipation to *Call for Business Plan 2021* of the Bologna University.

 Partecipation to *StartCup 2022* of Emilia-Romagna region.

Collaborations to academic thesis

2018	Sofia Farina	L-30	*A physical interpretation of network laplacian: role of perturbations and masses*
2018	Giovanni Marangi	L-30	*Teoria dei network applicata alle strutture proteiche*
2018	Lorenzo Dall'Olio	L-30	*Funzionamento di un pulsossimetro ed analisi di serie temporali pulsossimetriche*
2018	Mattia Ceccarelli	L-30	*Analisi della complessità di reti neurali generate tramite algoritmi genetici*
2019	Alex Baroncini	LM-17	*Sviluppo ed ottimizzazione di algoritmi per super-risoluzione ed object detection mediante deep neural network*
2019	Davide Ravaglia	L-30	*Modelling social behavior of Drosophila Melanogaster under the effect of drugs*
2019	Daniele Dall'Olio	LM-17	*Applicazione di un algoritmo d'apprendimento basato su sistemi fuori dall'equilibrio a dati di Genome Wide Association*
2020	Alessandro D'Agostino	LM-17	*Dataset generation for the training of Neural Networks oriented toward histological image segmentation*
2020	Mattia Ceccarelli	LM-17	*Optimization and applications of deep learning algorithms for super-resolution in MRI*
2020	Diego Cardinali	L-30	*Classification of Clausocalanus Furcatus motion utilizing the random walk theory*
2021	Davide De Paoli	L-30	*Reti neurali artificiali e apprendimenti basati sulla biofisica dei neuroni*
2021	Riccardo Biondi	LM-17	*Implementation of an Automated Pipeline for the Identification of Ground Glass Opacities on CT Scans of Patients Affected by COVID-19*
2021	Davide Panzeri	LM-17	*AI based prediction for brightfield and stained anatomopathology*
2021	Laura Verzellesi	LM-17	*Machine Learning methods for hepatocellular malignancies segmentation and MVI prediction*
2021	Giuseppe Filitto	LM-17	*Implementation of an automated pipeline to predict the response to neoadjuvant chemo-radiotherapy of patients affected by colorectal cancer*
2022	Caterina Faccioli	LM-17	*Spatial analysis in pathomics: a network based method applied on fluorescence microscopy*
2022	Stefano Bianchi	LM-17	*Introducing CHIMeRA: From the Development of a Comprehensive Biomedical Database to the Analysis of its Sub-Components*

2022	Daniele Buschi	LM-17	*Application of Active and Transfer Learning to wound image segmentation*
2023	Cesare Beccarelli	L-30	*Reti neurali ispirate alla biofisica e le loro performance come classificatori - Analisi della rete BCM*
2023	Keivan Amini	LM-17	*Navigation and human-robot interaction using reinforcement learning*
2023	Andrea Corvina	L-30	*Applicazione dell'algoritmo edsr di super-resolution ad immagini in microscopia*
2023	Sara Peluso	LM-17	*Survival analysis in radiomics: a statistical learning approach on 18F-FDG-PET/CT imaging data of patients affected by multiple myeloma*
2023	Alessandro Lapi	LM-17	*Artificial intelligence application in Digital Onco-Hematology*
2024	Alessandro Ceresi	LM-17	*Implementation of a radiomics pipeline for survival analysis in multiple myeloma patients using 18F FDG PET/CT images: unveiling prognostic markers and predictive models*
2024	Gaia Peroni	L/SNT1	*L'ecografia infermieristica nel setting di emergenza-urgenza*
2024	Andrea Buscaroli	LM/SNT1	*Tra aspettative e realtà: un'indagine sulla percezione degli studenti di infermieristica nei confronti della professione. Uno studio osservazionale trasversale*
2024	Davide Castaldi	L/SNT1	*Health Literacy nel setting dell'Università Infermieristica*
2024	Giulia Veronesi	MD-PhD	*Machine aided diagnosis and melanoma: histopathological findings*
2024	Michele Fruci	LM-17	*An Innovative Machine Learning Approach to Wound Edge Assessment using Depth Maps and Wound Border Rectification*
2025	Elettra Lucchesi	LM-17	*Characterization and classification of deep endometriosis lesions in magnetic resonance imaging*

Collaborations

aa 2014	Bachelor Degree	Collaboration with the team MRPM leaded by Prof. Paola Fantazzini of the University of Bologna, performing the analysis of contrast-phase microscopy images. My contribution was highlighted in the scientific paper *Water compartmentalization, cell viability and morphology changes monitored under stress by 1H-NMR relaxometry and phase contrast optical microscopy* (L. Brizi et al.), published on *Journal of Physics D: Applied Physics*.
aa 2016	Master Degree	Collaboration with the Data Center INFN-CNAF for the implementation and optimization of algorithms applied to genomic Big Data on distributed computing architectures.
2016—2017	Dottorato	Collaboration with Unipol Assicurazioni for the optimization of the surveyors network in terms of spatial distribution and efficiency of the interventions.
2016—2017	Doctorate	Collaboration with the city of Venice and Telecom for the analysis of pedestrian mobility on a road network using ICTs data.
2017—2018	Doctorate	Collaboration with Canon and Fabbrica Digitale for the development of new technologies for the monitoring of pedestrian flows in the framework of *smart cities*.
2018—2019	Doctorate	Collaboration with INFN Center of Rome *La Sapienza* for the development of algorithms applied to *sentimental analysis* and *natural language processing*.
2019—2023	PhD	Collaboration with the Ophtalmic Unit of the Azienda Ospedaliera IRCSS Sant'Orsola - Malpighi of Bologna for the development of *Decision Support Systems* applied to slit-lamp images.
2019—2022	PhD	Collaboration with the University of Milan - Bicocca for the development of automated systems for the standardization of microscopy and fluorescence histological images.
2019—2022	PhD	Collaboration with the Dermatological Unit of the Azienda Ospedaliera IRCCS Sant'Orsola-Malpighi of Bologna for the development of *Decision Support Systems* for the segmentation and evaluation of histopathological images.
2020—2022	PhD	Collaboration with the Dermatological Unit of the Azienda Ospedaliera IRCCS Sant'Orsola-Malpighi of Bologna for the management and analysis of chronic wound images.
2020—2023	PhD	Collaboration with the Radiological Unit of the Azienda Ospedaliera IRCSS Sant'Orsola-Malpighi of Bologna for the management and analysis of MRI, CT, and PET images.
2020—2023	PhD	Collaboration with the Hematological Unit of the Humanitas Research Hospital for the analysis of histpathological images.
2021—2023	PhD	Collaboration with the Electronic Microscopy Unit of the Azienda Ospedaliera IRCCS Sant'Orsola-Malpighi of Bologna for the analysis of TEM images.

Patents and Technological Transfer

2023	TRC Modena channel	**Interview recording** sponsored by Rotary Club Modena - 2072
2024	Microsoft HQ Milan	**Mentor Coach** to conference *AI Hackathon X Oncologia*
2024	UNIBO - DIMEC	**Patent** *No. 102024000021834 - Metodo per deterimanre l'area di ferite a partire da immagini fotografiche*

Publications

1. C. Mizzi, A. Fabbri, S. Rambaldi, F. Bertini, **N. Curti**, S. Sinigardi, R. Luzi, G. Venturi, M. Davide, G. Muratore, A. Vannelli, A. Bazzani, *Unraveling pedestrian mobility on a road network using ICTs data during great tourist events*, EPJ Data Science, 10.1140/epjds/s13688-018-0168-2 (2018 Oct 22)

2. **N. Curti** & E. Giampieri, A. Ferraro, M. C. Vistoli, E. Ronchieri, D. Cesini, B. Martelli, D. C. Duma and G. Castellani, *Cross-Environment comparison of a bioinformatics pipeline: perspectives for hybrid computations*, Euro-Par 2018: Parallel Processing Workshops, 10.1007/978-3-030-10549-5_50 (2018 Dec 12)

3. V. Boccardi, L. Paolacci, D. Remondini, E. Giampieri, G. Poli, **N. Curti**, R. Cecchetti, A. Villa, S. Brancorsini, P. Mecocci, *Cognitive decline and Alzheimer's disease in the old age: sex influence on a "cytokinome signature"*, Journal of Alzheimer's Disease, 10.3233/JAD-190480 (2019 Nov 26)

4. M. Malvisi & **N. Curti**, D. Remondini, F. Palazzo, J. L. Williams, G. Pagnacco, G. Minozzi, *Combinatorial Discriminant Analysis applied to RNAseq data reveals a set of 10 transcripts as signatures of infection of cattle with Mycobacterium avium subsp. paratuberculosis*, Animals, 10.3390/ani10020253 (2020 Feb 5)

5. L. Dall'Olio, **N. Curti**, D. Remondini, Y. Safi Harb, F. W. Asselbergs, G. Castellani, H. Uh, *Prediction of vascular ageing based on smartphone acquired PPG signals*, Scientific Reports, 10.1038/s41598-020-76816-6 (2020 Nov 12)

6. D. Dall'Olio & **N. Curti**, E. Fonzi, C. Sala, D. Remondini, G. Castellani, E. Giampieri, *Impact of Concurrency on the Performance of a Whole Exome Sequencing Pipeline*, BMC Bioinformatics, 10.1186/s12859-020-03780-3 (2021 Feb 9)

7. **N. Curti** & E. Giampieri, F. Guaraldi, F. Bernabei, L. Cercenelli, G. Castellani, P. Versura, E. Marcelli, *A fully automated pipeline for a robust conjunctival hyperemia estimation*, Applied Sciences, 10.3390/app11072978 (2021 Mar 26)

8. R. Biondi & **N. Curti**, F. Coppola, E. Giampieri, G. Vara, M. Bartoletti, A. Cattabriga, M. A. Cocozza, F. Ciccarese, C. De Benedittis, L. Cercenelli, B. Bortolani, E. Marcelli, L. Pierotti, L. Strigari, P. Viale, R. Golfieri and G. Castellani, *Classification Performance for COVID patient prognosis from automatic AI segmentation – a single center study*, Applied Science, 10.3390/app11125438 (2021 June 11)

9. S. Valente, **N. Curti**, E. Giampieri, V. Randi, C. Donadei, M. Buzzi, P. Versura, *Impact of blood source and component manufacturing on neurotrophin content and in vitro cell wound healing*, Blood Transfusion, 10.2450/2021.0116-21 (2021 Aug 3)

10. L. Cercenelli, M. Zoli, B. Bortolani, **N. Curti**, D. Gori, A. Rustici, D. Mazzatenta, E. Marcelli, *3D virtual modeling for morphological characterization of pituitary tumors: preliminary results on its predictive role in tumor resection rate*, Applied Sciences, 10.3390/app12094275 (2022 Apr 23)

[1] & These authors contributed equally to this work.

11. L. Spagnoli, M. F. Morrone, E. Giampieri, G. Paolani, M. Santoro, **N. Curti**, F. Coppola, F. Ciccarese, G. Vara, N. Brandi, R. Golfieri, P. Viale, M. Bartoletti, L. Strigari, *Outcome prediction for Sars-CoV-2 patients using machine learning modelling of clinical, radiological and radiomic features derived from chest CT images*, Applied Sciences, 10.3390/app12094493 (2022 Apr 28)

12. G. Filitto, F. Coppola, **N. Curti**[†], E. Giampieri, D. Dall'Olio, A. Merlotti, A. Cattabriga, M.A. Cocozza, M.T. Tomassoni, D. Remondini, L. Pierotti, L. Strigari, D. Cuicchi, A. Guido, K. Rihawi, A. D'Errico, F. Di Fabio, G. Poggioli, A.G. Morganti, L. Ricciardiello, R. Golfieri, G. Castellani, *Automated Prediction of the Response to Neoadjuvant Chemoradiotherapy in Patients Affected by Rectal Cancer*, Cancers, 10.3390/cancers14092231 (2022 Apr 29)

13. L. Squadrani & **N. Curti**, E. Giampieri, D. Remondini, B. Blais, G. Castellani, *Effectiveness of biological inspired neural network models in learning and patterns memorization*, Entropy, 10.3390/e24050682 (2022 May 12)

14. G. Carlini & **N. Curti**, S. Strolin, S. Fanti, D. Remondini, C. Nanni, L. Strigari, and G. Castellani, *Prediction of overall survival in cervical cancer patients using PET/CT radiomic features*, Applied Science, 10.3390/app12125946 (2022 June 10)

15. E. Dika & **N. Curti**, E. Giampieri, G. Veronesi, C. Misciali, C. Ricci, G. Castellani, A. Patrizi, E. Marcelli, *Advantages of manual and automatic computer-aided compared to traditional histopathological diagnosis of melanoma: a pilot study*, Pathology - Research and Practice, 10.1016/j.prp.2022.154014 (2022 July 8)

16. **N. Curti** & G. Veronesi, E. Dika, C. Misciali, E. Marcelli, E. Giampieri, *Breslow thickness: geometric interpretation, potential pitfalls, and computer automated estimation*, Pathology - Research and Practice, 10.1016/j.prp.2022.154117 (2022 Sep 5)

17. S. Valente, C. Ciavarella, G. Astolfi, E. Bergantin, **N. Curti**, M. Buzzi, L. Fontana, P. Versura, *Impact of Freeze-Drying of Cord Blood (CB) Serum (S) and Platelet Rich Plasma (CB-PRP) preparations on Growth Factor content and in vitro cell wound healing*, International Journal of Molecular Sciences, 10.3390/ijms231810701 (2022 Sep 14)

18. I. Budimir, E. Giampieri, E. Saccenti, M. S. Diez, M. Tarozzi, D. Dall'Olio, A. Merlotti, **N. Curti**, D. Remondini, G. Castellani, C. Sala, *Intraspecies characterization of bacteria via evolutionary modeling of protein domains*, Scientific Reports, 10.1038/s41598-022-21036-3 (2022 Sep 22)

19. **N. Curti** & G. Levi, E. Giampieri, G. Castellani, D. Remondini, *A network approach for low-dimensional signatures from high-throughput data*, Scientific Reports, 10.1038/s41598-022-25549-9 (2022 Dec 23)

20. **N. Curti** &, Y. Merli, C. Zengarini, E. Giampieri, A. Merlotti, D. Dall'Olio, E. Marcelli, T. Bianchi, G. Castellani, *Effectiveness of semi-supervised active learning in automated wound image segmentation*, International Journal of Molecular Sciences, 10.3390/ijms24010706 (2022 Dec 31)

[1†] Corresponding author.

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Open Source Software

DNetPRO	*Discriminant Analysis with Network PROcessing*
NumPyNet	*Neural Networks library in pure numpy*
Openslide	*C library for reading virtual slide images*
Byron	*Build your own neural network*
rFBP	*Replicated Focusing Belief Propagation algorithm*
plasticity	*Unsupervised Neural Networks with biological-inspired learning rules*
scorer	*Machine Learning Scorer Library*
ParseArgs	*Simple command line parser in C++*
easyDAG	*Simple template DAG scheduler in c++*
genetic	*Examples about genetic algorithms for parallel computing*
shut	*Shell Utilities and Installers for no root users*
cardio	*Pulse oximetry data processing and classification*
BlendNet	*Network viewer with Blender support*
SysDyn	*System Dynamics script utilities*
nocs	*NOCS (Not Only Colliding Spheres) exact 2D gas dynamics framework*
rSGD	*Replicated Stochastic Gradient Descent algorithm*
Walkers	*Random Walk and Optimizer Simulator*
CryptoSocket	*TCP/IP Client Server with RSA cryptography*
FiloBluService	*FiloBlu Service Manager for text message processing*
anonymize-slide	*Delete the label from a whole-slide image*
ITKGraphThickness3D	*ITK module to compute graph from 3D thickness*
OpenHiP	*Open Histo-Pathomics library*
Active Learning Validator	*Utility HTML+JS script for ASSL projects*
pyGraphomics	*Graphomics feature extraction in Python*
pyhide	*A simple python code obfuscator*
deepskin	*Wound analysis using smartphone images*
glomerular-basement-membrane	*GBM thickness estimation via ASSL model*
triggerIO	*Web Server and APIs for the TRIGGER EU Project*
RedAI-app	*RedAI app - smartphone application for hyperemia estimation*
RedAI-service	*RedAI service - server and client configuration*

Programming skills

C/C++	●●●●●	ottima
Python	●●●●●	ottima
LaTeX	●●●●◐	ottima
Bash	●●●●○	più che buona
Powershell	●●●●○	più che buona
CMake	●●●●○	più che buona
JavaScript	●●●◐○	buona
HTML/CSS	●●●◐○	buona
Java	●●●◐○	buona
Android	●●●◐○	buona
Matlab	●●●○○	buona

Furthermore, I have used programming languages like *Julia*, *Scala*, rendering softwares like *Blender* and *MeshMixer*, and virtual reality softwares like *SteamVR* and *Unity*.

Language skills

Italian:	●●●●●	Mother language
English:	●●●●○	B2 level

Bologna, Thursday 17th April, 2025

Autorizzo al trattamento dei dati personali contenuti in questo documento ai sensi dell'articolo 13 del D. Lgs. 196/2003.