Curriculum vitae of teaching and scientific activities of Paolo Soda

1. Personal data and curriculum vitae

Personal info
I was born in
Personal ID:
Address:
Mobile: +

Work experience

From 2015	Associate professor in Computer Science and Computer Engineering (ING-INF/05), Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
From 2020	Member of University Task Force for COVID-19 Distance Learning, Università Campus Bio-Medico di Roma, Italy. The task Force is composed by 10 persons of the administrative-IT area and 3 professors.
From 2020	Member of the Commission for quality in research (AQR, Assicurazione Qualità della Ricerca), Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
From 2020	Scientific Director of the Second Level Master in Digital Open Innovation & Entrepreneurship, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.
From 2018	Co-Chair of the Collaborative Laboratory of Precision Medicine & BioData Analytics, Università Campus Bio-Medico di Roma in conjunction with Centro Diagnostico Italiano, Milan.
From 2018	Rector representative for the innovation in didactic.
2018	He got the National Scientific Qualification to function as Full Professor in Computer Science and Computer Engineering (ING-INF/05).
2015--2019	Member of the Students-Teachers Commission (Commissione paritetica docenti-studenti), Department of Engineering, Università Campus Bio-Medico di Roma.
2015--2019	Co-representative of the Industry-University Committee, section of Biomedical Engineer, Department of Engineering, Università Campus Bio-Medico di Roma.
2014	Temporary contract Computer Science and Computer Engineering (ING-INF/05) for developing a research project entitled "Development of algorithms to localize the cells in three-dimensional microscopic images", Department of Engineering, Università Campus Bio-Medico di Roma.
2009-2014	Assistant professor in Computer Science and Computer Engineering (ING-INF/05), Department of Medicine, Università Campus Bio-Medico di Roma.
2008-2009	PostDoc in Computer Science and Computer Engineering (ING-INF/05), Department of Engineering, Università Campus Bio-Medico di Roma. Title of the research project: "Data, signals and images to characterize for diagnostic proposes the human behaviour in unstructured environments".

Education

2004-2008	PhD in Biomedical Engineering at Università Campus Bio-Medico di Roma, Italy, in the scientific field of computer science and computer engineering. Thesis title: "Computer-Aided Diagnosis in Antinuclear Autoantibodies Analysis". Link **here**.
2002-2004	Master Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Italy. Final mark: 110/110 cum laude. Thesis title: "Automation in image diagnostic procedure in immunofluorescence: acquisition, processing and classification".
1999-2002	Bachelor Degree in Biomedical Engineering, Università Campus Bio-Medico di Roma, Italy. Final mark: 110/110 cum laude. Thesis title: "Development of a non-invasive device for otorhinolaryngology surgery".
1994-1999	High School Diploma – Scientific Lyceum Amedeo Avogadro, Rome. Final mark: 100/100.

Post-master courses

I attended at the following PhD schools and courses:

2005	*5° Scuola Estiva di Visualizzazione Scientifica e Grafica Interattiva 3D (Summer school in scientific visualization and interactive graphic)*, Cineca, Bologna, Director: Eng. Antonella Guidazzoli.
2005	*3rd British Computer Society Summer School on Pattern Recognition*, British Computer Society, Director: prof. S. Singh.
2006	*Percorso formazione tutori (Tutor education)*, Università Campus Bio-Medico di Roma-MIUR, Director: prof. P. Binetti.
2006	*Vismac 06: La visione delle Macchine (Machine and computer vision)*, GIRPR (Gruppo Italiano Ricercatori Pattern Recognition), Director: prof. R. Pirrone.
2007	*International Computer Vision Summer School*, Università di Catania, University of Cambridge, Directors: prof. R. Cipolla and prof. S. Battiato.

Personal grants

2017	Grant Programme Università Campus Bio-Medico di Roma: the programme supports me to spend a teaching/research period in Eindhoven University of Technology, Department of Computer Science. The topics are related to machine learning in social microblog analysis as well as in multivariate time-series forecasting (in cooperation with Prof. M. Pechenizkiy).
2012	European mobility/staff training to carry out scientific and didactic activities at Eindhoven University of Technology on machine learning and computer vision topics, with particular reference to advances in human action recognition and elderly monitoring (in cooperation with Prof. M. Pechenizkiy).
2009	European mobility/staff training to carry out scientific and didactic activities at Polytech'Nice, Université de Nice-Sophia Antipolis on pattern recognition and machine learning topics, with particular reference to learning methods for imbalance datasets (in cooperation with Prof. M. Barlaud).
2008	PostDoc grant in Computer Science and Computer Engineering (ING-INF/05), Department of Engineering, Università Campus Bio-Medico di Roma. Title of the research project: "Data, signals and images to characterize for diagnostic proposes the human behaviour in unstructured environments".

2004	Grant for the XX PhD course in Biomedical Engineering at Università Campus Bio-Medico di Roma.
2004	Grant as Research Assistantship at Clemson University, (US) Department of Bioengineering.

Language skills

Excellent knowledge of spoken and written English. Certificates:

- TOEFL with score equal to 250/300 (ETS ranking position: 85%);
- GRE with score equal to 800/800 (quantitative) and 4.0/6.0 (analytical writing).

2. Teaching

International tenure

2019	"IoT & Data Science Bootcamp", Hughes Hall College, Cambridge, UK, and Università Campus Bio-Medico di Roma.
2017	Department of Computer Science, Eindhoven University of Technology, The Netherlands. Paolo Soda held lectures for PhD and master students on machine learning, data mining, and computer vision.
2015	Scuola Superiore Medico Tecnica (SSMT), Locarno (Switzerland), class of "Digital imaging", students of radiology technicians.
2014	Faculty of Computer Science, Henan University, Henan (China), class of "Machine Learning".
2013	Scuola Superiore Medico Tecnica (SSMT), Locarno (Switzerland), class of "Digital imaging", continuing education of radiology technicians.
2012	Department of Computer Science, Eindhoven University of Technology, The Netherlands. He held lectures for PhD and master students on machine learning, data mining, and computer vision.
2009	Polytech'Nice, Université de Nice-Sophia Antipolis, France. He held lectures for PhD and master students on machine learning, pattern recognition, and computer vision.

National tenure – other institutions

2020	Lectures on Artificial Intelligence and advanced analytics, Odyssey program, Teleconsys, Italy.
2019	Lectures on "Information flows in the National Health System" (I flussi informativi) and "The electronic health record" (Il fascicolo sanitario elettronico), Managerial Training Course for general manager, health director and administrative director of companies of the Puglia Regional Health System (Corso di Formazione manageriale per direttore generale, direttore sanitario e direttore amministrativo delle aziende ed enti del Sistema Sanitario della Regione Puglia), School of Management, Università degli Studi di Foggia, Italy.
2019	Lectures on "Information flows in the National Health System" (I flussi informativi) and "The electronic health record" (Il fascicolo sanitario elettronico), Managerial Training Course for general manager, health director and administrative director of companies of the Puglia Regional Health System (Corso di Formazione manageriale per direttore generale, direttore sanitario e direttore amministrativo delle aziende ed enti del Sistema Sanitario della Regione Puglia), School of Management, Università Lum Jean Monnet, Italy.
From 2018	Fundamentals of Computer Science and C++, Bachelor degree in Computer Science – Digital Engineering program, ELIS – Politecnico di Milano.
2018	Algorithms and principles of computer science, Bachelor degree in Computer Science – Digital Engineering program, ELIS – Politecnico di Milano.
2018	Course of Exploratory data analysis & Data visualization, Master in IoT Data Analysis and Security, ELIS-CISCO.
2018	Course of Machine Learning, Master in IoT Data Analysis and Security, ELIS-

CISCO.

2017 Course of Machine Learning, SkillZone programme, a programme on IoT data analysis organized by ELIS-CISCO.

2017 Lectures on "e-health" and "e-health technologies assistance", Second Level Master in Management and Innovation in Public Healthcare (Master di II Livello in Management e Innovazione nella Sanità Pubblica), Università degli Studi Mediterranea di Reggio Calabria, Italy.

National tenure – Università Campus Bio-Medico di Roma

I have held several courses during these years at Università Campus Bio-Medico di Roma, serving also as course coordinator. Below there is the detailed list of my appointments:

From 2021 Course of Fundamentals of Artificial Intelligence, Master degree in Engineering of Smart Systems, Department of Engineering.

From 2021 Course of Computer Vision, Master degree in Engineering of Smart Systems, Department of Engineering.

From 2021 Course of Operating systems and Networking, Bachelor degree in Industrial Engineering, Department of Engineering.

2018--2020 Course of Computer Science, within the integrated course in Statistics and Physics. Bachelor degree in Physiotherapy, Department of Medicine.

From 2017 Course of Telematics Applications, Master degree in Biomedical Engineering, Department of Engineering.

From 2016 Course of Machine Learning and Big Data Analytics, Master degree in Biomedical Engineering, Department of Engineering.

2009-2015 Course of Bio-Inspired Computational Models, Master degree in Biomedical Engineering, Department of Engineering.

2010--2020 Coordinator of the integrated course of Computer Engineering and Hygiene. Here I have been lecturer of Image Processing. Bachelor degree in Radiology and Radiotherapy, Department of Medicine.

2010-2018 Course of Computer Science, within the integrated course in Statistics, Mathematics and Physics. Bachelor degree in Radiology and Radiotherapy, Department of Medicine.

2010--2020 Course of Computer Science, within the integrated course of Public Health Nursing, Bachelor degree in Nursing, Department of Medicine.

2010--2014 Course of Computer Science, within the integrated course of Mathematics, Physics, and Computer Science for the Bachelor degree in Food and Nutrition Science, Department of Medicine.

2008--2020 Course of Computer Science, within the integrated course of Statistics and Computer Science, Master degree in Medicine and Surgery, Department of Medicine.

Collaborations to classes

I cooperated to the following courses at Università Campus Bio-Medico di Roma:

2013-2015 Lecturer for the course of Telematics applications for Health, Master degree in Biomedical Engineering, Department of Engineering.

2008-2009	Teaching assistantship of the course of Knowledge Engineering and Expert Systems, Master degree in Biomedical Engineering, Department of Engineering.
2006-2009	Teaching assistantship for laboratory practice of the course of Computer Science, Bachelor degree in Biomedical Engineering, Department of Engineering.
2006-2009	Teaching assistantship of the course of Image Processing, Master degree in Biomedical Engineering, Department of Engineering.
2005-2007	Lecturer for the course of Image Processing, Master degree in Biomedical Engineering, Department of Engineering.
2005-2006	Lecturer on Matlab, within the course of Computer Science, Bachelor degree in Biomedical Engineering, Department ol of Engineering.
2004-2005	Lecturer on image processing and data analysis, within the course of Cellular and Molecular Biology, Master degree in Biomedical Engineering, Department of Engineering.

Theses

Since 2005, I have been advisor and co-advisor of more than 100 master and bachelor theses in Biomedical Engineering, Industrial Engineering, Radiology and Radiotherapy, Nursing, and in the Master "II Livello in Management e Innovazione nella Sanità Pubblica".

The theses I supervised covered different areas of computer science, and very often they are interdisciplinary dissertations, overlapping with other medical and engineering areas, asking for cooperation with the Unit of Immunology,Unit of Physiatrics, Unit of Radiology and Radiotherapy, Unit of Otorhinolaryngology, Unit of Geriatrics of University Hospital, as well as with the Unit of Measurements and Biomedical Instrumentation, the Unit of Automatic, the Unit of Biomedical Robotics and Biomicrosystems, the Unit of Tissue Engineering of Department of Engineering. Furthermore, some of these theses were developed outside the Univerisity, such as Philips Campus at Eindhoven (The Netherlands), 2M Engineering (The Netherlands), Boston Children Hospital (US), Engineering spa, HPE, Das srl, Centro Diagnostico Italiano (Milan), Gemelli, Corpo Nazionale dei Vigili del Fuoco. A short list of main themes discussed in the master and bachelor theses is:

- Video, image and signal processing for gait analysis;
- Video, image and signal processing to develop methods to support medical and clinical decisions;
- Analysis of informative systems in nursery and radiology;
- Application of computer vision methods to control the space access in the university;
- Autofocus algorithms in microscopy;
- Brain plasticity analysis trough the use of computer games;
- Shape perception analysis trough the use of computer games;
- Big data and data analytics;
- Tele-monitoring;
- Brain network analysis;
- Extracting knowledge from microscope images;
- Signal processing;
- Radiomics.

I also supervised the following PhD theses:

XXXII cycle	PhD dissertation in Bioengineering and Biosciences, curriculum in Information Technology in Biomedicine, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.

XXXI cycle PhD dissertation in Bioengineering and Biosciences, curriculum in Information Technology in Biomedicine, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.

XXIX cycle PhD dissertation in Bioengineering and Biosciences, curriculum in Biomedical Engineering, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.

XXVI cycle PhD dissertation in Biomedical Engineering, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.

XXVI cycle PhD dissertation in Biomedical Engineering, Department of Engineering, Università Campus Bio-Medico di Roma, Italy.

3. Research activity

Research themes

A summary of my research is presented in the teaching and research statement, attached to my CV. In a nutshell, my interests focus on the analysis of signals, images, videos and other data, aiming to develop new approaches and technologies able to deal with real world challenges, and aiming to develop new applications exploiting state-of-the-art methodologies.

Responsibilities for studies and research activities entrusted by public and private institutions

2021	Scientific responsibility for the research contract entitled "Technological Assistance Service for the development of new functionalities to improve the performance of the Artificial Intelligence (AI) algorithm BPCOmedia in the detection of potentially dangerous situations in COPD and COVID-19 patients in home isolationt", entrusted by BPCOMedia srl.
2021	Scientific responsibility for the research contract entitled "ShowmotionHome" , entrusted by NCS LAB srl. Value: 25k€
2020	Scientific responsibility for the research contract entitled "Objective Speech Quality Measurement System" (Sistema di Misura Oggettiva della Qualità del Parlato), entrusted by Mediavoice srl. Value: 40k€
2020	Scientific responsibility for the research contract entitled "Explanable AI for Predictive Customer Management", entrusted by Consel and Generali Italia. Value: 20k€
2020	Scientific responsibility for the research contract entitled "WE-EASE-IT - An Open Smart Ambulatory 4.0 Empowering Chronic Patients", entrusted by OpenFiber. Value: 37k€
2019	Scientific responsibility for the research contract entitled "Servizi tecnici di sperimentazione" (Experimental technical services), entrusted by Laboratorio Informatica Applicata (L.I.A.).
2018	Scientific responsibility for the research contract entitled "Servizi tecnici di progettazione e implementazione di innovazione di prodotto o di processo produttivo" (Technical services for the design and implementation of product innovation or production process), entrusted by Laboratorio Informatica Applicata (L.I.A.). The project is allowing to activate a postdoc position in computer science and computer engineering.
2018	Scientific responsibility for the research contract entitled "SIB-ECG: Sistema di Identificazione Biometrica tramite ECG" (SIB-ECG: Biometric Identification System through ECG), entrusted by Laboratorio Informatica Applicata (L.I.A.).
2015	Scientific responsibility for the research contract entitled "Realizzazione di un Dispositivo Medico per l'analisi precoce di riacutizzazioni in pazienti BPCO" (Creation of a Medical Device for the early analysis of exacerbations in COPD patients), entrusted by Laboratorio Informatica Applicata (L.I.A.).
2015	Scientific responsibility for the research contract entitled "Sviluppo di uno strumento software per l'individuazione della configurazione ottimale di protesi acustiche sulla base di dati antropometrici del paziente e analisi dei dati relativi alle configurazioni individuate per un insieme di pazienti di riferimento" (Development of a software tool for the identification of the optimal configuration of hearing aids based on patient anthropometric data and analysis of the data related to the configurations identified for a set of reference patients), entrusted by LINEAR SRL. The

contract allowed to activate a short-term cooperation contract.

2009 Scientific responsibility for the research contract on the project " Classificazione di immagini in Immuno Fluorescenza per la diagnosi di malattie autoimmuni" (Classification of Immuno Fluorescence images for the diagnosis of autoimmune diseases), supported by Regione Campania. My role consists in coordinating all the activities related to image acquisition and processing in Indirect Immunofluorescence, as well as in developing algorithms for image segmentation. Project coordinator: Prof. G. Percannella, Dip. Ing. Elettronica e Ing. Informatica, Università di Salerno.

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

2021-2023 Project coordinator of the research project entitled "We-ease-it: a smart and intelligent ambulatory for Hospital 4.0" (We-ease-it: Un ambulatorio smart e intelligente per l'Ospedale 4.0), supported by Regione Lazio. The project hires a three-year position in computer science and computer engineering as assistant professor.

2021 Scientific responsibility of the "GO for IT" program, supported by Fondazione CRUI and University and Research Department, Italy. The project allowed to activate a postdoc position in computer science and computer engineering.

2020-2021 Scientific Director of the Formative Plan for Industry "Odyssey", supported by Fondimpresa, the main national organization for lifelong learning in industry. Topics: AI, big data, analytics, cybersecurity, IoT, cloud computing, design thinking.

2020-2022 Unit coordinator of the project "University-Industry Educational Centre In Advanced Biomedical And Medical Informatics (CeBMI)", supported by European Commission, Executive Agency for Education, Audiovisual and Culture (EACEA), program Erasmus+: Higher Education-Knowledge Alliances, Bologna Support, Jean Monnet.

2020-2022 Unit coordinator for the research project entitled "Platform for precision medicine. Artificial Intelligence and integrated clinical diagnostics" (Piattaforma per la medicina di precisione. Intelligenza Artificiale e diagnostica clinica integrata). The project is supported by MISE, and the coordinator is Bracco spa. Duration: 36 months.

2019-2021 Unit coordinator for the research project entitled "CLARO: a CoLlAborative multi-sources Radiopathomics approach for personalized Oncology in non-small cell lung cancer", The project is supported by an internal call (externally reviewed) of Università Campus Bio-Medico di Roma. Duration: 24 months.

2016-2018 Unit coordinator for the research project entitled ""A novel approach to identify COPD phenotypes, forecast clinical course and plan the therapeutic strategy". The project was supported by Fondazione Roma, within the programme Non Communicable Diseases (NCDs). Duration: 24 months. The project allowed to activate a postdoc position in computer science and computer engineering.

2013-2015 Principal investigator of the project entitled "Classification of time-evolving medical data with skewed probability distributions: applications to Indirect Immunofluorescence" ("Classificazione di dati medici che evolvono nel tempo con distribuzioni di probabilità sbilanciate: applicazioni all'Immunofluorescenza Indiretta"). The project was supported by the National Foreign Department, within the programme for Italy-China cooperation.

2010-2013 Principal investigator for the research project entitled "SlideImaging 2010". The project was supported by Regione Lazio under the programme "Progetti Imprendit-

oriali, Azioni verticali per lo Sviluppo dell'innovazione e il trasferimento tecnologico". The project allowed to activate a three-year grant for a doctoral student in computer science and computer engineering (XXVI cycle).

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

Conference steering committee chairing

2018-2021 Chair of the steering committee of IEEE International Symposium on Computer-Based Medical Systems (CBMS).

IEEE Technical Committee Chairing and participation

From 2017 Chair of the IEEE Technical Committee on Computational Life Sciences (TCCLS, http://tccls.computer.org/), a technical committee of IEEE Computer Society (CS), with more than 850 members worldwide. It promotes research in all aspects of computational methods and tools with applications in Life Sciences, with a particular emphasis in biology, medicine and healthcare services. It provides a platform for practitioners and researchers to exchange information and resources related to the fields of bioinformatics, Systems Biology, medicine, and healthcare informatics.

From 2018 Member of the executive committee of the IEEE Technical Consortium on High Performance Computing (https://tc.computer.org/tchpc/). It advances and coordinates the work in the field of high performance computing networking, storage, and analysis concepts, technologies and applications. The TCHPC provides a forum for the discussion and the exchange of information to advance the theory and the practice in this field of interest.

From 2019 Founding member of the IEEE Technical Committee on Brain-inspired Cognitive Systems (TC-BCS). It focuses on cognitive and autonomous systems, hybrid human-machine systems, and their societal implications. TC-BCS advances classic computers from data processors to the next generation of knowledge processors mimicking the brain. TC-BCS enables an overarching link synergizing the three classical fields of SMCS towards the emerging symbiotic societies driven by the fast advances of AI, computational intelligence, and autonomous systems.

Conference steering committee membership

From 2017 Member of the International Advisory Panel of International Conference on Robotic Automation System (ICORAS).

From 2012 Member of the steering committee of IEEE International Symposium on Computer-Based Medical Systems (CBMS).

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

2021 Co-General Chair of the 34th IEEE International Symposium on Computer-Based Medical Systems, Aveiro, Portugal, 2021. Co-General Chairs: Prof. José Luís Oliveira, University of Aveiro (Portugal), Prof. Agma Traina, University of São Paulo (Brazil).

2021 Chair of the Program Committe of the IEEE International Conference on Information and Digital Technologies 2021, June 22- 24, 2021, Zilina, Slovakia.

2021 Publicity chair of International Conference on Healthcare Informatics (ICHI) 2021, Lisbon, Portugal.

2020 Publicity chair of 11th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics 2020.

2020 Co-General Chair of the 33rd IEEE International Symposium on Computer-Based Medical Systems, Rochester, US, 2020. Co-General Chairs: Prof. KC Santosh, University of South Dakota, Dr. Zelalem Temesgen, Mayo Clinic.

2020 Program Chair of the 19th International Conference on Cognitive informatics & Cognitive Computing (ICCI*CC), Beijing, China, 2020

2019 Co-General Chair of the 32nd IEEE International Symposium on Computer-Based Medical Systems, Córdoba, Spain, 2019. Co-General Chairs: Prof. S. Ventura, Universidad de Córdoba, Prof. A.R. González, Universidad Politécnica de Madrid.

2019 Program Chair of the 18th International Conference on Cognitive informatics & Cognitive Computing (ICCI*CC), Milan, Italy, 2019

2018 Co-Programme Chair of the 31st IEEE International Symposium on Computer-Based Medical Systems, Karlstad, Sweden, June, 20-22, 2018. Co-Programme Chairs: Prof. J. Hollmen, Aalto University School of Science, Finland; Prof. C. McGregor, University of Ontario Institute of Technology, Canada.

2017 Programme coordinator of the 1st IEEE International Rural and Elderly Health Informatics Conference (IREHI), December 13-17, 2017, Lome, Togo.

2016 Co-General Chair of the 29th IEEE International Symposium on Computer-Based Medical Systems, Belfast, Northern Ireland, 2016. Co-General Chairs: Prof. A. Marshall, Queen's University Belfast, Prof. B. Kane, Trinity College Dublin.

2014 Co-Programme chair of the 27th IEEE International Symposium on Computer-Based Medical Systems (CBMS), May 27-29, 2014, New York, US.
Co-Special Tracks chair: Dr. P. McCormick, Icahn School of Medicine at Mount Sinai, New York, US; Prof. J. Hollmen, Aalto University School of Science, Finland.

2013 Co-Special Tracks chair and Publication Chair of the 26th IEEE International Symposium on Computer-Based Medical Systems (CBMS), June 20-22, 2013, Porto, Portugal.
Co-Special Tracks chair: Dr. P. Lucas, Radboud University Nijmegen, The Netherlands.

2012 Co-General chair and Financial chair of the 25th IEEE International Symposium on Computer-Based Medical Systems (CBMS), June 20-22, 2012, Rome, Italy. Co-General Chair: Prof. F. Tortorella, Università di Cassino e del Lazio Meridionale, Italy.

Conference contest organization

2012 Co-Chair of contest entitled "HEp-2 Cells Classification", hosted by the 21st International Conference on Pattern Recognition, Tsukuba, Japan, November 11-15, 2012. Co-organizers: Prof. G. Percannella and Prof. P. Foggia, Dipartimento di Ingegneria Elettronica e Ingegneria Informatica, Università di Salerno, Italy. The contest got 135 registrations, and 28 teams submitted an executable file, and there were more than 30 registrations at the ICPR session.

Conference Track Chairing

2018 Track Chair of "Track 5: Cognitive computing and Deep Learning in Life Sciences (Associated with IEEE Computer Society)", IEEE Life Sciences Conference (LSC), October 28-30, 2018, Montreal, Canada.

2017 Track Chair of "Track 5: Cognitive computing and Deep Learning in Life Sciences (Associated with IEEE Computer Society)", IEEE Life Sciences Conference (LSC), December 13-15, 2017, Sydney, Australia.

2014 Co-Chair of "Image Processing Track" at the 27th IEEE International Symposium on Computer-Based Medical Systems, New York, NY, USA, May 27-29, 2014. Track Co-Chairs: Dr. S. Antani, U.S. National Library of Medicine, National Institutes of Health, Prof. A. Ruggieri, Dipartimento di Ingegneria dell'Informazione, Università di Padova, Italy.

Conference Special Track Chairing

2013 Co-chair of the Special Track entitled "Computer-assisted analysis of capillaroscopic images", 26th IEEE International Symposium on Computer Based-Medical System, June 20-22, 2013, Porto, Portugal. Co-Chairs: Dr. A. Adamo, Adamo srl, Dr. G. Scardina, Università di Palermo, Dr. C. Valenti, Università di Palermo.

2012, 2013 Co-chair of the Special Track entitled "Learning-based biomedical information systems", 25th and 26th IEEE International Symposium on Computer Based-Medical System, June 20-22, 2012, Rome, Italy and June 20-22, 2013, Porto, Portugal. Co-Chairs: Prof. M. Pechenizkiy, Eindhoven University of Technology, Prof. S. Puuronen, University of Jyvaskyla, Prof. F. Tortorella, Università di Cassino e del Lazio Meridionale, Dr. A. Tsymbal, Siemens AG.

2009, 2010, 2011 Co-chair of the Special Track entitled "Knowledge Discovery and Decision Systems in Biomedicine", held in 2009 (August 3-4, Albuquerque, US), 2010 (October 12-15, Perth, Australia) and 2011 (June 27-30, Bristol, UK) at the IEEE International Symposium on Computer Based-Medical System. Co-Chairs: Prof. M. Pechenizkiy, Eindhoven University of Technology, Prof. S. Puuronen, University of Jyvaskyla, Prof. F. Tortorella, Università di Cassino e del Lazio Meridionale, Dr. A. Tsymbal, Siemens AG.

2008 Co-chair of the Special Track entitled "Computer Based Decision Systems in Biomedicine", IEEE International Symposium on Computer Based-Medical System (June 17-19, 2008, Jyväskylä, Finlandia). Co-Chair: Prof. F. Tortorella, Università di Cassino e del Lazio Meridionale.

Organization of training days and of national scientific events

2019 Scientific chair of "Radiomics and Artificial Intelligence", Milan, Novembre 15, 2020. Organized in collaboration with Centro Diagnostico Italiano spa, Milan.

2018 Scientific chair and organizer of the national conference "Lab-on-Chip & Bio-data analytics: for a post-Fordism welfare" (Lab-on-Chip & Bio-data analytics: per una sanità post-fordista) organized in cooperation with ISASI-CNR and Study center Eleatiche, Naples, Italy.

2018 Scientific chair of the training day entitled "Radiomics: the future is now", Naples, Italy, November 19, 2018. The training day was organized in collaboration with Centro Diagnostico Italiano spa, Milan.

2018 Scientific chair of the training day entitled "Radiomics: the future is now", Milan, Italy, October 27, 2018. The training day was organized in collaboration with Centro Diagnostico Italiano spa, Milan.

2017 Scientific chair of the training day entitled "The Gotthard Days 2017 - Radiomics: the integration of radiological data and not only for personalized medicine", Piotta, Switzerland, September 23, 2017. The training day was organized in collaboration with the Swiss Association of Medical Radiology Technicians and the Locarno Medical and Technical Professional Medical Center.

Invited talks

2021 Invited lecture entitled "AiforCOVID – a multicentre study", held at EuSoMII Webinar, September 30, 2021

2021 Invited lecture entitled "Artificial intelligence meets medical imaging for personalized oncology", held at VisMac PhD Summer School, CVPL, Palermo, September 2021.

2021 Lectio magistralis entitled "Bio-image informatics: empowering humans' skills by machine learning" held at 13th PhD school of the PhD course on Converging Technologies for Biomolecular Systems, Department of Biotechnology and Bioscience, Università di Milano-Bicocca, September 23, 2021

2021 Lectio magistralis entitled "Artificial Intelligence and Machine Learning: an introduction" held at 13th PhD school of the PhD course on Converging Technologies for Biomolecular Systems, Department of Biotechnology and Bioscience, Università di Milano-Bicocca, September 21, 2021

2021 Invited lecture entitled "Artificial Intelligence meets Health and Life Sciences", held at the Freshers' Week, LUISS , September 09, 2021

2021 Lectio magistralis entitled "Machine learning for bio-data analytics" held at 7th Winter school on biotechnology, PhD course on Biotechnology, Università di Perugia, January 20, 2021

2020 Invited talk entitled "Trust or not trust? The dilemma at the time of artificial intelligence" (Fidarsi o non fidarsi? Il dilemma al tempo dell'intelligenza artificiale) held at the conference on "Artificial Intelligence and Everyday life", organized by Fondazione Luce, Milan, February 22, 2020,

2020 Invited lecture entitled "Radiomics and artificial intelligence: useful tools for clinical decision making?" (Radiomica e intelligenza artificiale: strumenti utili per la decisione clinica?), held at the life-long training on "From 5R To 5P: The Radiotherapy Evolution In Locally Advanced Inoperable NSCLC" (Dalle 5R alle 5P: l'evoluzione della Radioterapia nel NSCLC Localmente Avanzato Inoperabile), Rome, Italy, November 5, 2020.

2019 Invited keynote entitled "Artificial intelligence meets clinical imaging for personalized medicine in oncology", held at the IEEE International Conference on Digital Technologies, Zilina, Slovakia, June25-27, 2019.

2019 Invited talk entitled "Imaging meets Artificial Intelligence: Status-Quo and Quo-

Vadis" (L'Imaging incontra l'Intelligenza Artificiale: Status-Quo and Quo-Vadis) held at the conference "Radiomics, the future is now. Debates with Engineers, Clinicians and Physicists", (La Radiomica: il futuro è qui. Dialoghi con Ingegneri, Clinici e Fisici) Palermo, Italy, June 15, 2019.

2019 Invited lecture entitled "Machine Learning and Artificial Intelligence", held at the life-long training on "New frontiers in Radiology", Matera, Italy, November 22-23, 2019.

2019 Invited lecture entitled "The innovation of expert systems to standardize systemic autoimmune disease diagnostics" (L'innovazione dei sistemi esperti nei percorsi di standardizzazione della diagnostica delle malattie autoimmuni sistemiche), held at the life-long learning traning on "Autoimmunity Diagnostics: What New Challenges" (La diagnostica dell'autoimmunita': quali nuove sfide), Florence, Italy, January 25, 2019.

2018 Invited talk entitled "The challenge of imbalance learning in radiomics", held at the 2018 IEEE International Conference on Intelligent Informatics and BioMedical Sciences (ICIIBMS), Bangkok, Thailand, November 22-24, 2018.

2017 Invited talk entitled "Radiomics – Beyond Imaging for Personalized and Precision Medicine", held at the 2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)", Kansas City, MO, USA, November 14-16, 2017.

2014 Invited keynote entitled "BioImage Informatics - The challenge of knowledge extraction from biological images", held at the IEEE International Conference on Digital Technologies, Zilina, Slovakia, July 9-11, 2014.

2017 Invited lecture entitled "What is radiomics?", held at "The Gotthard Days 2017 - Radiomics: the integration of radiological data and not only for personalized medicine", Piotta, Switzerland, September 23, 2017.

2017 Invited lecture entitled "Machine learning in biomedicine: how does a computer-aided diagnosis system work?", held at "The Gotthard Days 2017 - Radiomics: the integration of radiological data and not only for personalized medicine", Piotta, Switzerland, September 23, 2017.s

2012 Invited lecture entitled "Recent advances in Computer-Aided Diagnosis in Indirect Immunofluorescence" held at the "Workshop on Autoimmune disease", Tel Aviv, Israel, February 5, 2012.

2011 Invited lecture entitled "The perception of shapes in random contexts", held at the workshop on "Shape perception", Centro Internazionale di Studi Interculturali di Semiotica e Morfologia, Università degli Studi di Urbino "Carlo Bo", Urbino, Italia, July 13-14, 2011.

2011 Invited lecture entitled "Recent advances in Computer-Aided Diagnosis in Indirect Immunofluorescence", held at the 3rd Annual International Congress of Antibodies, March 23-25, 2011, Beijing, China.

2011 Invited lecture entitled "Computer Aided Diagnosis: the issue of skewed data", held at the 3rd Annual World Congress of BioSoft, March 23-25, 2011, Beijing, China.

2008 Invited lecture entitled "SlideImaging Classification of IIF images", held at the Seminario Internacional Hands on Image Processing (HOIP), Tecnalia-Infotech, Bilbao, Spain, October 22-23, 2008.

Participation as a speaker at international conferences

2021	Speaker at the Deep Generative Models workshop @ MICCAI 2021.
2021	Speaker at the IEEE International Conference on Digital Technologies, Zilina, Slovakia, 2021.
2021	Speaker at the 34th IEEE International Symposium on Computer-Based Medical Systems, Portugal, 2021.
2020	Speaker at the 33rd IEEE International Symposium on Computer-Based Medical Systems, Rochester, US, 2020.
2019	Speaker at the 18th International Conference on Cognitive informatics & Cognitive Computing (ICCI*CC), Milan, Italy, 2019.
2019	Speaker at the 32nd IEEE International Symposium on Computer-Based Medical Systems, Córdoba, Spain, 2019.
2018	Speaker at the 2018 IEEE International Conference on Bioinformatics and Biomedicine BIBM, Madrid, Spain, December 3-6, 2018.
2018	Speaker at the 31st IEEE International Symposium on Computer-Based Medical Systems, Karlstad, Sweden, June 18-21, 2018.
2017	Speaker at the 2017 IEEE Life Science Conference, Sydney, Australia, December 13-15 , 2017
2017	Speaker at the 2017 IEEE International Conference on Bioinformatics and Biomedicine BIBM, Kansas City, MO, USA, November 14-16, 2017.
2017	Speaker at the 2017 Workshop on Health Informatics and Data Science, in conjunction with IEEE BIBM 2017, Kansas City, MO, USA, November 14, 2017.
2016	Speaker at the IEEE International Conference on Biomedical and Health Informatics BHI, Las Vegas, NM, USA, February 24-27, 2016.
2015	Speaker at the EMBC 2015 Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Milano, Italy, August 25-29, 2015.
2014	Speaker at the 27th IEEE International Symposium on Computer-Based Medical Systems, New York, NY, USA, May 25-29, 2014.
2013	Speaker at the 26th IEEE International Symposium on Computer-Based Medical Systems, Porto, Portugal, June 20-22, 2013.
2012	Speaker at the 25th IEEE International Symposium on Computer-Based Medical Systems, Roma, Italy, June 20-22, 2012.
2012	Speaker at the 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining PAKDD, Kuala Lumpur, Malaysia, May 29-June 1st, 2012.
2012	Speaker at the Joint IAPR International Workshop, SSPR & SPR 2012 Structural, Syntactic, and Statistical Pattern Recognition, Hiroshima, Japan, November 7-9, 2012.

2011 Speaker at the 24th IEEE International Symposium on Computer-Based Medical Systems, Bristol, UK, June 27-30, 2011.

2010 Speaker at the 23rd IEEE International Symposium on Computer-Based Medical Systems, Perth, Australia, October 12-15, 2010.

2009 Speaker at the 22nd IEEE International Symposium on Computer-Based Medical Systems, Albuqerque, NM, USA, August 3-4, 2009.

2009 Speaker at the IEEE International Conference on Health Informatics, Porto, Portugal, January 14-16, 2009.

2009 Speaker at the 15th International Conference on Image Analysis and Processing, Vietri sul Mare, Italia, September 8-11, 2009.

2008 Speaker at the IEEE International Conference on Bioinspired Systems and Signal Processing, Madeira, Portugal, January 28-31, 2008.

2008 Speaker at the 21st IEEE International Symposium on Computer-Based Medical Systems, Jyvaskyla, Finlandia, June 18 2008.

2008 Speaker at the IEEE International Conference on Health Informatics, Madeira, Portugal, January 28-31, 2008.

2007 Speaker at the 20th IEEE International Symposium on Computer-Based Medical Systems, Maribor, Slovenia, June 20-22, 2007.

2006 Speaker at the 19th IEEE International Symposium on Computer-Based Medical Systems, Salt Lake City, UT, USA, June 22-23, 2006.

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

Coordination of research activities

From 2020 Supervisor of Eng. Luisa Francini, PhD student in Science and Engineering for Humans and the Environment (XXXVI cycle) - Curriculum in Information Technology in Biomedicine, Department of Engineering, University Campus Bio-Medico of Rome. I am the only supervisor. She started in December 2020. Her salary is supported by a grant I obtained.

From 2020 Supervisor of Eng. Matteo Tortora, PhD student in Science and Engineering for Humans and the Environment (XXXVI cycle) - Curriculum in Information Technology in Biomedicine, Department of Engineering, University Campus Bio-Medico of Rome. I am the only supervisor. He started in December 2020. His salary is supported by a grant I obtained.

From 2020 Supervisor of Eng. Lorenzo Tronchin, PhD student in Science and Engineering for Humans and the Environment (XXXVI cycle) - Curriculum in Information Technology in Biomedicine, Department of Engineering, University Campus Bio-Medico of Rome. I am the only supervisor. He started in December 2020. His salary is supported by a grant I obtained.

From 2019 Supervisor of Dr. Andrea Leone, PhD student in Science and Engineering for Humans and the Environment (XXXV cycle) - Industrial Doctorate Course, Curriculum in Information Technology in Biomedicine, Department of Engineering, University Campus Bio-Medico of Rome.

From 2019 Supervisor of Dr. Domiziana Santucci, PhD student in Science and Engineering for Humans and the Environment (XXXV cycle) - Curriculum in Information Technology in Biomedicine, Department of Engineering, University Campus Bio-Medico of Rome.

From 2018 Supervisor of Eng. Natascha Claudia D'Amico, PhD student in Science and Engineering for Humans and the Environment (XXXIV cycle) - Industrial Doctorate Course, Curriculum in Information Technology in Biomedicine, Department of Engineering, University Campus Bio-Medico of Rome.

2020 Supervisor of the temporary contract of Eng. Luisa Francini. Project title: "Development of IT tools for Hospital 4.0"

2020 Supervisor of the temporary contract of Eng. Lorenzo Trochin. Project title: "Development of deep learning models for radiomics".

2020 Supervisor of the temporary contract of Eng. Matteo Tortora. Project title: "Development of computational learning models in radio-pathomics for personalized oncology".

From 2020 Scientific supervisor of the postdoc grant assigned to Dr. Eng. Rosa Sicilia, entitled "Development of artificial intelligence models for radio-pathomics in lung cancer", Department of Engineering, University Campus Bio-Medico of Rome. The grant was activated on the project "CLARO: a CoLlAborative multi-sources Radiopathomics approach for personalized Oncology in non-small cell lung cancer".

From 2020 Scientific supervisor of the postdoc grant assigned to Dr. Eng. Ermanno Cordelli, entitled "Development of computational learning models in radio-pathomics for personalized oncology", Department of Engineering, University Campus Bio-Medico of Rome. The grant was activated on the project "CLARO: a CoLlAborative multi-sources Radiopathomics approach for personalized Oncology in non-small cell lung cancer".

From 2019 Scientific supervisor of the postdoc grant assigned to Dr. Eng. Mario Merone, entitled "Development of models for multivariate analysis and prognostic algorithms in chronic obstructive bronchopneumopathy", Department of Engineering, University Campus Bio-Medico of Rome. The grant was activated on the project "A novel approach to identify COPD phenotypes", funded by the Fondazione Roma.

2019-2020 Supervisor of the temporary contract of Eng. Rosa Sicilia. Project title: "Development of artificial intelligence models for radio-pathomics in lung cancer".

2019 Supervisor of the temporary contract of Eng. Federico D'Antoni. Project title: "IT Tools for CLARO project".

2017-2019 Scientific supervisor of the postdoc grant assigned to Dr. Eng. Mario Merone, entitled "Development of models for multivariate analysis and prognostic algorithms in chronic obstructive bronchopneumopathy", Department of

Engineering, University Campus Bio-Medico of Rome. The grant was activated on the project "A novel approach to identify COPD phenotypes", funded by the Fondazione Roma.

2016-2020 Supervisor of Eng. Rosa Sicilia, PhD student in Bioengineering and Biosciences (XXXII cycle), Curriculum in Biomedical Engineering, Department of Engineering, University Campus Bio-Medico of Rome.

2015-2019 Supervisor of Eng. Ermanno Cordelli, PhD student in Bioengineering and Biosciences (XXXI cycle), Curriculum in Biomedical Engineering, Department of Engineering, University Campus Bio-Medico of Rome.

2015 Reference contact for the incoming Erasmus program, in collaboration with Gdansk University of Technology, Poland.

2015 Supervisor of the temporary contract of Eng. Alessandro Borreo. Project title: "Linear - software tool for the configuration of hearing aids".

2015 Supervisor of the temporary contract of Eng. Ermanno Cordelli. Project title: "BioImage Informatics: 2D and 3D image analysis".

2013-2017 Supervisor of Eng. Mario Merone, PhD student in Bioengineering and Biosciences (XXIX cycle), Curriculum in Biomedical Engineering, Department of Engineering, University Campus Bio-Medico of Rome.

2010-2013 Supervisor of Eng. Leonardo Onofri, PhD student in Biomedical Engineering (XXVI cycle), Department of Engineering, University Campus Bio-Medico of Rome.

2010-2013 Supervisor of Eng. Roberto D'Ambrosio, PhD student in Biomedical Engineering (XXVI cycle), Department of Engineering, University Campus Bio-Medico of Rome.

Project participation

2020 "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.

2010-2013 "B-Home": industrial project carried out in collaboration with B-Able srl. The project was supported Regione Lazio within the programme "Progetti Imprenditoriali, Azioni verticali per lo Sviluppo dell'innovazione e il trasferimento tecnologico". Role in the project: development of algorithms analyzing activities in a video.

2010-2015 "Distributed Architecture Home Modular Multifunctional Systems (DAHMS)": project was support under the programme "Progetto di Innovazione Industriale Nuove Tecnologie per il Made in Italy (articolo 1 comma 842 della legge 27 dicembre 2006), Bando Industria 2015", Ministero dello Sviluppo Economico. Role in the project: development of experimental activities.

2011-2012 "Expertise": a project supported by Provincia Autonoma di Bolzano for the development of tools supporting patients suffering from chronic obstructive pulmonary disease (COPD). Role in the project: development of methods and

algorithms for early detection of worrisome events related to COPD.

2012-2016 "ICON": a project that aims to connect the study of the brain through a new bio-inspired computational paradigm of nerve cell connectome. Role in the project: development of BioImage Informatics methods based on image processing and automatic learning for brain analysis.

2006-2008 "TACT (Thought in Action)": project supported by the 6th European Framework Program (NEST-Adventure program). The project aimed to develop non-intrusive technological devices to capture information on infant gestures. Role in the project: development of algorithms for video analysis for interpretation and understanding of the scene.

2008-2010 "SweetAge": national project focusing on the development of devices and methods for remote monitoring of patients with chronic obstructive pulmonary disease. Role in the project: development of algorithms for signal analysis.

2004-2008 "SlideImaging": industrial project supported by Das srl for the development of a computer assisted diagnosis system for image analysis in Indirect Immunofluorescence. Project partially supported by Regione Lazio under the programme "Innovazione tecnologica Sottomisura II.5.2, Ricerca e trasferimento tecnologico nei Poli d'eccellenza". Role in the project: development of a computer-aided diagnosis system for image analysis in Indirect Immunofluorescence.

Participation and collaborations in the activities of national or international research groups (since 2004)

In the following I synthetically report in chronological order the most relevant collaborations, hold with other research teams and industrial companies.

From 2006 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, Unit of Geriatrics, Unit of Urology, and with other units of the engineering departments (Unit of Measurements and Biomedical Instrumentation, Unit of Automatic, Unit of Biomedical Robotics and Biomicrosystems, Unit of Tissue Engineering of Department of Engineering).

From 2006 Research team headed by Prof. Carlo Sansone, Dip. di Ingegneria Elettrica e delle Tecnologie dell'Informazione, Università degli Studi di Napoli Federico II, Italy. I have been cooperating with this group on topics related to reliability estimation in supervised classification system, ECG-based biometrics, IIF image analysis and radiomics.

2006-2014 Research team headed by Prof. Mario Vento, Dipartimento di Ingegneria Elettronica e Ingegneria Informatica, Università di Salerno, Italy. I collaborated with this research time on topic covering pattern recognition and machine learning, with applications in indirect immunofluorescence. Together, we had a joint research project on image analysis, and we organized the contest on Hep-2 image classification during the 21st International Conference on Pattern Recognition (http://mivia.unisa.it/hep2contest/index.shtml). We also organized a special issue on Pattern Recognition entitled "Analysis and Recognition of Immunofluorescence

Images" (Vol. 47(7), 2014).

2006-2013 B-Able srl, Rome, Italy. I collaborated with this company which develops technologies to support impaired people, working together on computer vision methods applied to video stream to extract in real time information provided to elderly or impaired people. The aim was to improve their social interaction and mobility.

2004-2018 Das srl, Palombara Sabina, Italy. I have been collaborating with this company (www.dasitaly.com) which is a world leader in biomedical laboratory automation. The main results achieved within this cooperation are: (i) knowledge technological transfer on computer-aided diagnosis (projects SlideImaging, Slideimaging2010); (ii) a multicenter research to validate the classification system we developed in indirect immunoflurescence, (iii) InnovaLazio 2005 award. The cooperation has covered also topics related to video stream analysis in biomedical devices (patent "Apparatus and Method for Video-Rhino-Hygrometer (VRI) measures").

Participation and collaborations in the activities of national or international research groups (since 2009)

In the following I synthetically report in chronological order the most relevant collaborations, hold with other research teams and industrial companies.

From 2010 Research team headed by Prof. Chongsheng Zhang, School of Computer and Information Engineering, Henan University, China. I have been collaborating with this team on topics related to data stream classification when the a-priori distribution of samples is skewed among the classes. Together, we had a founded project supporting Italy-China mobility, where I was the principal investigator. Furthermore, we investigated methods for selecting training samples in supervised learning and, more recently, the impact of feature selection in imbalance learning.

2010-2014 Research team headed by Prof. Michael Barlaud, CNRS-Université de Nice-Sophia Antipolis, France. I collaborated with this team on topics related to classification of imbalance datasets using the binary classifier Universal Nearest Neighbour (UNN). Within this framework, in 2010 I spent a period of teaching and research at the CNRS-Université de Nice-Sophia Antipolis, France.

From 2009 Data mining group headed by Prof. Mykola Pechenizkiy, Department of Computer Science, Eindhoven University of Technology, The Netherlands. I started the cooperation with Mykola in 2009 as being together Special Track Chair of Special Tracks entitled "Learning-based biomedical information systems" and "Knowledge Discovery and Decision Systems in Biomedicine" during the IEEE International Symposium on Computer Based-Medical System. Then, we were together Guest Editors of Special Issue on Artificial Intelligence in Medicine (Volume 50, Issue 1, 2010) entitled "Knowledge Discovery and Computer Based Decision Support in Biomedicine". I also spent a period of teaching and research at his laboratory in 2012, where we defined a joint research programme on novelty detection and context awareness in human action recognition in video streams. Furthermore, in 2017 I visited him again, and we have been carrying put research on social microblog analysis.

Participation and collaborations in the activities of national or international research groups (since 2012)

In the following I synthetically report in chronological order the most relevant collaborations, hold with other research teams and industrial companies.

From 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.

2017-2019 Philips Research, Eindhoven, The Netherlands. I have been cooperating with the research team headed by Dr. Albertus C. den Brinker on signal analysis for at home monitoring of patients suffering by Chronic Obstructive Pulmonary Disease. This cooperation has also involved the Department of Academic Respiratory Medicine, Centre for Cardiovascular and Metabolic Research, Hull York Medical School, Castle Hill Hospital, UK.

From 2018 Research team headed by Linlin Shen, College of Computer Science and Software Engineering, Shenzhen University, Shenzhen, China. I have been cooperating on topics related to deep learning, with applications to biomedical images (IIF, radiomics).

From 2017 Research team headed by Dr. Sergio Papa, Diagnostica per Immagini, Centro Diagnostico Italiano spa - Bracco Corporate, Milan, Italy. I have been cooperating on topics related to radiomics, with particular reference to feature formulation, computation, selection and learning methods.

From 2017 National Firefighter Corp. I have been collaborating with it in a research dealing with the big data analytics on the emergency call.

2016-2019 Research team headed by Prof. Vincenzo Valentini, Radiation Oncology Department, Università Cattolica del Sacro Cuore. I have been cooperating on topics related to radiomics. This cooperation has also involved the Maastricht University Medical Center, Radiation Oncology MAASTRO-GROW School for Oncology and Development Biology, Maastricht, The Netherlands. I have been focusing on feature formulation, computation, selection and learning methods.

From 2015 Research team headed by Prof. Giuseppe Maulucci, Istituto di fisica, Università Cattolica del Sacro Cuore. I have been involved in a joint research programme with Giuseppe on methods for early detection and prediction of complications in type 1 diabetes mellitus using microscopic images of blood cells. Furthermore, we are also investigating methods for time-lapse analysis of microscope streams to catch information on granule dynamics and insulin secretion in pancreas beta cells.

From 2013 Labinformatica srl, Cagliari, Italy. I have been collaborating with this company in a research dealing with the early recognition of exacerbation in Chronic obstructive pulmonary disease (COPD). Within this project, I developed a Petri Net detection system detecting worrisome events for patient health. The algorithm was patented, and a I am co-founder of a start-up, named as BPCOMedia srl, distributing the kit for COPD monitoring.

2012--2018 European Laboratory for Non-Linear Spectroscopy (LENS) and Dipartimento di Ingegneria dell'Informazione, Università di Firenze. I'm involved in a cooperation with the LENS, in particular with the research team managed by Prof. F. S. Pavone, and with Prof. P. Frasconi (Dipartimento di Ingegneria dell'Informazione of Università di Firenze) to analyse microscope images collected using the Confocal Light Sheet Microscopy (CLSM). This research belongs to a scientific field named as BioImage Informatics. CLSM permits to collect images of the cm3 specimens with a micrometer resolution: this produces terabyte-sized datasets. My activity deals with the extraction of quantitative information from such datasets, such as the

localization of somata in brain trough the sue of supervised and unsupervised machine learning techniques.

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

Journals

2021 Co-Guest Editor: Artificial Intelligence in Medicine, Elsevier, submissions will open in 2019. Special Issue on "Artificial Intelligence in Computer-based medical systems". Co-Guest Editors: Prof. A.R. González, Universidad Politécnica de Madrid (Spain), Prof. S. Ventura, Universidad de Córdoba (Spain), Prof. P. Lucas, Leiden University (The Netherlands).

2021 Co-Guest Editor: Information Processing & Management, Elsevier, submissions will open in 2019. Special Issue on "Methods and applications in the analysis of social data in healthcare". Co-Guest Editors: Prof. A.R. González, Universidad Politécnica de Madrid (Spain), Prof. S. Ventura, Universidad de Córdoba (Spain), Prof. J.T. Fernández-Breis, Universidad de Murcia, IMIB-Arrixaca (Spain).

2019 Co-Guest Editor: Computational Intelligence, Wiley Online, submissions will open in 2019. Special Issue on "Foundations of Biomedical (Big) Data Science". Co-Guest Editors: Prof. A.R. González, Universidad Politécnica de Madrid (Spain), Prof. S. Ventura, Universidad de Córdoba (Spain).

From 2019 Editorial Advisory Board member: "International Journal of Data Mining and Bioinformatics", InterScience Publishers, ISSN: 1748-5681.

From 2017 Editorial Advisory Board member: "The Open Medical Devices Journal", Bentham Open, ISSN: 1875-1814.

2014 Co-Guest Editor: Pattern Recognition, Elsevier, Special Issue on "Analysis and Recognition of Immunofluorescence Images", Volume 47, Num. 7. Co-Guest Editor: Prof. G. Percannella, Prof. P. Foggia, Prof. M. Vento (Dipartimento di Ingegneria Elettronica e Ingegneria Informatica, Università di Salerno, Italy).

2010 Co-Guest Editor: Artificial Intelligence in Medicine, Elsevier, Volume 50, Issue 1, 2010. Special Issue on "Knowledge Discovery and Computer-Based Decision Support in Biomedicine". Co-Guest Editors: Prof. M. Pechenizkiy, Eindhoven University of Technology; Prof. F. Tortorella, Università di Cassino e del Lazio Meridionale; Dr. A. Tsymbal, Siemens AG.

From 2010 Member of the editorial committee of "Transactions on Mass-Data Analysis of Images and Signals" (Ibai-Publishing, ISSN:1868-6451).

Book series and proceedings

2020 Associate Editor: Proceedings of the 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

2020 Co-Editor: Proceedings of Computer-Based Medical Systems (CBMS), 2020 IEEE International Symposium on.

2020 Co-Editor: Proceedings of Cognitive informatics & Cognitive Computing (ICCI*CC), 2020 IEEE International Conference on.

2019 Co-Editor: Proceedings of Computer-Based Medical Systems (CBMS), 2019 IEEE International Symposium on.

2019 Co-Editor: Proceedings of Cognitive informatics & Cognitive Computing (ICCI*CC), 2019 IEEE International Conference on.

2019 Associate Editor: Proceedings of the 41st Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

2018 Associate Editor: Proceedings of the 40th Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

2018 Co-Editor: Proceedings of Computer-Based Medical Systems (CBMS), 2018 IEEE International Symposium on.

2017 Associate Editor: Proceedings of the 39th Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

2016 Co-Editor: Proceedings of Computer-Based Medical Systems (CBMS), 2016 29th IEEE International Symposium on.

2016 Associate Editor: Proceedings of the 38th Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

2015 Associate Editor: Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

2014 Associate Editor: Proceedings of the 36th Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

2013 Co-Editor: Proceedings of Computer-Based Medical Systems (CBMS), 2013 26th IEEE International Symposium on. Co-Editor: Dr. Pedro Pereira Rodrigues, University of Porto; Dr. Mykola Pechenizkiy, Eindhoven University of Technology; Prof. J. Gama, University of Porto; Dr. R. Cruz Correia, University of Porto; Prof. J. Liu, Hong Kong Baptist University; Prof. A. Traina, University of Sao Paulo; Dr. P. Lucas, Radboud University Nijmegen.

2013 Associate Editor: Proceedings of the 35th Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

2012 Co-Editor: Proceedings of Computer-Based Medical Systems (CBMS), 2012 25th IEEE International Symposium on. Co-Editor: Prof. F. Tortorella, Università di Cassino e del Lazio Meridionale; Dr. S. Antani, U.S. National Library of Medicine, National Institutes of Health; Dr. Mykola Pechenizkiy, Eindhoven University of Technology; Prof. M. Cannataro, Università di Catanzaro; Dr. A. Tsymbal, Siemens AG.

2012 Associate Editor: Proceedings of the 34th Annual International Conference of the IEEE Engineering in Medicine & Biology Society.

Teaching assignments and participation in the scientific board of PhD courses

Participation in the scientific board of PhD courses recognized by the National Education Department

2021 Member of the scientific board of the National PhD course in AI (www.https://www.phd-ai.it/)

2020 Member of the evaluation committee of the PhD course in "Metodi, modelli e tecnologie per l'ingegneria" at Università degli Studi di Cassino e del Lazio

Meridionale (XXXII cycle).

XXXIII, XXXIV, XXXV cycles — Member of the scientific board of PhD course in "Scienze e Ingegneria per l'Uomo e l'Ambiente" (Science and Engineering for Humans and the Environment) at Università Campus Bio-Medico di Roma (SSD ING-INF/05, consistent with the objectives of the course).

XXXI, XXXII cycles — Member of the scientific board of PhD course in "Bioingegneria e Bioscienze" at Università Campus Bio-Medico di Roma (SSD ING-INF/05, consistent with the objectives of the course).

XXIX cycle — Member of the scientific board of PhD course in "Bioingegneria e Bioscienze", at Università Campus Bio-Medico di Roma (SSD ING-INF/05, which is in the set of SSD of the course).

XXVIII cycle — Member of the scientific board of PhD course in "Ingegneria Biomedica", at Università Campus Bio-Medico di Roma (SSD ING-INF/05, which is in the set of SSD of the course).

XXVII cycle — Member of the scientific board of PhD course in "Ingegneria Biomedica", at Università Campus Bio-Medico di Roma (SSD ING-INF/05, which is in the set of SSD of the course).

2016 — Member of the evaluation committee of the PhD course in "Matematica e Informatica" at Dipartimento di Matematica e Informatica, Università degli Studi di Palermo.

Participation in the board of international PhD courses

2009 — Member of European PhD committee at Departamento de Ingegneria de Sistema y Automatica, Universidad del Pais Vasco, Spain.

Seminars held for PhD courses recognized by the National Education Department

2020 — PhD Programme in Complex Systems for Life Sciences (Dottorato in Sistemi Complessi per le Scienze della Vita), Politecnico di Torino, lecture on "Artificial intelligence meets clinical imaging for personalized medicine in oncology".

2020 — PhD school in "Scienze e Ingegneria per l'Uomo e l'Ambiente" (Science and Engineering for Humans and the Environment), Università Campus Bio-Medico di Roma, learning module entitled "Healthcare 4.0: an overview", specific topic on "Personalized Medicine and Healthcare 4.0: the human and technological dimension of the medicine".

2017 — PhD school in "Scienze e Ingegneria per l'Uomo e l'Ambiente" (Science and Engineering for Humans and the Environment), Università Campus Bio-Medico di Roma, learning module entitled "Models & Experiments", specific topic on "Big data: algorithms and security".

2010 — PhD school in "Ingegneria Biomedica", Università Campus Bio-Medico di Roma, learning module entitled "Dimensionality reduction".

Awards

2021 — Leader of the team that wins the international competition: "All against COVID-19: Screening X-ray Images for COVID-19 Infection", IEEE, 2021.

2021 Best paper award at the 34h IEEE International Conference on Computer-Based Medical Systems, 2021. The paper is: Sicilia, R., Francini, L., & Soda, P. (2021, June). Representation and Knowledge Transfer for Health-related Rumour Detection. In 2021 IEEE 34th International Symposium on Computer-Based Medical Systems (CBMS) (pp. 591-596). IEEE.

2019 Best paper award at the 18th IEEE International Conference on Cognitive Informatics & Cognitive Computing, 2018. The paper is: Yingxu Wang, et al (2019). On Autonomous Systems: From Reflexive, Imperative and Adaptive Intelligence to Autonomous and Cognitive Intelligence. In: International Conference on Cognitive Informatics & Cognitive Computing, p. 7-12.

2018 Student travel award at IEEE International Conference on Bioinformatics and Biomedicine (BIBM), December 3-6, 2018, Madrid, Spain. The paper is:
D'Amico NC, Sicilia R, Cordelli E, Valbusa G, Bossi Zanetti I, Fazzini D, Scotti G, Iannello G, Soda P. Radiomics and machine learning in the prediction of response to CyberKnife radiosurgery for acoustic neuroma: a pilot study (2018). In: International Conference on Bioinformatics and Biomedicine Conference (BIBM), 2018 IEEE Int. Conf. on.,

2017 Best student paper award at IEEE Life Sciences Conference (LSC), December 13-15, 2017, Sydney, Australia. The paper is:
Di Perna L, Spina G, Thackray-Nocera S, Crooks M G, Morice A H, Soda P, den Brinker A C (2017). An automated and unobtrusive system for cough detection. In: Life Sciences Conference (LSC), 2017 IEEE Int. Conf. on. p. 190-193

2005 InnovaLazio 2005. Das srl, the company with I have been collaborating since my PhD, won the award InnovaLazio for product innovation. This award has been assigned to Das thanks to the close cooperation established within the PhD period, during which I developed a computer-aided diagnosis system for Indirect Immunofluorescence images. That system was reviewed as an innovative idea making use of original technologies.

Technological transfer results, in terms of participation in the creation of new enterprises (spin off), development, patent use and marketing

2020 Admitted to the program "IoT solutions for the health of elderly and impaired patients" (Soluzioni IoT per la salute dei pazienti anziani e disabili), a program for innovative startup supported by GIOMI and LazioInnova. Topic: di-Pen, Intelligent Pen for diabetes treatment.

2017 Founding member of the innovative start-up named as BPCOMEDIA S.R.L., which has been registered since 08/05/2017 at the Chamber of Commerce, Industry, Handicraft and Agriculture of Bolzano, ordinary section, in the special section in quality of innovative start-up. We are also working so that Università Campus Bio-Medico di Roma would recognize it as spin-off. The company, as a start-up of research and development, is based on the technological transfer of research results, protected by the patent described below.

2015 Patent "System for the detection and early prediction of the approaching of exacerbation in patients suffering from chronic obstructive broncopneumaty". I substantially contributed to develop the decision support system, which is the kernel of the patent. Currently, I has also been involved in the certification process of the device as a medical device. Patent number PCT/IT2015/000146, authors: Antonelli Incalzi R, Barbara FM, Bussu AM, Capasso G, Iannello G, Merone M, Onofri L,

Pedone C, Soda P.

2007 Patent "Apparatus and Method for Video-Rhino-Hygrometer (VRI) measures", number WO2007119252 (Casale M, Cusimano V, Salvinelli F, Setola R, Soda P, 2007). I contributed to develop this patent with reference to video processing. VRH system uses a camera to record the breath cooling on a cold surface. Patent rights were shared with a company for the industrialization and distribution of the device. Field tests have been performed at Universidad de Navarra (Spain) and at Università Campus Bio-Medico, Roma.

Association membership

From 2006 Member of Italian Association for Computer Vision, Pattern recognition and machine Learning (CVPL-ex-GIRPR)

From 2010 Member of the IEEE and IEEE Computer society

From 2017 Member of Italian Society of Biomedical Informatics (SIBIM)

Invited papers

2020 The following paper, after the 2020 IEEE International Symposium on Computer-Based Medical Systems was invited to submit an extended version to Journal of Computers in Biology and Medicine, special issue on "Recent Trends in Cognitive Computing for Healthcare":
Sicilia R, Cordelli E, Soda P (2020). On using meta-features to learn under class skew in biomedical domains. In: Computer-Based Medical Systems (CBMS), 2020 33rd IEEE International Symposium on. p. 251-256

2020 The following paper, after the 2020 IEEE International Symposium on Computer-Based Medical Systems was invited to submit an extended version to Journal of Computers in Biology and Medicine, special issue on "Recent Trends in Cognitive Computing for Healthcare":
Sicilia R, Cordelli E, Tortora M, Soda P (2020). Time-Window SIQR Analysis of COVID-19 Outbreak and Containment Measures in Italy. In: Computer-Based Medical Systems (CBMS), 2020 33rd IEEE International Symposium on. p. 277-282

2016 The following paper, after the 2016 IEEE International Conference on Biomedical and Health Informatics, was invited to submit an extended version to Journal of Biomedical and Health Informatics, IEEE:
Merone M, Onofri L, Pedone C, Bussu AM, Rubiu BFM, Capasso G, Salaris S, Iannello G, Antonelli Incalzi R, Soda P (2016). On the remote detection of COPD-related worrisome events. In: Biomedical and Health Informatics (BHI) 2016 IEEE International Conference on. p. 33-36, Las Vegas

2014 The following paper was invited in the proceedings of Digital Technologies, 2014 10th IEEE International Conference on:
Soda P. BioImage Informatics: the challenge of knowledge extraction from biological images. In: Digital Technologies, 2014 10th IEEE International Conference on. p. 311-320, Zilina, Slovak Republic, 9-11 July 2014, doi: 10.1109/DT.2014.6868733.

2010 The following paper was invited in the volume "Communications In Computer and Information Science", Ed. Fred A, Filipe J, Gamboa H., Berlin:© Springer-Verlag

Berlin Heidelberg:
Soda P, Iannello G (2010). Advances in computer-based autoantibodies analysis. In: Fred A, Filipe J, Gamboa H. Biomedical Engineering Systems and Technologies, Communications in Computer and Information Science. vol. 52, p. 333-346, Berlin:© Springer-Verlag Berlin Heidelberg, ISBN: 9783-64211720-6, doi: 10.1007/9783-64211721-3_26

2008 The following paper, where I was the single author, was invited in the volume "Communications In Computer and Information Science", Ed. Fred A, Filipe J, Gamboa H., Berlin: © Springer-Verlag Berlin Heidelberg:
Soda P (2008). Facing Polychotomies through Classification by Decomposition: Applications in the BioMedical Domain. In: Fred A, Filipe J, Gamboa H. Biomedical Engineering Systems and Technologies,Communications In Computer and Information Science. vol. 25, p. 291304, Berlin: © Springer-Verlag Berlin Heidelberg, ISBN: 9783540922186, doi: 10.1007/9783540922193.

Coordination of multicentric studies

I coordinated the multicentric study aiming to validate the fluorescence intensity classification system for Indirect Immunofluorescence images. The study allowed also to evaluate the variability between centers. These activities were carried out in collaboration with two companies, Das srl and Dasit spa, which provided the technical material (microscope, consumables, software for acquisition and storage), and with four hospitals, namely: San Carlo Borromeo Hospital of Milan, Hospital Spedali Civili of Brescia, San Giovanni di Dio Hospital of Florence, University Polyclinic of the Campus Bio-Medico University of Rome.

Conference Program Committee membership

- IEEE International Conference on Bioinformatics and Biomedicine.
- IEEE International Symposium on Computer-Based Medical Systems.
- International Conference on Pattern Recognition.
- Special track on "Hospital 4.0", IEEE Symposium on Computer-Based Medical Systems.
- International workshop on Data Analytics solutions for Real-LIfe Applications (DARLI-AP).
- International Conference on Information and Digital Technologies (IDT).
- IEEE International Conference on Biomedical and Health Informatics (BHI).
- International Conference on Mass-Data Analysis of Images and Signals in Medicine, Biotechnology and Chemistry.
- Data Mining in Life Sciences.
- IEEE International Conference on Digital Technologies.
- IEEE International Conference on E-health, Networking, Application & Services.
- IEEE Healthcom.

Reviewer activities

International Journals

Reviewer of the following international journals:

- Acta Diabetologica, Springer;

- Applied Sciences, MDPI;
- Biosystems & Biorobotics, Springer;
- BioInformatics, Oxford Press;
- Cancers, MDPI;
- Clinical and Developmental Immunology, Hindawi;
- Computer Methods and Programs in Biomedicine, Elsevier;
- Computerized Medical Imaging and Graphics, Elsevier;
- Computing, Springer;
- EBioMedicine - The Lancet;
- European Journal of Radiology, Elsevier;
- Expert Systems with Applications, Elsevier;
- Health Informatics Journal, Sage Journals;
- IEEE Access;
- IEEE Journal of Biomedical and Health Informatics;
- IEEE Robotics and Automation Magazine;
- IEEE Transactions on Biomedical Engineering;
- IEEE Transactions on Information Forensics & Security;
- IEEE Transactions on Medical Imaging;
- Information Sciences, Elsevier;
- International Journal of Artificial Intelligence, Elsevier;
- International Journal of Pattern Recognition and Artificial Intelligence, WorldScientific;
- Journal of Immunological Methods, Elsevier;
- Journal of Biophotonics, John Wiley & Sons;
- Journal of Engineering Research, Sultan Qaboos University;
- Journal of Sensors, Hindawi;
- Knowledge-Based Systems, Elsevier;
- International Journal of Artificial Intelligence, Elsevier;
- Medical & Biological Engineering & Computing, Springer;
- Pattern Recognition, Elsevier;
- Pattern Recognition Letters, Elsevier;
- Transactions on Mass-Data Analysis of Images and Signals, IBaI Publishing.

International Conferences

Further to the conferences where I serve in the Program Committee, I also serve as reviewer for several international conferences in the field of pattern recognition, machine learning, image processing, and biomedical engineering, such as:

- IEEE International Symposium on Robot and Human Interactive Communication, 2017;
- International Conference on Pattern Recognition, 2012, 2014, 2016;
- International Conference on Mass-Data Analysis of Images and Signals in Medicine, Biotechnology and Chemistry (from 2007 i);
- IEEE Symposium on Computer-Based Medical Systems (from 2007);
- IEEE International Conference on Robotics and Automation (from 2009 to 2012);
- Annual International Conference of the IEEE Engineering in Medicine and Biology Society (from 2008);
- International Conference on Image Analysis and Processing.

Funding Agencies

- Vidi programme (Innovational Research Incentive Scheme), The Netherlands, 2012.
- Agence Nationale de la Recherche (ANR), France, 2019.

- Netherlands Organisation for Scientific Research (NWO), The Netherlands, 2019

List of all scientific publications

I report in the following the full list of my scientific publications, divided into international journals, international conferences, chapter in books or essays, editorials and patents, for a total of 123, which have collected 1510 citations. My h-index is 20 (Scopus, October 19, 2021). According to Google Scholar, I have collected 2015 citations and my h-index is 23 (Scholar, October 19, 2021).

International journals

[J47] Soda, P., D'Amico, N. C., Tessadori, J., Valbusa, G., Guarrasi, V., Bortolotto, C., ... & Papa, S. (2021). AIforCOVID: predicting the clinical outcomes in patients with COVID-19 applying AI to chest-X-rays. An Italian multicentre study. Medical image analysis, 102216.

[J46] Guarrasi, V., D'Amico, N.C., Sicilia, R., Cordelli, E., Soda, P. (2021) Pareto optimization of deep networks for COVID-19 diagnosis from chest X-rays. Pattern Recognition, 2022, 121, 108242

[J45] Tortora, M., Cordelli, E., Sicilia, R., ...Ramella, S., Soda, P. (2021) Deep Reinforcement Learning for Fractionated Radiotherapy in Non-Small Cell Lung Carcinoma. Artificial Intelligence in Medicine, 2021, 119, 102137

[J44] Sicilia R, Merone M, Valenti V, Soda P (2021). Rule-based Space Characterization for Rumour Detection in Health. ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, ISSN: 0952-1976

[J43] Santucci, D., Faiella, E., Cordelli, E., Calabrese, A., Landi, R., de Felice, C., ... & Soda, P. (2021). The Impact of Tumor Edema on T2-Weighted 3T-MRI Invasive Breast Cancer Histological Characterization: A Pilot Radiomics Study. Cancers, 13(18), 4635.

[J42] Santucci, D., Faiella, E., Cordelli, E., Sicilia, R., de Felice, C., Zobel, B. B., ... & Soda, P. (2021). 3T MRI-Radiomic Approach to Predict for Lymph Node Status in Breast Cancer Patients. Cancers, 13(9), 2228.

[J41] Cordelli E, Soda P, Iannello G (2021). Visual4DTracker: a tool to interact with 3D+t image stacks. BMC BIOINFORMATICS, vol. 22, p. 1-15, ISSN: 1471-2105, doi: https://doi.org/10.1186/s12859-020-03820-y

[J40] Infantino M, Merone M, Manfredi M, Grossi V, Landini A, Alessio MG, Previtali G, Trevisan MT, Porcelli B, Fabris M, Macchia D, Villalta D, Cinquanta L, D'Antoni F, Iannello G, Soda P, Bizzaro N (2021). Positive tissue transglutaminase antibodies with negative endomysial antibodies: Unresolved issues in diagnosing celiac disease. JOURNAL OF IMMUNOLOGICAL METHODS, vol. 489, ISSN: 0022-1759

[J39] D'Amico NC, Sicilia R, Cordelli E, Tronchin L, Greco C, Michele F, Carnevale A, Iannello G, Ramella S, **Soda P** (2020). Radiomics-Based Prediction of Overall Survival in Lung Cancer Using Different Volumes-Of-Interest. APPLIED SCIENCES, vol. 10, ISSN: 2076-3417, doi: 10.3390/app10186425

[J38] D'Antoni F, Merone M, Piemonte V, Iannello G, **Soda P** (2020). Auto-Regressive Time Delayed jump neural network for blood glucose levels forecasting. KNOWLEDGE-BASED SYSTEMS, vol. 203, ISSN: 0950-7051, doi: https://doi.org/10.1016/j.knosys.2020.106134

[J37] **Soda P**, Sicilia R, Acciai L, Iannello G (2020). Grasping inter-attribute and temporal variability in multivariate time series. IEEE TRANSACTIONS ON BIG DATA, ISSN: 2332-7790

[J36] Infantino M, Manfredi M, Grossi V, Merone M, **Soda P** (2020). The new era of LED microscopes in immunofluorescence anti-nuclear antibody (ANA) testing. CLINICAL CHEMISTRY AND LABORATORY MEDICINE, ISSN: 1437-4331, doi: https://doi.org/10.1515/cclm-2019-1103

[J35] Di Noto T, von Spiczak J, Mannil M, Gantert E, **Soda P**, Manka R, Alkadhi H (2019). Radiomics for Distinguishing Myocardial Infarction from Myocarditis at Late Gadolinium Enhancement at MRI: Comparison with Subjective Visual Analysis. RADIOLOGY. CARDIOTHORACIC IMAGING, vol. 1, ISSN: 2638-6135, doi: 10.1148/ryct.2019180026

[J34] Castiglioni I, Gallivanone F, **Soda P**, Avanzo M, Stancanello J, Aiello M, Interlenghi M, Salvatore M (2019). AI-based applications in hybrid imaging: how to build smart and truly multi-parametric decision models for radiomics. EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING, vol. 46, p. 2673-2699, ISSN: 1619-7070, doi: https://doi.org/10.1007/s00259-019-04414-4

[J33] D'Amico N, Merone M, Sicilia R, Cordelli E, D'Antoni F, Bossi Zanetti I, Valbusa G, Grossi E, Beltramo G, Fazzini D, Scotti G, Iannello G, **Soda P** (2019). Tackling imbalance radiomics in acoustic neuroma. INTERNATIONAL JOURNAL OF DATA MINING AND BIOINFORMATICS, vol. 22, p. 365-388, ISSN: 1748-5673

[J32] Merone M, Sansone C, **Soda P** (2019). A computer-aided diagnosis system for HEp-2 fluorescence intensity classification. ARTIFICIAL INTELLIGENCE IN MEDICINE, vol. 97, p. 71-78, ISSN: 0933-3657, doi: https://doi.org/10.1016/j.artmed.2018.11.002

[J31] Cordelli E, Maulucci G, De Spirito M, Rizzi A, Pitocco D, **Soda P** (2018). A decision support system for Type 1 Diabetes Mellitus diagnostics based on dual channel analysis of red blood cell membrane fluidity. COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol. 162, p. 263-271, ISSN: 0169-2607, doi: 10.1016/j.cmpb.2018.05.025

[J30] Ramella S, Fiore M, Greco C, Cordelli C, Sicilia R, Merone M, Molfese E, Miele M, Cornacchione P, Ippolito E, Iannello G, D'Angelillo RM, **Soda P** (2018). A radiomic approach for adaptive radiotherapy in non-small cell lung cancer patients. PLOS ONE, ISSN: 1932-6203, doi: https://doi.org/10.1371/journal. pone.0207455

[J29] Infantino M, Manfredi M, **Soda P**, Merone M, Afeltra A, Rigon A (2018). ANA testing in 'real life'. ANNALS OF THE RHEUMATIC DISEASES, ISSN: 0003-4967, doi: http://dx.doi.org/10.1136/annrheumdis-2018-214615

[J28] Infantino M, Manfredi M, Merone M, Grossi V, Benucci M, Li Gobbi F, Bandinelli F, Damiani A, **Soda P** (2018). Analytical variability in the determination of anti-double-stranded DNA antibodies: the strong need of a better definition of the old and new tests. IMMUNOLOGIC RESEARCH, vol. 66, p. 340-347, ISSN: 0257-277X, doi: https://doi.org/10.1007/s12026-018-8992-9

[J27] Sicilia R, Lo Giudice S, Pei Y, Pechenizkiy M, **Soda P** (2018). Twitter rumour detection in the health domain. EXPERT SYSTEMS WITH APPLICATIONS, vol. 110, p. 33-40, ISSN: 0957-4174, doi: https://doi.org/10.1016/j.eswa.2018.05.019

[J26] Maulucci G, Cordelli E, Rizzi A, De Leva F, Papi M, Ciasca G, Samengo D, Pani G, Pitocco D , **Soda P**, Ghirlanda G, Iannello G, De Spirito M (2017). Phase separation of the plasma

membrane in human red blood cells as a potential tool for diagnosis and progression monitoring of type 1 diabetes mellitus. PLOS ONE, p. 1-14, ISSN: 1932-6203.

[J25] Infantino M, Meacci F, Grossi, Manfredi M, Benucci M, Merone, **Soda P** (2017). The burden of the variability introduced by the HEp-2 assay kit and the CAD system in ANA indirect immunofluorescence test. IMMUNOLOGIC RESEARCH, vol. 65, p. 345-354, ISSN: 0257-277X

[J24] Rigon A, Infantino M, Merone M, Iannello G, Tincani A, Cavazzana I, Carabellese N, Radice A, **Soda P**, Afeltra A (2017). The inter-observer reading variability in anti-nuclear antibodies indirect (ANA) immunofluorescence test: A multicenter evaluation and a review of the literature. AUTOIMMUNITY REVIEWS, vol. 16, p. 1224-1229, ISSN: 1568-9972, doi: https://doi.org/10.1016/j.autrev.2017.10.006

[J23] Merone M, Pedone C, Capasso G, Antonelli Incalzi R, **Soda P** (2017). A Decision Support System for Tele-Monitoring COPD-Related Worrisome Events. IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, vol. 21, p. 296-302, ISSN: 2168-2194, doi: 10.1109/JBHI.2017.2654682.

[J22] Merone M, **Soda P**, Sansone M, Sansone C (2017). ECG databases for biometric systems: A systematic review. EXPERT SYSTEMS WITH APPLICATIONS, vol. 67, p. 189-202, ISSN: 0957-4174, doi: http://dx.doi.org/10.1016/j.eswa.2016.09.030

[J21] Onofri L, **Soda P**, Pechenizkiy M, Iannello G (2016). A survey on using domain and contextual knowledge for human activity recognition in video streams. EXPERT SYSTEMS WITH APPLICATIONS, vol. 63, p. 97-111, ISSN: 0957-4174, doi: http://dx.doi.org/10.1016/j.eswa.2016.06.011

[J20] Acciai L, **Soda P**, Iannello G (2016). Automated Neuron Tracing Methods: An Updated Account. NEUROINFORMATICS, vol. 14, p. 353-367, ISSN: 1539-2791, doi: 10.1007/s12021-016-9310-0

[J19] Silvestri L, Paciscopi M, **Soda P**, Biamonte F, Iannello G, Frasconi P, Pavone FS (2015). Quantitative neuroanatomy of all Purkinje cells with light sheet microscopy and high-throughput image analysis. FRONTIERS IN NEUROANATOMY, vol. 9, p. 1-11, ISSN: 1662-5129, doi: 10.3389/fnana.2015.00068

[J1] Frasconi P, Silvestri L, **Soda P**, Cortini R, Pavone F S, Iannello (2014). Large-Scale Automated Identification of Mouse Brain Cells in Confocal Light Sheet Microscopy Images. BIOINFORMATICS, vol. 30, p. 587-593, ISSN: 1367-4803.

[J2] Iannello G, Percannella G, **Soda P**, Vento M. Mitotic cells recognition in HEp-2 images. PATTERN RECOGNITION LETTERS, vol. 45, p.. 136-144, 2014. ISSN: 0167-8655.

[J3] Buzzulini F, Rigon A, **Soda P**, Onofri L, Infantino M, Arcarese L, Iannello G, Afeltra A. The classification of Crithidia Luciliae immunofluorescence test (CLIFT) using a novel automated system. ARTHRITIS RESEARCH & THERAPY, vol. 16, p. 1-6, 2014. ISSN: 1478-6354, doi: 10.1186/aR5510.

[J4] Onofri L, **Soda P**, Iannello G. Multiple subsequence combination in human action recognition. IET COMPUTER VISION, vol. 8, p. 26-34, 2014. ISSN: 1751-9632, doi: 10.1049/iet-cvi.2013.0015.

[J5] Foggia P, Percannella G, **Soda P**, Vento M. Benchmarking HEp-2 Cells Classification Methods. IEEE TRANSACTIONS ON MEDICAL IMAGING, vol. 32, p. 1878-1889, 2013. ISSN: 0278-0062, doi: 10.1109/TMI.2013.2268163.

[J6] Onofri L, **Soda P**, Iannello G. Centromere and cytoplasmic staining pattern recognition: a local approach. MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING, vol. 51, p. 1305-1314, 2013. ISSN: 0140-0118, doi: 10.1007/s11517-013-1102-1.

[J7] Mazzoleni S, Munih M, Toth A, Cinkelj J, Jurak M, Van Vaerenbergh J, Cavallo G, **Soda P**, Dario P, Guglielmelli E. Whole-body isometric force\torque measurements for functional assessment in neuro-rehabilitation: graphical user interface and data pre-processing techniques. COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol. 110, p. 27-37, 2013. ISSN: 0169-2607, doi: http://dx.doi.org/10.1016/j.cmpb.2012.10.017.

[J8] **Soda P**, Antani S, Tortorella F, Cannataro M, Pechenizkiy M, Tsymbal A. Trends in computer-based medical systems. SIGHIT RECORD, vol. 2, p. 46-50, 2012. ISSN: 2158-8813, doi: 10.1145/2384556.2384563.

[J9] **Soda P**, Onofri L, Iannello G. A decision support system for Crithidia Luciliae image classification. ARTIFICIAL INTELLIGENCE IN MEDICINE, vol. 51, p. 67-74, 2011. ISSN: 0933-3657, doi: 10.1016/j.artmed.2010.05.005.

[J10] **Soda P**. A multi-objective optimisation approach for class-imbalance learning. PATTERN RECOGNITION, vol. 44, p. 1801-1810, 2011. ISSN: 0031-3203, doi: 10.1016/j.patcog.2011.01.015.

[J11] Rigon A, Buzzulini F, **Soda P**, Onofri L, Arcarese L, Iannello G, Afeltra A. Novel opportunities in automated classification of antinuclear antibodies on HEp-2 cells. AUTOIMMUNITY REVIEWS, vol. 10, p. 647-652, 2011. ISSN: 1568-9972, doi: http://dx.doi.org/10.1016/j.autrev.2011.04.022.

[J12] **Soda P**, Mazzoleni S, Cavallo G, Guglielmelli G, Iannello G. Human movement onset detection from isometric force/torque measurements: A supervised pattern recognition approach. ARTIFICIAL INTELLIGENCE IN MEDICINE, vol. 50, p. 55-61, 2010. ISSN: 0933-3657, doi: 10.1016/j.artmed.2010.04.008.

[J13] Casale M, Pappacena M, Setola R, **Soda P**, Cusimano V, Vitali M, Mladina R, Salvinelli F. Video-rhino-hygrometer: A new method for evaluation of nasal breathing after nasal surgery. AMERICAN JOURNAL OF RHINOLOGY & ALLERGY, vol. 24, p. 467-471, 2010. ISSN: 1945-8924, doi: 10.2500/ajra.2010.24.3505.

[J14] **Soda P**, Iannello G, Vento M. A multiple experts system for classifying fluorescent intensity in antinuclear autoantibodies analysis. PATTERN ANALYSIS & APPLICATIONS, vol. 12, p. 215-226, 2009. ISSN: 1433-755X, doi: 10.1007/s10044-008-0116-z.

[J15] **Soda P**, Iannello G. Aggregation of Classifiers for Staining Pattern Recognition in Antinuclear Autoantibodies Analysis. IEEE TRANSACTIONS ON INFORMATION TECHNOLOGY IN BIOMEDICINE, vol. 13, p. 322-329, 2009. ISSN: 1089-7771, doi: 10.1109/TITB.2008.2010855.

[J16] Iannello G, Percannella G, Sansone C, **Soda P**. On the use of classification reliability for improving performance of the one-per-class decomposition method. DATA & KNOWLEDGE

ENGINEERING, vol. 68, p. 1398-1410, 2009. ISSN: 0169-023X, doi: 10.1016/j.datak.2009.07.003.

[J17] Rigon A, **Soda P**, Zennaro D, Iannello G, Afeltra A. Indirect Immunofluorescence in Autoimmune Diseases: Assessment of Digital Images for Diagnostic Purpose. CYTOMETRY. PART B, CLINICAL CYTOMETRY, vol. 72B, p. 472-477, 2007. ISSN: 1552-4949, doi: 10.1002/cyto.b.20356.

[J18] **Soda P**, Iannello G. ANN-Based Classification of Indirect Immunofluorescence Images. INTERNATIONAL JOURNAL OF APPLIED SCIENCE, ENGINEERING AND TECHNOLOGY, vol. 2, p. 102-107, 2006. ISSN: 2070-383X.

International conferences

[C57] Francini, L., **Soda, P.**, & Sicilia, R. (2021, June). Describing rumours: a comparative evaluation of two handcrafted representations for rumour detection. In 2021 International Conference on Information and Digital Technologies (IDT) (pp. 311-318). IEEE.

[C56] Liu CZ, Tortora M, Sicilia R, Cordelli E, Nibid L, Sabarese G, Perrone G, Fiore M, Ramella S , **Soda P**. Exploring Deep Pathomics in Lung Cancer . In: Computer-Based Medical Systems (CBMS), 2021 34th IEEE International Symposium on.

[C55] Guarrasi V, D'Amico NC, Sicilia R, Cordelli E, **Soda P**. A Multi-Expert System to Detect COVID-19 Cases in X-ray Images. In: Computer-Based Medical Systems (CBMS), 2021 34th IEEE International Symposium on.

[C54] Sicilia R, Francini L, **Soda P**. Representation and Knowledge Transfer for Health-related Rumour Detection. In: Computer-Based Medical Systems (CBMS), 2021 34th IEEE International Symposium on.

[C53] Sicilia R, Cordelli E, **Soda P**. Categorizing the Feature Space for Two-Class Imbalance Learning. In: 25th International Conference on Pattern Recognition, 2021.

[C52] D'Antoni F, Merone M, Piemonte V, Pozzilli P, Iannello G, **Soda P** (2020). Early Experience in Forecasting Blood Glucose Levels Using a Delayed and Auto-Regressive Jump Neural Network. In: Cognitive Informatics & Cognitive Computing (ICCI*CC), 2019 IEEE 18th International Conference on. doi: 10.1109/ICCICC46617.2019.9146049

[C51] Wang Y, Plataniotis KN, Kwong S, Leung H, Yanushkevich S, Karray F, Hou M, Howard N, Fiorini RA, **Soda P**, Tunstel E, Wang J, Patel S (2020). On Autonomous Systems: From Reflexive, Imperative and Adaptive Intelligence to Autonomous and Cognitive Intelligence. In: Cognitive Informatics & Cognitive Computing (ICCI*CC), 2019 IEEE 18th International Conference on. doi: 10.1109/ICCICC46617.2019.9146038

[C50] Sicilia R, Cordelli E, **Soda P** (2020). On using meta-features to learn under class skew in biomedical domains. In: Computer-Based Medical Systems (CBMS), 2020 33rd IEEE International Symposium on. p. 251-256, doi: 10.1109/CBMS49503.2020.00054

[C49] Cordelli E, Sicilia R, Santucci D, De Felice C, Quattrocchi CC, Beomonte Zobel B, Iannello G , **Soda P** (2020). Radiomics-based non-invasive lymph node metastases prediction in breast cancer. In: Computer-Based Medical Systems (CBMS), 2020 33rd IEEE International Symposium on. p. 486-491, doi: 10.1109/CBMS49503.2020.00098

[C48] Sicilia R, Cordelli E, Tortora M, **Soda P** (2020). Time-Window SIQR Analysis of COVID-19 Outbreak and Containment Measures in Italy. In: Computer-Based Medical Systems (CBMS), 2020 33rd IEEE International Symposium on. p. 277-282, doi: 10.1109/CBMS49503.2020.00059

[C47] Sicilia R, Cordelli E, Merone M, Luperto E, Papalia R, Iannello G, **Soda P** (2019). Early Radiomic Experiences in Classifying Prostate Cancer Aggressiveness using 3D Local Binary Patterns. In: Computer-Based Medical Systems (CBMS), 2019 32nd IEEE International Symposium on. doi: 10.1109/CBMS.2019.00078

[C46] Cordelli E, Merone M, Di Giacinto F, Daniel B, Maulucci G, Sasson S, **Soda P** (2019). Early experiences in 4D quantitative analysis of insulin granules in living beta-cells. In: Bioinformatics and Biomedicine (BIBM), 2018 IEEE International Conf. on. doi: 10.1109/BIBM.2018.8621293

[C45] Sicilia R, Merone M, Valenti R, Cordelli E, D'Antoni F, De Ruvo V, Dragone PB, Esposito S , **Soda P** (2019). Cross-topic Rumour Detection in the Health Domain. In: Bioinformatics and Biomedicine (BIBM), 2018 IEEE International Conf. on. doi: 10.1109/BIBM.2018.8621580

[C44] Merone M, Finamore P, Pedone C, Antonelli Incalzi R, Iannello G, **Soda P** (2019). Discovering COPD phenotyping via simultaneous feature selection and clustering. In: Bioinformatics and Biomedicine (BIBM), 2018 IEEE International Conference on.

[C43] D'Amico NC, Sicilia R, Cordelli E, Valbusa G, Bossi Zanetti I, Fazzini D, Scotti G, Iannello G , **Soda P**. Radiomics and machine learning in the prediction of response to CyberKnife radiosurgery for acoustic neuroma: a pilot study (2018). In: International Conference on Bioinformatics and Biomedicine Conference (BIBM), 2018 IEEE Int. Conf. on., in press

[C42] Sicilia R, Cordelli E, Ramella S, Fiore M, Greco C, Molfese E, Miele M, Vinciguerra E, Cornacchione P, Ippolito E, D'Angelillo RM, Iannello G, **Soda P** (2018). Exploratory Radiomics for Predicting Adaptive Radiotherapy in Non-Small Cell Lung Cancer. In: Computer-Based Medical Systems (CBMS), 2018 31st IEEE International Symposium on. p. 250-255, doi: 10.1109/CBMS.2018.00051

[C41] Affemi P, Merone M, **Soda P** (2018). Hospital 4.0 and Its Innovation in Methodologies and Technologies. In: Computer-Based Medical Systems (CBMS), 2018 31st IEEE International Symposium on. p. 333-338, doi: 10.1109/CBMS.2018.00065

[C40] Di Perna L, Spina G, Thackray-Nocera S, Crooks M G, Morice A H, **Soda P**, den Brinker A C (2017). An automated and unobtrusive system for cough detection. In: Life Sciences Conference (LSC), 2017 IEEE International Conference on. p. 190-193.

[C39] Zhang C, Bi J, **Soda P** (2017). Feature Selection and Resampling in Class Imbalance Learning: Which Comes First? An Empirical Study in the Biological Domain. In: Bioinformatics and Biomedicine (BIBM), 2017 IEEE International Conference on.

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

Rome, October 19, 2021

List of all scientific publications in the last 10 years (2021-2011)

I report in the following the list of my scientific publications in the last 10 years, i.e. from 2011 to 2021, divided into international journals, international conferences, chapter in books or essays, editorials. Furthermore, my whole publication list accounts for 123 papers, which have collected 1510 citations. My h-index is 20 (Scopus, October 19, 2021). According to Google Scholar, I have collected 2015 citations and my h-index is 23 (Scholar, October 19, 2021).

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

Rome, October 19, 2021

Paolo Soda's list of journal publications in the last 15 years in class A
In the following I list the publications in international journals ranked in the first quartile by Scimago at October 19, 2021

[J47] Soda, P., D'Amico, N. C., Tessadori, J., Valbusa, G., Guarrasi, V., Bortolotto, C., ... & Papa, S. (2021). AIforCOVID: predicting the clinical outcomes in patients with COVID-19 applying AI to chest-X-rays. An Italian multicentre study. Medical image analysis, 102216.

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[J34] Castiglioni I, Gallivanone F, **Soda P**, Avanzo M, Stancanello J, Aiello M, Interlenghi M, Salvatore M (2019). AI-based applications in hybrid imaging: how to build smart and truly multi-parametric decision models for radiomics. EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING, vol. 46, p. 2673-2699, ISSN: 1619-7070, doi: https://doi.org/10.1007/s00259-019-04414-4

[J32] Merone M, Sansone C, **Soda P** (2019). A computer-aided diagnosis system for HEp-2 fluorescence intensity classification. ARTIFICIAL INTELLIGENCE IN MEDICINE, vol. 97, p. 71-78, ISSN: 0933-3657, doi: https://doi.org/10.1016/j.artmed.2018.11.002

[J31] Cordelli E, Maulucci G, De Spirito M, Rizzi A, Pitocco D, **Soda P** (2018). A decision support system for Type 1 Diabetes Mellitus diagnostics based on dual channel analysis of red blood cell membrane fluidity. COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol. 162, p. 263-271, ISSN: 0169-2607, doi: 10.1016/j.cmpb.2018.05.025

[J30] Ramella S, Fiore M, Greco C, Cordelli C, Sicilia R, Merone M, Molfese E, Miele M, Cornacchione P, Ippolito E, Iannello G, D'Angelillo RM, **Soda P** (2018). A radiomic approach for adaptive radiotherapy in non-small cell lung cancer patients. PLOS ONE, ISSN: 1932-6203, doi: https://doi.org/10.1371/journal. pone.0207455

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Rome, October 19, 2021