

PERSONAL DATA

Masseroli Marco, Ph.D.

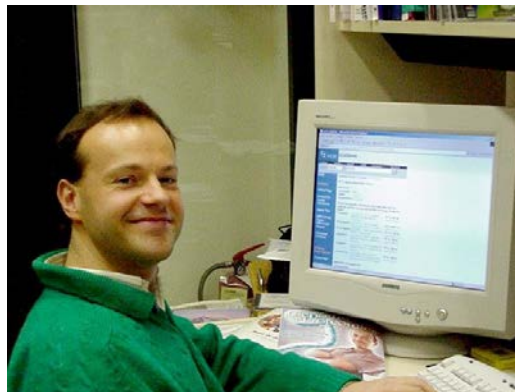
CURRENT POSITION

Associate Professor

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[Here](#) the full **Italian CV**

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RESEARCH INTERESTS [\(Top\)](#)

Bioinformatics, Medical Informatics, Integrated Management and Analysis of Genomic Information with Patient Clinical and High-throughput Genomic Data, Information Systems and Databases in Bioinformatics, Biomedical Terminologies and Ontologies, Distributed Web Applications for Medicine and Biology, Biomedical Data Analysis and Knowledge Discovery, Image Processing.

Bioinformatics: a great Computer Engineering opportunity (with ethical relevance)

The extraordinary recent progresses in biotechnology and system biology make possible to quickly produce (few hours) at low cost (less than 1,000 \$) the DNA sequence and the genetic and epigenetic activity profile of each individual in different conditions. This generates an amazing quantity of experimental data (about 0.3 TB for each individual and tested condition), which is shortly going to represent the biggest and most important “big data problem” of mankind. Furthermore, the complexity of such data is not only in their sheer size, but also in the heterogeneity of underlying samples, conditions, biomolecular entities, etc., which is larger than in any other domain as it reflects the intrinsic biological complexity.

All these aspects and the largely public availability of these data make this domain a great challenge as well as a big opportunity for the Computer Engineering community, which can greatly contribute to unveil the nature laws through the reverse engineering of biological processes.

All main Computer Science centers in the world are investing many resources and personnel in Bioinformatics, with a medium/long term strategy to increase both their knowledge and critical mass in the domain, whose complexity requires both of them in order to aspire reaching relevant results of impact. They are paving the way to this aim by acquiring increasing domain expertise through on-the-field interdisciplinary activities, developed in collaboration also with top life science research centers, toward the ultimate goal of improving understanding, diagnosis and treatment of complex disorders (such as cancer, diabetes or several neurological pathologies) for the improvement of patients' conditions and well-being. This can be done also at Politecnico di Milano.

Information extraction from the available big data and their interpretation towards knowledge discovery is a key aspect in bioinformatics. Several terminologies and ontologies are available to describe current biomedical knowledge and are broadly used to express biomedical facts (i.e., controlled annotations of biomedical entities). Increasingly numerous and heterogeneous biomedical controlled annotations are sparsely available in a variety of data sources; their

integration and comprehensive analysis is a fundamental aspects of bioinformatics, which helps biologists' evaluation and interpretation of experimental results fostering biomedical discoveries.

MAIN RELEVANT ASPECTS OF THE CURRICULUM VITAE (Top)

- **Scientific National Qualifications** to first level University Professor (Full Professor) in the sector 09/H1 – “*Information Elaboration Systems*” (ex scientific sector ING-INF/05) obtained **at unanimity** of the evaluation commission
- **3 Scientific National Qualifications** to second level University Professor (Associate Professor) in the sectors 09/H1 – “*Information Elaboration Systems*”, 01/B1 – “*Informatics*” and 09/G2 – “*Bioengineering*” (ex scientific sectors ING-INF/05, INF/01 and ING-INF/06); in particular, the qualification in the sector 09/G2 has been obtained **at unanimity** of the evaluation commission
- **3 Distinct research areas**: Image processing, Medical Informatics and Bioinformatics, always as applications of Computer Engineering principles, technologies and methods)
- **288 Publications**: from 1993 to 2018 (25 years) have been produced **4 curatorships** and **2 editorial** of international journal supplements and **282 publications** (127 in the last 10 years (2008-2018), 73 in the last 5 years (2013-2018)), among which:
 - **68 in International scientific journals** (31 in the last 10 years, 21 in the last 5 years); **Class of relevance** of the scientific journals for the sector “*Information Elaboration Systems*”: **21 in Class 1** (best), of which **2** on *IEEE Transactions on Information Technology in Biomedicine* (of which **1** with **single author**), **6** on *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, and **1** on *IEEE Transactions on Knowledge and Data Engineering*, **8 in Class 2**, **1 in Class 3**; **first author** in **30** and **last author** in **10** of such 68 publications (where author order matter)
 - **3 in international** (1) or **national books** (2)
 - **31 as chapters of international books** (22 in the last 10 years, 12 in the last 5 years) and **4 as chapters of national books** (1 in the last 10 years)
 - **90 in proceedings of international congresses** (33 in the last 10 years, 16 in the last 5 years) of which **20** in *IEEE* congresses, and **8 in proceedings of national congresses** (4 in the last 10 years); **1 Best Paper award** from the *International Neural Networks Society*
 - **76 abstracts** (40 in the last 10 years, 24 in the last 5 years)
 - **2 research reports**

The commission for the Scientific National Qualification to the role of University professor of first level in the Sector 09/H1 – “Information Elaboration Systems” evaluated “**excellent**” the scientific production within the national and international research scenario, based on originality, methodological rigor and innovation, and “**very good**” the relevance of the publications within the scientific disciplinary sector

The commission for the Scientific National Qualification to the role of University professor of second level in the Sector 09/H1 – “Information Elaboration Systems” evaluated “**very good**” the quality and editorial collocation of these scientific publications within the international research scenario

In the **Evaluation of the Quality of the National Research (VQR) 2004-2010** I got the **average evaluation 0.92** (Politecnico di Milano - Area 09: average DEI: 0.80; average ING-INF/05: 0.71; average_ING-INF/06: 0.89), evaluated on **5 journal publications** (over 5 maximum publications required), of which **3** were evaluated excellent

Given my interdisciplinary scientific activity, my bibliometric data are on more resources: **DBLP: 86 papers** (2000-2017) (<http://www.informatik.uni-trier.de/~ley/db/indices/a-tree/m/Masseroli:Marco.html>); **PubMed: 79 papers** (1993-2018) regarding bioinformatics applications (<http://www.ncbi.nlm.nih.gov/pubmed?term=masseroli%20m>); **Google Scholar H-index 21** (last 10 years, 139 papers with 588 citations and H-index 13; last 5 years, 73 papers with 319 citations and H-index 11)

- **Participation/Co-ordination of national and International projects**: in **6 European** (in **1** as co-responsible of research unit and in **1** as responsible and coordinator of the group for bio

applications) and in **8 national** projects (of which **3** as responsible or co-responsible of research unit);

- **Evaluator for the European Commission**: in FP7-HEALTH-2012-INNOVATION-1 and Horizon2020 H2020-PHC-2014, SC1-PM-02-2017 and H2020-MSCA-IF-2017, and ERC-2017-COG
- **Participation in editorial or conference committees**: Associate Editor of *IEEE Transactions on Information Technologies in Biomedicine*, of **3** supplements of the journal *BMC Bioinformatics*; and of **1** of *EMBnet.journal*. Chair of conferences *NETTAB2012*, *BITS2015* and *BioLom 2013*; Chair of Sections in the *ACM BCB*, *CIBB*, *DILS* and *BIBE* conferences; Member of the scientific committee of many conferences: *CIBCB*, *EvoBIO*, *DILS*, *IB*, *IWBBIO*, *IDAMAP*, *NETTAB*, *EMBC*, *MEDICON*, *BITS*
- **Experience at national or international scientific institutes**: Research activity at: *Politecnico di Milano*; *Universidad de Granada – Spain*; *Biomedical Engineering Department, The Cleveland Clinic Foundation, Cleveland, OH – US*; *European Institute of Oncology, Milano*; *Pharmacological Research Institute “Mario Negri”, Milano*; *San Raffaele Hospital, Milano*. Visiting scholar at *School of Computing and Mathematics, University of Ulster, UK*, and *Molecular Graphics Suite, School of Chemistry, Bath University, UK*; Visiting faculty at *National Library of Medicine, National Institute of Health, US*; Visiting Professor at *Departamento de Anatomía Patológica, Facultad de Medicina, Universidad de Granada – Spain*
- **Participation at the teaching and academic life of the institute**: From 2002 coordinator of **12** courses, of which: **5** of the *Research Doctorate (Ph.D.) in Information Engineering*, **3** of *University Master*, **3** of *Superior Technical Education*. From the academic year 2000-2001 official lecturer of **13** university courses of *Politecnico di Milano*, of which: **4** of the *Research Doctorate in Information Engineering or Bioengineering*, **3** of *Master of I or II level*, **3** of *Laurea Magistrale* or *Laurea Specialistica* (Master degree) in *Information Engineering* and/or in *Bioengineering*, **1** of *Laurea*. From 2001 Supervisor or Co-supervisor of **41** Laurea Theses and from 2010 Supervisor of **5** PhD students of the *Research Doctorate in Information Engineering* of *Politecnico di Milano*
- **Systems development**: Development of several *systems for data integration and analysis* and related *Web applications*, which I maintained publicly accessible and were actively **used** by the scientific community; among them:
 - *GMQL* (since January 2017, more than **13.000** accesses from about 350 different IPs)
 - *MuSERA* (since March 2016, nearly 1.700 accesses from about 100 different IPs)
 - *GPKB* (since October 2012, more than **43.100** accesses from nearly 1,150 different IPs)
 - *Bio-SeCo* (since August 2012, nearly 9,800 accesses from about 330 different IPs)
 - *GFINDER* (since July 2004, more than **290,000** accesses from nearly 13,100 different IPs)
 - *MyWEST* (since August 2003, about **94,150** accesses from about 15,450 different IPs, with more than 400 copies downloaded)
 - *GAAS* (since April 2003, more than **88,550** accesses from about 14,400 different IPs, with more than 690 copies downloaded)
- **Autonomy grade**: Full: I opened and lead the research line in *Bioinformatics* at *Politecnico di Milano*; I lead almost all the publications, or the informatics computational part of the most applicative ones (the far majority of my coauthors are students, PhDs, post-docs or investigators of other scientific sector); **1** publication on *IEEE TITB* is as single author
I practically always performer research activity in first person, mostly without being within a consolidated group performing such activity, or following a school founder in such activity
- **1 Patent**: regarding a package of informatics applications (1997)

HONORARY APPOINTMENTS [\(Top\)](#)

- Visiting scholar, School of Computing and Mathematics, University of Ulster at Jordanstown, Belfast, Great Britain in 2006,

- Visiting faculty, National Library of Medicine, National Institute of Health, US, for 6 months during 2004 and 2005.
- Visiting Professor, Pathology Department, School of Medicine, University of Granada, Granada – Spain, in 1992.

APPOINTMENTS [\(Top\)](#)

2015-today	<u>Associate Professor</u> (S.S.D. ING-INF/05) at Electronic, Information and Bioengineering Department, Politecnico di Milano, Milano - Italy
2011-today	<u>Lecturer</u> of University course “ <i>ICT for Health Care</i> ”, Master degree in Computer Science Engineering and Master degree in BioMedical Engineering, Politecnico di Milano, Milano - Italy
2010-today	<u>Lecturer</u> of University course “ <i>Informatics</i> ”, Laurea degree in Energy Engineering and Laurea degree in Mechanic and Transport Engineering, Politecnico di Milano, Milano - Italy
2008-today	<u>Lecturer</u> of University course “ <i>Bioinformatics and Computational Biology</i> ”, Master degree in Computer Science Engineering and Master degree in BioMedical Engineering, Politecnico di Milano, Milano - Italy
2006-2015	<u>Researcher</u> (S.S.D. ING-INF/05) at Electronic, Information and Bioengineering Department, Politecnico di Milano, Milano - Italy
2000-2010	<u>Lecturer</u> of University course “ <i>BioMedical Informatics</i> ”, Master degree in BioMedical Engineering, Politecnico di Milano, Milano - Italy
1999-2006	<u>Research Assistant</u> , Bioengineering Department, Politecnico di Milano, Milano - Italy
1999-2001	<u>Researcher</u> , Experimental Oncology Department, European Institute of Oncology, Milano - Italy
1996-1998	<u>Post-Doctoral Fellow</u> , Pathology Department, School of Medicine, University of Granada, Granada - Spain
1994-1995	<u>Research Fellow</u> , Biomedical Engineering Department, The Cleveland Clinic Foundation, Cleveland - OH, USA
1993-1996	<u>PhD Student</u> , Pathology Department, School of Medicine, University of Granada, Granada - Spain
1991-1993	<u>Researcher</u> , Pharmacological Research Institute " Mario Negri", Milano - Italy
1990-1991	<u>Research Fellow</u> , Molecular Graphics Suite, School of Chemistry, University of Bath, Bath - UK
1990	<u>Research Fellow</u> , Nuclear Medicine Department, San Raffaele Hospital, Milano - Italy

ACADEMIC DEGREES [\(Top\)](#)

2017	<p><u>National Scientific Qualification to first level University Professor (Full Professor) in the area:</u></p> <ul style="list-style-type: none"> - “<i>Computer Science Engineering</i>” (09/H1, ex. ING-INF/05), with "excellent" evaluation of the scientific production within the national and international research scenario, based on originality, methodological rigor and innovation, and with "very good" relevance of the publications within the scientific disciplinary sector
2013	<p><u>National Scientific Qualification to second level University Professor (Associate Professor) in the areas:</u></p> <ul style="list-style-type: none"> - “<i>Computer Science Engineering</i>” (09/H1, ex. ING-INF/05), with “very good” evaluation of quality and editorial location of the scientific publications within the research international scenario - “<i>Computer Science</i>” (01/B1, ex. ING-INF/06), with “fully adequate” evaluation of quality and editorial location of the scientific publications within the research international scenario - “<i>BioMedical Engineering</i>” (09/G2, ex. ING-INF/06), with “very good” evaluation at unanimity of quality and editorial location of the scientific publications within the research international scenario
2005	Specialization in "Power Scripting" (for using the genomics information provided by the National Center for Biotechnology Information databanks) at National Center for Biotechnology Information - National Library of Medicine, National Institute of Health Bethesda, MD - USA.
1998	Specialization in Digital Processing Techniques for Multimedia Images at Computational Science and Artificial Intelligence Department of Granada University, Granada - Spain (with mark 27/30).
1997	Specialization in Web Site Creation and Management at the Computer Science School of Granada University, Granada - Spain (with mark 30/30).
1996	PhD in Electronic Engineering at Granada University, Granada - Spain, (with maximum mark "cum laude").
1995	Post-graduate Specialization in Biomedical Engineering Research at Biomedical Engineering Department of the Research Institute of "The Cleveland Clinic Educational Foundation", Cleveland, OH - USA.
1991	Post-graduate Specialization in Business Management at the "XIII Corso Integrato Interdisciplinare Natale Toffoloni" organized by the "Fondazione Istituto Dirigenti Italiani" in Milan, Italy.
1990	Master degree in Electronic Engineering, speciality Bioengineering, at Politecnico di Milano, Milano – Italy (with mark 96/100). Thesis: "Bioimage processing: development of methods and programs on personal computer".
1984	Diploma in humanistic Secondary School (with mark 54/60).

ACADEMIC TEACHING [\(Top\)](#)

2015, 2017	Coordinator and Lecturer of the course “ <i>Genomic Computing</i> ” within the PhD degree in Computer Science Engineering, Politecnico di Milano, Milano – Italy
2013	Coordinator of the course “ <i>Big Data Analysis Methods for Knowledge Discovery. Application on Challenging Life Science Data</i> ” within the PhD degree in Computer Science Engineering, Politecnico di Milano, Milano – Italy
2012	Lecturer of the course “ <i>Algorithms and methods for Bioinformatics</i> ” organized by the University of Cagliari, in collaboration with Regione Sardegna, consortium Sardegna Ricerche and Research Center CRS4.

2011-today	Lecturer of the course “ <i>ICT for Health Care and Life Sciences</i> ”, 5 CFU (S.S.D. ING-INF/05), Master degree in Computer Science Engineering and Master degree in Biomedical Engineering, Politecnico di Milano, Milano – Italy
2011	Coordinator of the course “ <i>Current Challenges in Bioinformatics</i> ” within the PhD degree in Computer Science Engineering, Politecnico di Milano, Milano – Italy
2010-today	Lecturer of the course “ <i>Informatics B</i> ”, 7 CFU (S.S.D. ING-INF/05), Degree in Energy Engineering, and Mechanic and Transport Engineering, Politecnico di Milano, Milano – Italy
2010, 2012, 2014, 2016, 2018	Lecturer of the course “ <i>Integration and Computational Analysis of Genomic and Proteomic Information</i> ”, PhD degree in Computer Science Engineering, Politecnico di Milano, Milano – Italy
2009	Coordinator of the course “ <i>Array Comparative Genomic Hybridization (aCGH) and its bioinformatic and statistical analysis</i> ” within the PhD degree in Computer Science Engineering, Politecnico di Milano, Milano – Italy
2008-today	Lecturer of the course “ <i>Bioinformatics and Computational Biology for Molecular Medicine</i> ”, 5 CFU (S.S.D. ING-INF/05), Master degree in Computer Science Engineering and Master degree in Biomedical Engineering, Politecnico di Milano, Milano – Italy
2004-2009	Lecturer of the course “ <i>Management of clinical data and international standards</i> ” of the ESF one year Master in “ <i>Informatics processing of biomedical data and telecontrol in Medicine</i> ”, University of Verona, Verona - Italy
2003-2010	Lecturer of the course “ <i>Laboratory of BioMedical Informatics and Distributed Systems</i> ”, Master degree in Biomedical Engineering, Politecnico di Milano, Milano - Italy
2003-2008	Lecturer of the course “ <i>Laboratory of Internet application building for medicine in healthcare</i> ” of the ESF one year course for the training of “ <i>Expert Technicians in Medical Informatics</i> ”, Politecnico di Milano, Milano - Italy
2002-2004	Coordinator of the module “ <i>Infrastructures for Telemedicine</i> ” within the ESF Telemedicine Master course of “ <i>Internet for Health Care and Medicine</i> ”, Cefriel - Politecnico di Milano, Milano - Italy
2002	Lecturer within the PhD course “ <i>Advanced Health Information Systems</i> ”, PhD in Biomedical Engineering, Politecnico di Milano, Milano - Italy
2002-2004	Lecturer of tutorials on Genomics data banks, Web access to remote databases, Software agents, Biomedical vocabularies and language systems, Bioimage archives, Medical image and Clinical data integration, within the ESF Telemedicine Master course “ <i>Internet for Health Care and Medicine</i> ”, Cefriel - Politecnico di Milano, Milano - Italy
2000-2003	Lecturer of the course “ <i>Medical Informatics III (laboratory)</i> ”, 5 CFU (S.S.D. ING-INF/05), Master degree in Biomedical Engineering, Politecnico di Milano, Milano - Italy
2000-2002	Lecturer and coordinator of the one week course “ <i>Seminars on Practical Clinical Informatics and on Basic Medical Statistics</i> ”, International Academy of Bergamo for Advanced Medical Sciences and International Heart School, Bergamo - Italy
2000-2002	Lecturer of the practical lessons within the course “ <i>Medical Informatics</i> ”, Bachelor degree in Biomedical Engineering, Politecnico di Milano, Milano - Italy

2000	Lecturer within the module “ <i>Medical Informatics</i> ” of the ESF "Course for the training of Expert Technicians in Planning, Control, and Management of Sanitary Environments and Products", Politecnico di Milano, Milano - Italy
1999-2002	Lecturer of tutorial on Videomicroscopy and Image Processing within the course “ <i>Bioimaging</i> ”, Master degree in Biomedical Engineering, Politecnico di Milano, Milano - Italy

RESEARCH GRANTS [\(Top\)](#)

ERC

- 2016- 2021 "*GeCo: Data-Driven Genomic Computing*", aimed at efficient and easier genomic big data integration, management, querying and analysis; Co-responsible of the Bioinformatics Group Research Unit for Politecnico di Milano, Milano – Italy.
- 2008- 2013 "*SECO: Search Computing*", Responsible and Coordinator of the group bio applications of Research Unit for Politecnico di Milano, Milano – Italy.

EU

- 2007- 2010 STREP, FP6: "*COOPER: Collaborative Open Environment for Project-Centered Learning*", Member of Research Unit for Politecnico di Milano, Milano – Italy.

EIT

- 2015 "*Connecting Digital Cities (3city)*", Member of Research Unit for Politecnico di Milano, Milano – Italy.
- 2015 "*ExpLorMI*", Member of Research Unit for Politecnico di Milano, Milano – Italy.

PRIN

- 2013-2015 "*Data-Centric Genomic Computing (GenData 2020)*", aimed at building abstractions, models and protocols for an informatics infrastructure able to efficiently support the organization, search and analysis of a network of genomic data, made available from servers located in the world main biological laboratories; Member Co-responsible of Research Unit for Politecnico di Milano, Milano – Italy.
- 2009- 2011 "*EASE: Entity Aware Search Engine*" aimed at developing novel methods and techniques for building large scale, “entity aware” search engines and for exploiting the retrieved information in an effective and efficient way; Member of Research Unit for Politecnico di Milano, Milano – Italy.

FSE

- 2007 "*Elementi indicanti lo stato dell’arte della Cartella Clinica Informatizzata nelle Aziende Sanitarie e Ospedaliere Italiane*", Collaborator for Università degli Studi di Verona, Verona – Italy.

REGIONE LOMBARDIA

- 2011 "*BioProGenPlat: piattaforma integrata di biologia molecolare, genomica e proteomica correlata con le banche dati pubbliche*”, for the development of a

- bioinformatica platform to support biotechnology SME activity; Responsible of Research Unit for Politecnico di Milano, Milano – Italy.
- 2007 "*Virtual BioInformatics Lab: bioinformatics infrastructures and computational approaches supporting cancer diagnostics and biomarker discovery*", Co-responsible of Research Unit for Politecnico di Milano, Milano – Italy.

MURST

- 2003- 2005 "*Information and Communication Technology for the management of prevention, care and rehabilitation processes*", Collaborator for Politecnico di Milano, Milano – Italy.
- 1999-2000 "*Development of Software Agents for Healthcare Information Systems*", Collaborator for Politecnico di Milano, Milano – Italy.

FISS

- 1995-1998 "*Immunohistochemical and digital image analysis study of the glomerulosclerosis and renal tubulointerstitial lesions associated with aging*", Collaborator for the University of Granada, Granada – Spain.

ONCOLOGY

- 2000-2002 "*Development of algorithms and tools for microarray data management and analysis*", Collaborator for the European Institute of Oncology, Milano – Italy.

HONORS AND AWARDS ([Top](#))

- 2011 Prize from the International Neural Networks Society for the best scientific paper: "*Biomolecular annotation prediction through information integration*", by Chicco D, Tagliasacchi M, Masseroli M, presented by a young researcher at the conference *Eighth International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB 2011)*, Gargnano (BS) June 30th - July 2nd, 2011.
- 2006 "Visiting scholar program fellowship" from School of Computing and Mathematics of University of Ulster at Jordanstown, Belfast, for the evaluation of analysis algorithms of similarity among genes according to their functional annotation.
- 2004 e 2005 "Visiting faculty exchange program fellowship" of the National Library of Medicine, National Institute of Health, for six months, for the application of Natural Language Processing techniques on Medline abstract of scientific publications in order to automatically extract gene-gene and gene-disease semantic relations, and for the post-processing of extracted information with the aim of inferring unknown gene-gene and gene-disease relations.
- 2004 Selection, within the evaluation of Italian University Scientific Research, of the scientific publication Masseroli M, Cerveri P, Pelicci PG, Alcalay M. GAAS: "Gene Array Analyzer Software for management, analysis and visualization of gene expression data" *Bioinformatics* 2003;19(6):774-775 and the related web tool

(<http://www.bioinformatics.deib.polimi.it/GAAS/>), as one of the best 7 research products of the Bioengineering Department of the Politecnico di Milano in the years 2001-2003.

- 2001 “Best scientific publication in basic investigation - year 2000”, from the "Fundación Hospital Clínico" of Granada - Spain, for the paper "Automatic quantification of liver fibrosis: design and validation of a new image analysis method. Comparison with semiquantitative indexes of fibrosis" published in *Journal Hepatology* 2000;32(3):453-64.
- 1997 "Premio Cesar LLamazares", from the journal "Nefrología" for the paper "Papel de los inhibidores de la enzima de conversión de la angiotensina en la prevención de las alteraciones renales asociadas al envejecimiento" published in *Nefrología* 1996;16(4):319-26.
- 1996-1998 European Post-Doctoral Fellowship from the Spanish board of science and technology "Comisión Interministerial de Ciencia y Tecnología (CICYT)" within the “*Acciones de Formación de Personal Investigador - Estancias de Científicos y Tecnólogos Extranjeros en España*” to develop research projects in the field of biomedical image processing.
- 1994 “Special fellowship” from “The Cleveland Clinic Educational Foundation”, as researcher for the development of image analysis programs for the automatic analysis of intravascular ultrasound images of human coronary arteries.
- 1993 “Best oral communication”, to the communication "Cuantificación automatizada de la fibrosis renal por análisis digital de imagen", presented at the "XVI National Congress of the Spanish Society of Pathology" held in Tenerife - Spain in May 1993.
- 1993 Doctoral fellowship from "Sandoz Pharma S.A.E." to develop image analysis programs for the quantification of renal fibrosis induced by Cyclosporin A pharmacological treatment.
- 1991 Post-graduate specialization fellowship from "Fondazione IDI" to attend the business management course "XIII Corso integrato interdisciplinare Natale Toffoloni".

PATENT ([Top](#))

- 1997 Fibrosis HR[®]: package of computer applications for the automatic quantification of interstitial fibrosis and glomerular components. Copyright 1997, registered in Spain with n°. 1997/41/33427.

ORGANIZATION AND BOARDS OF SCIENTIFIC EVENTS ([Top](#))

Chair in Congresses

- Co-chair of the Special Session "*Machine learning in health informatics and biological systems*" within the 15th international *Conference on Computational Intelligence methods for Bioinformatics and Biostatistics - CIBB 2018*, held in September 2018 at Almada (Lisboa), PT.
- Co-chair of the Track "*Big Data in Bioinformatics*", within the 8^o *ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB 2017)*, held in August 2017 at Boston, MA.
- Co-chair of the Special Session "*Genomic big data management, modeling and computing*", within the international conference *Intelligent Systems for Molecular Biology - ISMB 2016*, held in July 2016 at Orlando, FL.
- Chair of the Special Session "*Genomic big data management, modeling and computing*", within the meeting "*BITS 2016: Bioinformatics Italian Society Meeting*", held in June 2016 at University of Salerno, Fisciano (SA), Italy.
- Co-chair of the meeting "*BITS 2015: Bioinformatics Italian Society Meeting*", held in June 2015 at University Milano "Bicocca", Milan, Italy.
- Co-chair of the meeting "*1^o Bioinformatics, Computational Biology and System Biology Lombardy Day (BioLom 2013)*", held in November 2013 at Politecnico di Milano, Milan, Italy.
- Co-chair of the workshop "*NETTAB 2012: Network Tools and Applications in Biology, focused on: Integrated BioSearch*", held in November 2012 at Politecnico di Milano in Como, Italy.
- Chair of the scientific session "*Web Services*" of the workshop "*Data Integration in the Life Sciences (DILS 2010)*", held in August 2010.
- Chair of the scientific session "*Graph-Based Modelling and Integration*" of the workshop "*Data Integration in the Life Sciences (DILS 2009)*", held in July 2009.
- Chair of the scientific session "*Gene Expression Analysis*" of the "*Ninth IEEE International Conference on Bioinformatics and Bioengineering (BIBE 2009)*" held in June 2009.

Congresses Scientific Committees

- Member of the Technical Program Committee of the 11th edition of the "*IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB 2015)*"
- Member of the Program Committee of the 12th edition of the "*European Conference on Evolutionary Computation, Machine Learning and Data Mining in Computational Biology (EvoBIO 2014)*"
- Member of the Technical Program Committee of the 10th international conference "*Beyond Databases, Architectures and Structures (BDAS'14)*"
- Member of the Technical Program Committee of the "*IEEE-EMBS International Conferences on Biomedical and Health Informatics (BHI)*"

- Member of the Steering Committee of the “*IWBBIO: International Work-Conference on Bioinformatics and Biomedical Engineering*” since its foundation in 2013.
- Member of the International Scientific Committee of the “*MEDICON2013: XIII Mediterranean Conference on Medical and Biological Engineering and Computing*”.
- Member of the Scientific Committee of the workshop “*International Symposium on Integrative Bioinformatics (IB)*” in 2010, 2011, 2012 and 2013.
- Member of the Program Committee of the workshop “*Data Integration in the Life Sciences (DILS)*” in 2009, 2010 and 2012.
- Member of the Scientific Committee of the workshop “*NETTAB: Network Tools and Applications in Biology*”, focused on “*A Semantic Web for Bioinformatics: Goals, Tools, Systems, Applications*” (2007), “*Clinical Bioinformatics*” (2011), “*Integrated BioSearch*” (2012) and “*Semantic, Social, and Mobile Applications for Bioinformatics and Biomedical Laboratories*” (2013).
- Member of the Program Committee of the workshop “*Intelligent Data Analysis in bioMedicine And Pharmacology (IDAMAP)*” in 2007, 2008, 2009, 2010, 2011 and 2012.
- Reviewer of the “*Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*” in its editions of 2007 and 2010.
- Member of the Scientific Committee of multiple editions of the Annual Meeting of the *Bioinformatics Italian Society (BITS)* in 2007, and from 2014 since today.
- Member of the Organizing Committee of the “*First European Symposium on Current and Future directions for Clinical Flow Cytometry*”, University of Granada, Granada – Spain in 1995.

EDITORIAL BOARDS, EVALUATION ACTIVITIES AND MEMBERSHIPS ([Top](#))

Scientific Journal Committees

- Editor of supplement 12, volume 17, 2016, “BITS 2015: the annual meeting of the Italian Society of Bioinformatics” of the scientific journal *BMC Bioinformatics*.
- Associated Editor of the supplement 14, volume 15, 2014, “NETTAB 2013: Semantic, social, and mobile applications for bioinformatics and biomedical laboratories” of the scientific journal *BMC Bioinformatics*.
- Editor of supplement 1, volume 15, 2014, “Integrated Bio-Search: selected works from the 12th International Workshop on Network Tools and Applications in Biology (NETTAB 2012)” of the scientific journal *BMC Bioinformatics* dedicated to Integrated Bio-Search.
- Editor of supplement B, volume 18, 2012, of the scientific journal *EMBnet.journal* dedicated to the workshop NETTAB 2012 on Integrated Bio-Search.

- Associated Editor of supplement 14, volume 13, 2012, “Research from the Eleventh International Workshop on Network Tools and Applications in Biology (NETTAB 2011)” of the scientific journal *BMC Bioinformatics* dedicated to Clinical Bioinformatics.
- Associate Editor of the scientific journal *IEEE Transactions on Information Technologies in Biomedicine* in 2004-2012.
- Reviewer of several the scientific journals since 2002, including *IEEE Transactions on Information Technologies in Biomedicine*, *IEEE Transactions on Biomedical Engineering*, *IEEE Transactions on Medical Imaging*, *IEEE Transactions on Education*, *Bioinformatics*, *BMC Bioinformatics*, *BMC Genomics*, *Nucleic Acids Research*, *Computers in Biology and Medicine*, *Expert Reviews* and *VLDB Journal*.

Scientific Evaluation Committees

- Independent evaluator for the European Research Council as expert for the evaluation of research proposals for the *Marie Skłodowska-Curie Individual Fellowships* call H2020-MSCA-IF-2017 in 2017.
- Independent evaluator for the European Research Council as expert for the evaluation of research proposals for the ERC Consolidator Grant call ERC-2017-COG “*ICON-BIO-Integrated Connectedness for a New Representation of Biology*” in 2016, in the Bioinformatics domain.
- Independent evaluator for the European Commission as expert for the evaluation of research proposals for the Horizon2020 call *SC1-PM-02-2017 “New concepts in patient stratification”* in 2015, in the domain of health care, demographic changes and well-being.
- Independent evaluator for the European Commission as expert for the evaluation of research proposals for the Horizon2020 call *H2020-PHC-2014 “Advancing bioinformatics to meet biomedical and clinical needs”* in 2014, in the domain of health care, demographic changes and well-being.
- Independent evaluator for the European Commission of research project proposals for the call *FP7-HEALTH-2012-INNOVATION-1* in 2012, in the health care domain.
- Independent evaluator of research project proposals for the national PRIN and FIRB programs of the Italian Ministry of University and Research in 2011, in the informatics domain and of applications to the biomedical domain.
- Member of the Repertoire of Experts created for the delivery of specialized consulting and tutoring services, addressed to the beneficiaries of the facilities of the global grant INGENIO, promoted by the Lombardy Region and addressed to the new graduated selected for the development of a collaboration or applied research project in 2007.

Membership in Scientific Societies and Working Groups

- Member of the *International Society for Computational Biology (ISCB)* since 2015.
- Member of the Working Group on “*Insurability of healthcare facilities and the medical and nursing staff*”, promoted by the university consortium CINEAS “For a Risk Culture”, since 2013.
- Member of the *Engineering in Medicine and Biology Society* of the *Institute of Electrical and Electronics Engineers (IEEE)* in 2009-2010.

- Member of the *Bioinformatics Italian Society (BITS)* since 2002.
- Member of the *American Medical Informatics Association (AMIA)* in 2002-2005.
- Member of the Research Group CTS138 in *Health Science and Technology* of the Andalusian Board, Spain, in 1995-1998.

BIOINFORMATICS TOOLS DEVELOPED ([Top](#))

(Use statistics on April 2014)

The highest impact bioinformatics applications that have been developed and maintained publicly accessible are:

- [GMQL](#): GenoMetric Query Language (more than **13,000 accesses** from about 350 different IPs)
- [MuSERA](#): MuSERA: Multiple Sample Enriched Region Assessment (nearly **1,700 accesses** from about 100 different IPs)
- [GPKB](#): Genomic and Proteomic Knowledge Base (more than **46,570 accesses** from nearly **1,150** distinct IPs)
- [Bio-SeCo](#): Bio Search Computing (nearly **9,800 accesses** from about 300 distinct IPs)
- [GFINDER](#): Genome Function INtegrated Discoverer (more than **290,000 accesses** from nearly **13,100** distinct IPs)
- [MyWEST](#): My Web Extraction Software Tool (about **94,150 accesses** from nearly **15,450** distinct IPs, with more than **400** downloaded copies)
- [GAAS](#): Gene Array Analyzer Software (more than **88,550 accesses** from about **14,400** distinct IPs, with nearly **680** downloaded copies)
- [MicroGen](#): MIAME compliant microarray experiment information manager (nearly 12,700 accesses from more than 3,250 distinct IPs, with about 40 downloaded copies)

PUBLICATIONS ([here](#) the full publication list) ([Top](#))

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- [IEEE Xplore Digital Library](#)
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