Curriculum Vitae of ENRICO NARDELLI

1 Positions

Enrico Nardelli graduated in December 1983 at University of Rome "La Sapienza" in Electronic Engineering (Major in Computer Science) with 110/110 *cum laude*. This is a 5 years degree with 27 two-semesters exams. In May 1984 he obtained the qualification to practice the Engineer profession.

He is *Full Professor* of Informatics and works since 2002 in the Department of Mathematics of the University of Roma "Tor Vergata" (one of the 180 Italian university departements receving a special grant for 2018-22 for their "excellence", grant which has been assigned also for 2023-27).

From 1992 to 2002 he has been in the Department of Informatics of the University of L'Aquila. He has held from 1993 to 2004 a position as Invited Research Scientist at the Institute for System Analysis and Informatics (IASI) of the italian National Research Council (CNR) in Rome, where he was a researcher (equivalent to Assistant Professors) from July 1989 to October 1992, before joining university.

In April 2022 he has received the prize *Associazione Rita Levi-Montalcini*, awarded by the Italian National Association of School Principals to scientists and researchers who have excelled in disseminating scientific culture in school.

He is coordinating since April 2014 *Programma il Futuro* (https://programmailfuturo.it), a joint project bewteen the Italian Ministry of Education and CINI, the Italian national inter-university Consortium for Informatics, for the introduction of basic concepts of informatics as a scientific subject in Italian schools.

Since its inception, the project has involved about three million italian students (half of them in primary schools) and 40 thousand teachers. In April 2022 the project has been recognized as the best initiative in the category "School Education" in the 1st Italian National Prize for Digital Competences, managed by the Department for Digital Transformation of the Italian Presidency of the Council of Ministers, and has been awarded a special mention for having been the most voted by the public among the 22 finalist projects, selected among the 120 submitted ones.

Since November 2019 he is the *Director* of the CINI National Laboratory "Informatics and School" ("Informatica e Scuola" - https://consorzio-cini.it/lab-informatica-e-scuola, that he had started as a CINI Working Group in March 2017.

In June 2022, this Laboratory has been awarded the title of Innovation Champion assigned by the COTEC Foundation, under the patronage of the President of the Italian Republic, to 45 institutions, companies and persons who distinguished themselves for the originality of their action, in any field.

In 2023 and 2024 he has been the *President* of the Organizational Committee of ITA-DINFO, the Italian national conference on Informatics education, which he has started as Director of the CINI National Laboratory "Informatics and School".

From January 2018 to December 2023 he has been the President of *Informatics Europe*, the association of Informatics departments and research laboratories in Europe and neighbouring areas (https://informatics-europe.org). During the same period, he served each year as the General Coordinator of the association's annual conference, the *European Informatics Leader Summit* (ECSS), a meeting dedicated to discussing strategic aspects and development trends concerning research and education in the information technology sector in Europe and their impact on society.

From September 2008 to October 2015 he has been member of its Board of Directors, filling the role of Treasurer from November 2011 to October 2013 and of Vice-President from November 2013 to October 2015.

Since January 2024 he is member *ex officio* of the Board of Directors of the association, in the role of *Past President*.

Since March 2018 he is member of the Executive Committee of the *Informatics for All* (https://informaticsforall.org) coalition, aiming at introducing Informatics as a foundational discipline in schools across Europe, which he has co-founded, as President of *Informatics Europe*, together with *ACM Europe Council* and *CEPIS - Council of European Professional Informatics Societies*. Subsequently, *IFIP - the Internation Federation for Information Processing* joined the coalition.

Since June 2024, he is member of the European Commission's group of experts for defining guidelines for the development of high-quality Informatics education, as provided for in the Council Recommendation of the European Union of 23 November 2023 (C/2024/1030).

From January 2016 to December 2021 he has been member of the Executive Board ("Consiglio Direttivo") of CINI as the representative of the University of Roma "Tor Vergata". Previously (2013-2015), he has been member of the Executive Board of CINI as the representative of GRIN, the Italian Association of University Professors of Informatics. From 2013 to 2021 he hase served in the Management Board ("Giunta Amministrativa") of CINI.

Since 2016, until its discontinuation in 2020, he has been member of the International Advisory Committee for the *Hour of Code and Computer Science Education Week*, the world most followed international initiative aiming at disseminating the importance of informatics education.

From July 2015 to June 2019 has been elected member of the *ACM Europe Council* (https://europe.acm.org) the European branch of ACM (Association for Computing Machinery), the world largest (90 thousand members) international association of informatics scientists and professionals. From July 2019 to December 2019 he has been co-opted in the Council as a liaison to *Informatics Europe.*

Since July 2019 he is member of the European Technology Policy Committee of the *ACM Europe Council.*

From December 2021 to December 2022 he has been the *National Coordinator* of the INFO-DIDA project, funded by the Ministry of Education and Research as part of the initiatives for the dissemination of scientific culture, which aims to study and disseminate methods for teaching computer science in schools.

From November 2013 to November 2016 he has been the *Director* of the CINI National Laboratory *InfoLife* (Metodi e Algoritmi per le Scienze della Vita) del CINI, which he had co-founded.

From January 2009 to December 2014 he has been member of the Executive Board of EQA-NIE, the *European Quality Assurance Network for Informatics Education*, co-founded by GRIN, which he represented in the General Assembly.

From March 2010 to September 2012 he has been the *National Coordinator* of SIMBIOSYS, a two-years research projects on bio-informatics, funded by the italian Ministry of University within the PRIN basic research program.

From May 2009 to October 2011 he has been member of the *Sectorial Committee on ICT and Multimedia* of the Lazio Region, evaluating, coordinating and monitoring innovation and research projects in this sector.

Since 2004 he is a *Registered Expert* for the italian Ministry of Education, University and Research, for the technical and scientific evaluation and monitoring of scientific research projects and of industrial research and technology transfer projects.

From September 2003 to November 2008 he has been the *President* of the Italian Association of University Professors in Informatics (GRIN), grouping the more than 800 university professors in Informatics all over Italy. From December 2008 to November 2014, as Past President, he has been member of its Executive Board. Previously, from September 2002 to September 2003 he had been the *Vice-President* of GRIN, responsible for Teaching Affairs.

From 2004 to 2008, he has been member of the Executive Board of AICA (*Associazione Italiana per l'Informatica ed il Calcolo Automatico*), the oldest (1961) italian scientific and professional informatics society.

In June-July 2007, by invitation from the Academy of Finland, he has been member of an international panel of eight Informatics experts which have evaluated Informatics research in Finland for the period 2000-2006.

At the University of Roma "Tor Vergata" he has been the *Director* of the Bachelor Program in Informatics, from March 2003 to May 2005, and from June 2005 to October 2007 he has been the *Vice-Director* of the Master Program in Informatics.

While at University of L'Aquila he has served as *President* of the Coordination Committee for University Information Systems, from November 1997 to March 2000; *President* of the Testing and Validation Committee for the Computer-Based Central Information System, from November 1997 to March 2000; *Director* of the Master Program in Informatics (about 1000 students enrolled), from November 2001 to November 2002; *President* of the Faculty of Sciences Resource Planning Committee, from November 2001 to November 2002.

2 Teaching and Scientific Activities

He has lectured in university Degree programs on: Algorithms and Data Structures, Data Bases, Information Systems Design, Human-Computer Interaction, Software Engineering, Programming Languages, Informatics Education.

He has held seminar and lectures at various italian and international organizations: italian National Research Council in Rome and Pisa, University of Rome "La Sapienza", University of Rome "Tor Vergata", University of Nice, International Informatics Institute di Berkeley, Federal Polytechnic of Zürich.

In November 2022 he has been *Keynote Speaker* of the Italian conference *Didamatica* organized yearly by AICA. In September 2022 he has been *Keynote Speaker* of the *International Conference on Informatics in Schools - ISSEP*.

In November 2021 he has been *Keynote Speaker* della 13-ma Annual Conference of the *Nexa Center for Internet and Society* and in September 2021 he has been *Keynote Speaker* of the *ACM International Conference on Information Technology for Social Good*.

He has been Contract Professor in Computer Science at:

- University of Rome "Tor Vergata" during academic years 1988-89, 1989-90, and 1990-91.
- University of L'Aquila, during academic years 1989-90 and 1990-91.
- University of Rome "La Sapienza", during academic year 1990-91.

He has been Contract Research Assistant:

- from March 1988 to June 1989 at the Department of Mathematics of Rome University "Tor Vergata".

- from March 1987 to February 1988, at the Italian National Research Council (CNR) in Rome.

- from January 1984 to March 1987, at the Department of Computer Science and System Analysis of Rome University "La Sapienza".

He has been Visiting Scientist at the International Computer Science Institute of Berkeley (California), from July to September 1994, at the Federal Polytechnic of Zürich (ETH) from February to March 1996, and at the "Aristotle" University of Thessaloniki from July to August 2000.

His current research focus is on Informatics Education, through the CINI National Laboratory "Informatics and School", and on Socio-Technical analysis and design of Informatics Systems, through the *Link&Think* Interdisciplinary Laboratory https://link-and-think.blogspot.com and the internazional initiative on Digital Humanisms https://dighum.ec.tuwien.ac.at.

He previously carried out research in various field of theoretical and applied Informatics:

- algorithms and data structures,

- data models,

- tools and environments for interaction with information systems,

- cooperative and distributed information systems.

- bioinformatics

- informatics and digital art

For what regards the algorithms and data structures field, his areas of interest were: graph algorithms, physical data structures for multi-dimensional data, scalable distributed data structures, algorithms for partial orders, algorithms for communication networks.

As far as the data models field is concerned, his areas of interest were: definition and analysis of multimedia and spatial data models, query languages for spatial data, physical access methods, system architectures for geographical information systems.

In the interaction with information systems field his areas of interest were: interaction with systems for complex problem solving, techniques and paradigms of interaction with information systems.

Concerning cooperative and distributed information systems his areas of interest were: data models for information integration, certification and security issues in the Internet-mediated inter-organizational cooperation.

More recently, in bio-informatics he worked on the definition and realization of models and tools for representation and simulation of biochemical interaction networks.

Finally, he has also investigated the interdisciplinary area of informatics and digital art, with a goal of enriching the capability of informatics systems to describe and help the comprehension of complex scenarios by using approaches and methods typical of the artistic domain.

He has authored more than 150 papers in the above fields, published in the most reputed international scientific journals and conference proceedings. He acts also as a referee for journals and conferences active in the above areas (https://www.mat.uniroma2.it/~nardelli/publications/index.html).

He has been Team Leader and Principal Investigator various basic and applied research projects, in various national and european research programmes, in the following sectors:

- data models, algorithms, and physical data structures for territorial data management,

- data models and algorithms for management and processing of complex data,

- language and models for spatial database querying,

- information systems for land and environmental planning,

- human-computer interfaces, usability engineering, support tools for software systems design,

- multimedia and adaptive human-computer interaction.

3 Dissemination of Informatics Culture

This section describes, starting from the most recent ones, professional activities focusing on the dissemination of Informatics culture. A detailed list of outreach and dissemination activities related to Informatics culture is avaiable online as publich speeches (https://www.mat.uniroma2.it/~nardelli/public-speeches.html), dissemination articles (https://www.mat.uniroma2.it/~nardelli/dissemination-articles.html), and interviews (https://www.mat.uniroma2.it/~nardelli/interviews.html).

- He published in October 2022 the book *La rivoluzione informatica: conoscenza, consapevolezza e potere nella società digitale* (The informatics revolution: knowledge, awareness and power in the digital society) in the series "Società Digitale" (Digital Society) by Edizioni Themis (https://tinyurl.com/rivoluzione-informatica), a text dedicated to the general public and policy-makers, that explores the scientific roots of information technology, essential for understanding the impact that digital technology has on people and society in general, and that offers a strategic vision of this discipline in its various fields of application, also in the light of the international panorama.

- In September 2022, he published the handbook *Educare alla cittadinanza digitale* (Educating to Digital Citizenship) in the series "Risorse Formative" (Education Resources) by Edizioni Themis (https://tinyurl.com/educare-cittadinanza-digitale), a practical text addressed to school teachers to support them in the digital citizenship education activities to be carried out as part of the transversal teaching of civic education, introduced in Italian schools of all levels by Law 92/2019.

- He is member of the *Informatics for All*'s expert committee that released in February 2022 the "Informatics Reference Framework for School" (https://www.informaticsforall.org/the-informatics-reference-framework-for-school-release-february-2022/), a document that defines a minimum set of high-level requirements shared at European level, to guide the definition of curricula for the teaching of Informatics at school, respectful of the cultural specificities of each nation but adhering to a coherent vision of the discipline and with a shared terminology.

- He was among the drafters and first signatories of the *Vienna Manifesto for Digital Humanism* (https://dighum.ec.tuwien.ac.at/dighum-manifesto/), published in May 2019, a call to reflect on technological development process and actively participate in shaping its governing policies, so as to design technologies according to human values and needs, instead of allowing technologies to shape human beings.

- He has been the co-founder of the interdisciplinary blog https://link-and-think.blogspot.com, developing research and dissemination on digital transformation themes adopting a socio-technical-humanistic approach. He writes op-eds on cultural and education issues of Informatics on the web sites https://www.startmag.it, https://www.agendadigitale.eu, and https://www.key4biz.it. He has also had a blog for the online version of "Il Fatto Quotidiano" https://www.ilfattoquotidiano.it/blog/enardelli/, onse of the major Italian newspapers.

- He is coordinating since September 2014 "Programma il Futuro" (https://programmailfuturo.it), a joint project between the Italian Ministry of Education and CINI, the Italian national inter-university Consortium for Informatics, for the introduction of basic concepts of informatics as a scientific subject in Italian schools. Since its inception, the project has involved about three million italian students (half of them in primary schools) and 40 thousand teachers.

- As President of GRIN he prepared many written and oral contributions, towards the goal of convincing italian politicians and media on the cultural importance for an advanced society of Informatics and information technology (available on line at https://www.mat.uniroma2.it/~nardelli/GRIN-activity/index.html).

- In 2006 he has coordinated the scientific workshop "Informatics: Culture and Society" held at the italian Chamber of Deputies (the lower house of the Italian Parliament), with participation from politicians of both political coalitions, industrials, and scientists (https://www.informatica.uniroma2.it/convegno) and has been the editor of the proceedings, published by "Carocci Editore".

4 Professional Activity

He has carried out the following categories of professional activty:

1. informatics techno-scientific expert in Procurement Committees

2. informatics techno-scientific expert for the evaluation of research, research and development, and technological innovation and transfer projects

3. other professional activities

4.1   Procurement Committees

This sub-section describes, starting from the most recent ones, professional activties focusing on membership in Procurement Committees.

- In July-October 2016 he has been the President of the Procurement Committee for the management and maintenance services of the informatics system of "Fondartigianato".
- In March-April 2008 he has been the President of the Procurement Committee for the maintenance, development and management of the informatics system of "Fondimpresa".
- In July 2002 he has been member of the Appeal Committee of the Italian National Research Council (CNR) for the evaluation of the congruity of costs related to the cooperation agreement between CNR and CINECA (a universities-owned company providing computing services) for the design and development of the CNR's information system for planning and budget management.
- From May to June 2002 he has been member of the Appeal Committee of the italian Ministry for Agricultural and Forestal Policies for the evaluation of technical and economic justifications provided by the industrial consortium that had won the Call for Tender for the realization of all services of the italian National Agricultural Information System.
- From February to March 2002 he has been the President of the Procurement Committee of the Call for Tender for the provision during years 2002-2004 of adaptive and evolutive maintenance services of the application software for the Statistical Information Systems of the italian National Statistics Institute (ISTAT).

4.2   Evaluation of Research, R&D, Innovation and Transfer

He has developed a very large experience on research evaluation in Informatics, above at all on applied research and development, covering all the various issues, from research and innovation policies to quantitative evaluation, from management to diffusion, transfer, and industrial and business exploitation of results.

Along more than thirty years of experience he has evaluated more than seventy basic and applied research projects in all fields of Informatics.

He has been a consultant, from 1994 to 1997, to the Scientific and Technological Park of the Abruzzo region for reviewing and monitoring R&D projects financed by the European Union in the areas of:

- management information systems for public administration
- information systems for land monitoring and management
- multimedia systems for teaching and continuing education.

From 1990 to 1995 he has been a consultant to Directorate General XIII (Information Technologies and Industries, and Telecommunications) of the Commission of the European Communities, for the technical and scientific evaluation and revision of R&D workplans, proposals, and projects within the R&D ICT Programmes, in the areas of "Advanced Business and Home Systems" and "Information Processing Software and Systems".

4.3   Other professional activities

This sub-section describes, starting from the most recent ones, professional activities of miscellaneous kind.

- From November to December 2018 he has been member of the Evaluation Committee for the national competition to the Director position at the "Institute of Science and Technology of Informatics" of the Italian National Research Council (CNR) in Pisa.

- As member of the Board of Directors of Informatics Europe, he has contributed in 2012-2015 to the definition and realization of the annual report on the state of university education in Informatics in Europe (https://informatics-europe.org/publications.html).

- As member of the Board of Directors of Informatics Europe, he has directed and coordinated in 2010-2012 the design and development of the association's web portal, featuring also a directory service for European informatics research and higher education institutions and a job placement service for positions requiring a PhD in Informatics..

- As Vice-President of GRIN he has coordinated and directed from 2003 to 2015 the design and implementation of the "Certification Systems for Quality of Content" for italian informatics degree courses (known as "Bollino Blu"="Blue Mark"). The system is supported by a web site and has been described in many national and international publications.

- From December 2001 to June 2002 he has been member of the Evaluation Committee for the national competition to a Senior Researcher position at the "Institute for Land Planning and Management" of the Italian National Research Council (CNR) in Neaples.

- From 1998 to 2000 he has consulted to the italian Authority for Informatics in Public Administration (AIPA) on the design and implementation of various inter-organizational information systems in the areas of:
  - public registries of personal data
  - public registries of cadastral data
  - exchange systems for cadastral data
  - distributed information systems for mountain communities.

- From November 1997 to March 2000 he has been the President of the Information Systems Steering Committee of the University of L'Aquila.

- From November 1997 to March 2000 he has been the President of the Validation Committee for the Main Information System of the University of L'Aquila.

5 Riferimenti

Prof. Enrico Nardelli
Università di Roma "Tor Vergata"
Dipartimento di Matematica
Via della Ricerca Scientifica snc, I-00133 Roma, Italia
Tel.: +39-06-7259.4204
Fax.: +39-06-7259.4699
mobile:+39-335-590.2331
e-mail: nardelli@mat.uniroma2.it
home page: https://www.mat.uniroma2.it/~nardelli