Elvira Di Nardo

Curriculum Vitae

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Academic Positions

Ongoing

01/03/2016   ASSOCIATE PROFESSOR, *in "Probability and mathematical statistics"*.
Department of Mathematics "G.Peano", University of Turin, Italy

Past

08/05/2015   ASSOCIATE PROFESSOR, *in "Statistics"*.
Department of Mathematics, Computer Science and Economics, University of Basilicata, Italy

29/12/1996   ASSISTANT PROFESSOR, *in"Probability and mathematical statistics"*, On maternity leave from 22/08/2000 to 22/01/2001 and from 15/10/2003 to 15/03/2004.
Department of Mathematics, University of Basilicata, Italy

Education

1992-96   PH.D. IN APPLIED MATHEMATICS AND COMPUTER SCIENCE.
University of Naples "Federico II"

1991   BACHELOR'S DEGREE IN MATHEMATICS, *(with honors)*.
University of Naples "Federico II"

ENGLISH AND FRENCH (SCHOLASTIC).

Summer schools and post-doctoral courses

1998   CORTONA, *Prof. Gian-Carlo Rota (MIT, Cambridge)*.
Scuola Matematica Interuniversitaria, Italy

1997   POTENZA, *Prof. Gian-Carlo Rota (MIT, Cambridge)*.
University of Basilicata, Italy

AOSTA, *Prof. Michael Tarter (Univ. California, Berkeley)*.
Summer school on probability and statistics, Bocconi University

1996   NAPLES, *Prof. Vera Lanskà (Univ. Praga)*.
University of Naples "Federico II", Italy

1995   BOLOGNA, *Various lecturers*.
Summer school on vector and parallel processing, Cineca Consortium, Italy

1995   CORTONA, *Prof. Patrick Billingsley (Univ. Chicago) Prof. Michele Cifarelli (Univ. Bocconi)*.
Scuola Matematica Interuniversitaria, Italy

1994   AOSTA, *Prof. Patrick Billingsley (Univ. Chicago), Prof.A.Rukhin (Univ. Maryland), Prof.V.V. Sazanov (Steklov Mathematical Institute)* .
Summer school of probability and statistics, Bocconi University

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Academic Qualification

16/01/2020   NATIONAL SCIENTIFIC ABILITATION FOR FULL PROFESSOR, in "Probability and mathematical statistics".

Luglio 2018   ACADEMIC TEACHING EXCELLENCE, *British Council*, Torino.

10/02/2014   NATIONAL SCIENTIFIC ABILITATION FOR ASSOCIATE PROFESSOR, *in "Statistics"*.

30/12/2013   NATIONAL SCIENTIFIC ABILITATION FOR ASSOCIATE PROFESSOR, in "Probability and mathematical statistics".

Invitation from national and international research organizations and institutes

2010   LISBON, *CELC – Centro des Estruturas Lineares e Combinatorias*, Visiting Professor, March.

2009   CHICAGO, *Department of Statistics, Univ. Chicago*, Visiting Professor, May-July.

1995-96   PADUA, *Department of Pure and Applied Mathematics, Univ. of Padua, Italy*, Visiting Student, Various periods.

1994   BUDAPEST, *Department of Computer Science, Univ. Eötvös Loránd*, Visiting Student, *Tempus Grant*, April-July.

Conferences and Seminars

Notable (invited) communications

2015   GENOA, *Algebraic Statistics*, Talk: Symbolic Methods in Statistics: elegance towards efficiency.
other speakers Thomas Kahle (OvGU Magdeburg, Germany), Sonja Petrović (IIT Chicago, USA), Jim Q. Smith (Warwick Univ., UK), Bernd Sturmfels (UC Berkeley, USA)

2011   BOLOGNA, *67th Séminaire Lotharingien de Combinatoire*, Tutorial: Symbolic Methods in Probability and in Statistics.
other speaker Mireille Bousquet-Mélou (Univ. Bordeaux 1, France)

DUBLIN, *58th World Statistics Congress of the International Statistical Institute*, Panel Discussion: Future directions and new challanges in mathematical statistics, Youtube video `https://www.youtube.com/watch?v=bf7k1NGLQSY`.
other speakers Peter McCullogh (Univ. Chicago, USA), Rosemary Bailey (Univ. Queen Mary College, UK), Xiao-Li Meng (Univ. Harvard, USA), Joan del Castillo (Univ. Barcellona, Spain)

2010   LISBON, *Scientific Meetings*, Tutorial: The Eleventh and Twelveth Problems of Rota's Fubini Lectures: from Cumulants to Free Probability Theory.
other speaker Domenico Senato (Univ. Basilicata, Italy)

Invited communications and seminars

2023   THESSALONIKI, *10th International Workshop on Applied Probability*.
Session: Stochastic models, processes and applications

2022   BOLOGNA, *III Italian Meeting in Probability and Statistics*.
Session: Markov processes and first passage time problems

2020   VIRTUAL MEETING, *International conference on trends and perspective in linear statistical inference*.
Session: Multivariate models

2016   TURIN, *Research Innovation and Education in the Time of Big Data*, University of Turin, Italy.

ROME, *Recent Developments in Probability Theory and Stochastic Processes*.

SALERNO, *48th scientific meeting of the Italian Statistical Society*.
Session: Detecting heterogeneity in ordinal data surveys

2015   VIENNA, *8th International Workshop on Simulation*.
Session: Algebraic Statistics in Design of Experiments

NAPLES, *Seminars in probability and statistics*, University of Naples "Federico II", Italy.

2014-07   SALERNO, *Seminars in probability and statistics*, University of Salerno, Italy.

2006   TURIN, *Seminars in probability and statistics*, University of Turin, Italy.

Further communications

2023 PIRIAPOLIS, *15th International Workshop on Neural Coding*.

2020 VIRTUAL MEETING, *Bernoulli-Institute of Mathematical Statistics One World Symposium*.

2019 VIETRI, *II Italian Meeting on Probability and Mathematical Statistics*.

2018 GOTHENBURG, *40th Stochastic Processes and their Applications International Conference*.

2014 PISA, *7th International Conference on Computational and Methodological Statistics*.

SIDNEY, *Australian Statistical Conference in conjunction with the Institute of Mathematical Statistics Annual Meeting*.

GENEVA, *21st International Conference on Computational Statistics*.

2013 BUDAPEST, *29th European Meeting of Statisticians*.

WROCLAW, *7th International Conference on Lévy Processes: Theory and Applications*.

2012 VIETRI, *Mathematical Modeling and Computational Topics in Biosciences - Dedicated to the Memory of Professor Luigi M. Ricciardi*.

ROME, *46th Scientific meeting of the Italian Statistical Society*.

2008 SINGAPORE, *7th World Congress in Probability and Statistics*.

2007 VIETRI, *Collective Dynamics: Topics on Competition and Cooperation in the Biosciences*.

2005 VIETRI, *Diffusion processes in Neurobiology and Subcellular Biology*.

LAS PALMAS, *1st international work-conference on the Interplay Between Natural and Artificial Computation conference on Artificial Intelligence and Knowledge Engineering Applications*.

2004 MARATEA, *11th Incontro Italiano di Combinatoria Algebrica*.

2003 LAS PALMAS, *9th International Conference on Computer Aided Systems Theory*.

2002 VIENNA, *16th European Meeting on Cybernetics and Systems Research*.

MARATEA, *Gian-Carlo Rota Memorial Conference*.

VIETRI, *Topics in Biomathematics and Related Computational Problems at the Beginning of the Third Millennium*.

2000 VIENNA, *15th European Meeting on Cybernetics and Systems Research*.

ROME, *Conferenza Annuale della Italian Society for Computer Simulation*.

1999 VIENNA, *7th International Workshop on Computer Aided Systems Theory*.

1995 OXFORD, *International Euroconference on Metrology*.

Diffusion of scientific knowledge

2022 TURIN, *Probability and uncertainty*, Seminar for senior students of Gobetti High School.

2019 TURIN, *On the master's program in stochastics and data science.*, Orientation day on master programs, Department of Computer Science, University of Turin, Italy.

2016 TURIN, *Open doors*, Orientation day on bachelor and master programs, Department of Mathematics "G.Peano", University of Turin, Italy.

2015 POTENZA, *Better data, better lives*, in Second World Statistics Day, organized in collaboration with ISTAT (Potenza), University of Basilicata, Italy.

POTENZA, *Knowing to compete: instructions for using the skills of a mathematics department*, A day on mathematics and innovation in production processes, Chamber of Commerce, Potenza.

2014 POTENZA, *The dark side of uncertainty and the thousand colors of the rules of chance*, Scientific digression meetings, Liberascienza, Potenza.

POTENZA, *Studying math at USB, that is how and where to learn a universal language*, Orientation days for senior high school students, University of Basilicata, Italy.

2013 ROME, *Say it with a chart*, Collaboration with Prof. Liseo (speaker) for the third Italian Statistics Day, available video `https://www.youtube.com/watch?v=Tm7HiCExFlw`.

2012 POTENZA, *The art of telling lies with the help of a chart*, Orientation seminars at various high schools, Potenza.

Organizer and scientific committees

2018 TURIN, 13th International Workshop on Neural Coding.

2017 TURIN, I Italian Meeting on Probability and Mathematical Statistics.

2015 POTENZA, World Statistics Day.

POTENZA, Official Statistics: sources and data, Open day: ISTAT meets with students in Economics.

2012 MARATEA, *Scientific committee*, Combinatorial methods in stochastic calculus.

VIETRI, Mathematical Modeling and Computational Topics in Biosciences - Dedicated to the Memory of Professor Luigi M. Ricciardi.

2011 NAPLES, A day dedicated to the Memory of Professor Luigi M. Ricciardi.

2007 VIETRI, Collective Dynamics: Topics on Competition and Cooperation in the Biosciences.

2005 VIETRI, Diffusion processes in Neurobiology and Subcellular Biology.

2002 VIETRI, Topics in Biomathematics and Related Computational Problems at the Beginning of the Third Millennium.

1999 MARATEA, VI Italian meeting on Algebraic Combinatorics: International Conference dedicated to the memory of G.C. Rota.

Conference session organizers

2022 BOLOGNA, Session: *On stochastic methods, models and applications*, In III Italian Meeting on Probability and Mathematical Statistics.

2019 VIETRI, Session: *Stochastic processes with application in finance*, In II Italian Meeting on Probability and Mathematical Statistics.

2014 GENEVA, Session: *Symbolic/Algebraic Methods in Computational Statistics I e II*, In 21st International Conference on Computational Statistics.

SIDNEY, Session invited Chair: *Spatial Statistics*, In Australian Statistical Conference in conjunction with the Institute of Mathematical Statistics Annual Meeting.

2012 ROME, Session invited Chair: *Stochastic Processes*, In 14th Conference of the Applied Stochastic Models and Data Analysis International Society.

Editorial/review activities

Editorial Board
- *Mathematics* (Section Probability and Statistics)
- *Lecture Notes of Seminario Interdisciplinare di Matematica,* Journal of the Department of Mathematics, Computer Science and Economics, University of Basilicata, Italy, (through 2016)

Referee
- VQR 2015-2019 *Italian Research Quality Assessment 2015-2019*, Member of the Group of Expert Evaluators, disciplinary panel Area 01, Science Mathematics and Computer Science, 2020 - 2022.
- Project EU FP7-ICT-2013-10 *Virtual, physiological and computational neuromuscular models for the predictive treatment of parkinson's disease* Member of the Group of Expert Evaluators with Ana Martinez (CSIC, Spain), Katrin Buerk (Univ. Marburg German), 2014 - 15
- Research grant on *Density estimation over complex multidimensional domains: a penalized likelihood approach*, University of Padua, Italy, 2019
- Contributions submitted to 7th and 8th Multi-Conference on Systemics, Cybernetics and Informatics, 2003 - 2004
- MATHSCINET American Mathematical Society

- ○ PAPERS ON JOURNALS: Annals of Combinatorics, Arab Journal of Mathematical Sciences, Brazilian Journal of Probability and Statistics, British Journal of Mathematics and Computer Science, Computational Geosciences, Communications in Statistics, Computational Statistics and Data Analysis, Discrete Dynamics in Nature and Society, Discrete Mathematics, ISRN Applied Mathematics, Journal of Computational and Applied Mathematics, Methodology and Computing in Applied Probability, Probability theory and related fields, Statistics and Computing, Stochastic Models, Symmetries, Computational Geosciences, Scientiae Mathematicae Japonicae, Electronic Journal of Statistics, Stochastic Analysis and Applications, Scandinavian Journal of Statistics, Applied Stochastic Models in Business and Industry, Statistics and Computing, Stochastic Models, Mathematics, Journal of Mathematics and computations.
- ○ BOOK REVIEW: for the series Lecture Notes in Mathematics (Springer), for the publishing company McGraw Hill (*Probabilità e statistica per le Scienze e l'Ingegneria*, Pasquale Erto, 2008), for the American Mathematical Society (*Guide to the umbral calculus-a different mathematical language.* Silvia Licciardi and Giuseppe Dattoli. World Scientific Publishing, 2022)
- ○ PROOFREADING: Algebraic Combinatorics and Computer Science: a tribute to G.C. Rota (eds. Henry Crapo and Domenico Senato), Springer-Verlag, Milano (2000); Elementi di Statistica, Antonio Di Crescenzo, Luigi Maria Ricciardi, Liguori Editore (2000); Statistica, Domenico Piccolo, Il Mulino (2000); Un primo corso in probabilità. Per scienze pure e applicate, Antonio Di Crescenzo, Antonio Di Crescenzo, Virginia Giorno, Amelia Giuseppina Nobile, Luigi Maria Ricciardi. Liguori editore (2009).
- ○ Examiner pf several master's theses in Mathematics and Stochastic and Data Science (University of Turin, Italy)

Activities for PhD Schools

PhD board

2018- MODELLING AND DATA SCIENCE, *University of Turin, Italy*, also in the quality assurance group.

2016-17 MATHEMATICS AND COMPUTER SCIENCE, *University of Basilicata and University of Salento, Italy*.

2012-15 "PYTHAGORAS DI SAMO" IN MATHEMATICS AND COMPUTER SCIENCE, *University of Basilicata, Italy*.

2007-11 APPLIED MATHEMATICS AND COMPUTER SCIENCE, *University of Basilicata, Italy*.

2004-06 METHODS AND MATHEMATICAL MODELS FOR DYNAMICAL SYSTEMS, *University of Basilicata, Italy*.

Advisor

2021- ○ *Tommaso Martini* for the Ph.D.Modelling and Data Science (University of Turin, Italy), co-advisor Prof. Stefano Ferraris (Interuniversity Department of Regional and Urban Studies and Planning, Univ. Turin and Politecnico di Torino, Italy), cotutele with the Università di Pau, Prof. Ivan Kojadinovic (co-advisor), (Department of Data Science)
- ○ *Chalachew Muluken Liyew,* (University of Turin, Italy), co-advisor Prof.Rosa Meo (Department of Computer Science, University of Turin, Italy)

2006-08 *Imma Oliva*, for the PhD in Mathematics (University of Bologna, Italy) co-advisor Prof. Marilena Bernabei, Thesis: A moment symbolic representation of Lévy processes with applications. Currently, Dr. Imma Oliva is associate professor in Mathematical methods of economy, finance and actuarial sciences at the Department of Methods and Models for Economics, Territory and Finance, University of Rome, Italy

Member of examination committees for the achievement of the phd title

2021 Ph.D. in Mathematics, Physics and Applications, committee (online) chaired by Prof. Antonio Di Crescenzo (Univ. Salerno)

2012 Ph.D. in Mathematics (section: probability), committee chaired by Prof. Carlo Sempi, at Univ. Bari.

2003 Ph.D in Mathématiques, informatique et applications aux sciences humaines, committee chaired by Prof. Pierre Cartier, director of research at CNRS,Ecole des hautes etudes en sciences sociales, Paris

Research activities

Collaborations with organizations/institutions (out university)

2016-21 EVO DEVELOPMENT SRL, *Turin*.
Models and Algorithms for Stockout Forecasting in Fashion Retail

2017-18 CENTER FOR RESEARCH AND TECHNOLOGICAL INNOVATION, RAI, *Turin*.
Data Driven Journalism

2016-17 BOELLA INSTITUTE - MAURIZIANO HOSPITAL, *Turin*.
Identification of pain threshold in newborns

2015-16 SOLETHEN SRL – SOLUTION FOR ETHICAL ENGINEERING, *Potenza*.
Energy Balances

2008-13 SAN CARLO HOSPITAL, *Potenza*.
Identification of ad hoc statistical indices in the study of cancer recurrence

2008 ASL, *Lagonegro, Montalbano ionico*.
Biostatistics, Ethics Committee

2006-12 SAN CARLO HOSPITAL, *Potenza*.
Biostatistics, Ethics Committee

Research projects (university)

Collaborations
- *Rainfall forecast models* with Prof. Stefano Ferraris (Interuniversity Department of Regional and Urban Studies and Planning, Univ. Turin and Politecnico di Torino, Italy)
- *Statistical characterization of some proteins* with Prof. Faustino Bisaccia, Department of Chemistry, Univ. Basilicata
- *Predictive models of reproduction of some parasites,* with Ph.D. Vincenzo Trotta, Department of Agricultural Sciences, Univ. Basilicata
- *Forecasting models for seismic events,* with Prof. Marco Mucciarelli, School of Engineering, Univ. Basilicata
- *Statistical analysis of bioecosystems* with Ph.D. Adriano Sofo, School of Agricultural Sciences, Univ. Basilicata
- *Intellectual Capital Index* with Prof. Giovanni Schiuma, School of Engineering, Univ. Basilicata
- *FEOGA – Basilicata multiregional operational program - sensory typicality of some foods* with Ph.D. Erminio Monteleone, School of Agricultural Sciences, Univ. Basilicata

Local research projects
- 2022-: From Markovian models to those with memory, theoretical and applied problems, scientific coordinator Prof. Laura Sacerdote, Univ. Turin
- 2020-21: Stochastic and statistical methods and models for applications, scientific coordinator Prof.ssa Laura Sacerdote, Univ. Turin
- 2019: Probabilistic and statistical methods and models, scientific supervisor Prof. Laura Sacerdote, Univ. Turin
- 2017-18: Stochastic models and applications, *scientific supervisor Prof. Elvira Di Nardo*, Univ. Turin
- 2009-10: Stochastic Lévy processes and free probability, *scientific supervisor Prof. Elvira Di Nardo*, Univ. Basilicata
- 2005-06: First-pass time analysis for Gaussian stochastic processes and time series, *scientific supervisor Prof. Elvira Di Nardo*, Univ. Basilicata

	○ 2002-03: First-pass time analysis for stochastic long-memory processes, *scientific coordinator Prof. Elvira Di Nardo*, Univ. Basilicata
	○ 2000-01: Development of probabilistic models and methods for applications in biomathematics, scientific supervisor Prof. Antonio Di Crescenzo, Univ. Basilicata.
	○ 1997-98: Orthogonal polynomials and their applications, scientific supervisor Prof. Giuseppe Mastroianni, Univ. Basilicata
National research projects	○ INDAM 2015: Cumulants: theory and applications, *scientific supervisor Dr. Elvira Di Nardo*, Univ. Basilicata, Visiting Professor: Henry Wynn, London School of Economics
	○ PRIN 2008: (local unit of the University of Salerno) Stochastic models for information processing and transmission in neuronal systems; theoretical and computational aspects, scientific supervisor Prof. Amelia Giuseppina Nobile, scientific coordinator Prof. Aniello Buonocore, Univ. Naples
	○ GNCS 2005: Algorithms and procedures for simulation and modeling of the actin-myosin system, scientific supervisor Prof. Luigi Maria Ricciardi, Univ. Naples.
	○ PRIN 2005: (local unit of the University of Salerno) Stochastic models of neuronal activity: theoretical and computational aspects, scientific supervisor Prof. Amelia Giuseppina Nobile, scientific coordinator Prof. Luigi Maria Ricciardi, Univ. Naples.
	○ PRIN 2003: (local unit of the University of Salerno) Analytical Methods and Algorithms for Stochastic Models of Neuronal Dynamics, scientific supervisor Prof. Amelia Giuseppina Nobile, scientific coordinator Prof. Luigi Maria Ricciardi, Univ. of Naples.
	○ GNCS 2003: Methods, algorithms and codes for neuronal models and in nanobiology, scientific supervisor Prof. Luigi Maria Ricciardi, Univ. Napoli.
	○ CINECA 2002: Development and implementation of Gaussian process simulation algorithms for applications in theoretical neurobiology, scientific supervisor Prof. Luigi Maria Ricciardi, Univ. Naples.
	○ PRIN 2000: (local Unit of the University of Basilicata) Simulation and Reliability Methods for Stochastic Models of Neural Dynamics, *scientific supervisor Dr. Elvira Di Nardo*, scientific coordinator Prof. Luigi Maria Ricciardi, Univ. of Naples.
	○ GNIM 2000: Computational methods in probabilistic modeling of neuronal activity, scientific supervisor Prof. Luigi Maria Ricciardi, Univ. Naples.
	○ CNR 1998: Mathematical methods and models in the study of biological phenomena, scientific supervisor Prof. Domenico Iannelli, Univ. of Trento.
	○ CINECA 1998: Parallel simulations in first-pass time problems for correlated Gaussian processes, scientific supervisor Prof. Luigi Maria Ricciardi, Univ. Naples.
	○ PRIN 1998: (local unit of the University of Basilicata) Interpolation and approximation in various function spaces, integral equations and related problems of numerical linear algebra, scientific supervisor Prof. Giuseppe Maria Mastroianni, scientific coordinator Prof. Valeria Ruggiero, Univ. Ferrara.

Visiting professors

Univ. Torino	Luis Alberiko Gil-Alaña (Navarra University), Christophe Ley (Ghent University), Yosef Rinott (The Hebrew University of Jerusalem), Isaac Meilijson (Tel Aviv University)
Univ. Basilicata	Henry Wynn (The London School of Economics), Piotr Zwiernik (Berkeley University), Domenico Piccolo (University of Naples"Federico II "), Antonella Bianchino (ISTAT, Basilicata), Brunero Liseo (University of Roma La Sapienza), Peter McCullagh (Chicago University), Antonia Tulino (Bell Laboratories, New Jersey), Enzo Orsingher ((University of Roma La Sapienza))

Teaching activities

PhD courses

- Time series analysis, in English, for the Ph.D. in Modeling and Data Science, Univ. of Turin, a.y. 20/21, 21/22, 22/23
- Statistics for stochastic processes, in English, for the Ph.D. in Modeling and Data Science, Univ. of Turin, a.y. 18/19, 19/20
- Stochastic methods for dynamical systems, for the Ph.D. in Models for Geological Risk, Univ. Basilicata, a.y. 09/10
- Stochastic processes and applications, for the Ph.D. in Mathematics and Computer Science, Univ. Basilicata, a.y. 05/06, 09/10
- Stochastic dynamical systems: numerical methods and data analysis, for the Ph.D. in Methods and Models for Dynamical Systems, Univ. Basilicata, a.y. 04/05, 05/06

Master's Courses

- Geostatistics, in Applications of Geosciences for Resource Management and Mitigation of Natural Risks, Univ. Basilicata, a.y. 11/12
- Data Analysis, in Renewable Energy Engineering and Economics, ENEA - Matera, a.y. 07/08
- Statistics, in Business Administration, Univ. Basilicata, a.y. 06/07
- Principles of Statistical Quality Control, in Expert in International Marketing for the Promotion of Italian Agrifood Productions, Univ. Basilicata, a.y. 1999/2000

Master's Degree Courses

- Advances in Probability, in Mathematics, Univ. Turin, a.y. 16/17, 17/18, 18/19, 19/20, 20/21, 21/22, 22/23
- Statistics for stochastic processes, in English, in Stochastics and Data Science, Univ. Turin, a.y. 16/17, 17/18, 18/19, 19/20, 20/21, 21/22, 22/23
- Reliability of Stochastic Systems and Statistical Quality Control, in Mechanical Engineering, in Mathematics, Univ. Basilicata, a.y. 10/11, 11/12, 12/13, 13/14, 14/15
- Complements of Probability and Statistics, in Mechanical Engineering, Univ. Basilicata, a.y. 03/04, 04/05, 05/06, 06/07, 07/08, 08/09, 09/10
- Laboratory of Experimental Statistical Methodologies, in Experimental Biotechnology, Univ. Basilicata, a.y. 02/03
- Probability and Mathematical Statistics, in Mathematics, Univ. Basilicata, a.y. 05/06, 06/07, 12/13, 13/14, 14/15
- Probability Calculus, in Mechanical Engineering, Univ. Basilicata, a.y. 1999/2000, 00/01

Bachelor's Degree Courses

- Probability Calculus and Statistics, in Mathematics for Finance and Insurance, Univ. of Turin, a.y. 18/19, 19/20, 20/21, 21/22, 22/23 15/16, 16/17, 17/18
- Probability Calculus and Statistics, in Mathematics, Univ. Turin, a.y. 15/16, 16/17, 17/18
- Statistics, in Business Administration, Univ. Basilicata, a.y. 14/15
- Probability and Statistics, in Mechanical Engineering, in Environmental and Territorial Engineering, in Civil Engineering, Univ. Basilicata, a.y. 02/03, 03/04, 04/05, 05/06, 06/07, 07/08
- Probability Calculus, in Mathematics, in Computer Science, Univ. Basilicata, a.y. 05/06, 06/07, 07/08
- Statistics, in Biotechnology, Univ. Basilicata, a.y. 01/02, 02/03
- Applied Mathematics, in Mechanical Engineering, in Environmental and Territorial Engineering, in Civil Engineering, Univ. Basilicata (Potenza and Matera), a.y. 1999/2000, 00/01, 01/02, 02/03
- Numerical Calculus, in Mechanical Engineering, Univ. Basilicata, a.y. 01/02
- Statistics Laboratory, in Mechanical Engineering, in Environmental and Territorial Engineering, in Civil Engineering, Univ. Basilicata. a.y. 1999/00, 00/01

Teacher training courses	○ TEACHING METHODS FOR PROBABILITY AND STATISTICS, Teaching Internship, Univ. Basilicata, a.y. 14/15
	○ STATISTICS LABORATORY, Scientific Degrees (National Project), Univ. Basilicata, a.y. 10/11, 11/12, 12/13, 13/14
	○ PROBABILITY AND STATISTICS, Two-year polyvalent specialization courses ex DPR 970/75, Potenza, a.y. 1999/2000
Seminars	○ Seminars in Biostatistics, for the staff of the Department of Hematology of the San Carlo Hospital of Potenza, Univ. Basilicata, a.y. 09/10.
	○ Laboratory of Statistics in R, training and orientation seminars at High School Galilei, Potenza, 2014
	○ Member of the Interdisciplinary Seminar in Mathematics of the Department of Mathematics, Univ. Basilicata.
	○ Seminars on Probability and Statistics for the course of Mathematics I, Bachelor of Science in Chemistry, Univ. Basilicata, a.y. 95/96.
Exercise classes and Precourses	○ MATHEMATICS, for undergraduate courses in Engineering, Univ. Basilicata, a.y. 1997/98, 01/02, 03/04, 04/05.
	○ MATHEMATICAL ANALYSIS II, for all undergraduate courses in Engineering, Univ. Basilicata, a.y. 1995/96, 1996/97, 1997/98, 1998/99
	○ PROBABILITY, for the undergraduate course in Mechanical Engineering, Univ. Basilicata, a.y. 1998/99
Teaching activities at institutions, research institutes or other universities	○ PROBABILITY AND STATISTICS, teaching materials for training courses of COREP, Consortium for Research and Continuing Education, Turin, Italy, 2007
	○ PROBABILITY II, Bachelor of Science in Economics, Univ. Sannio, a.y. 1999/2000
	○ ANALYSIS OF STATISTICAL QUALITY CONTROL, Lucanian Agency for Development and Innovation in Agriculture, Matera, a.y. 1998/99
	○ MATHEMATICS AND STATISTICS, in English, at Univ. Basilicata as part of the European ENSEMA Acquaculture Managemement Course, Ecole d'Agriculture de Poisy, France, a.y. 1998/99
	○ PROBABILITY AND STATISTICS, Diploma in Logistics and Production Engineering, FIAT (Melfi) in collaboration with Politecnico di Torino, a.y. 98/99
	○ STATISTICS LABORATORY, Operational Program of the Ministry of Labor and Social Security, approved by EEC decision no. 93, 22/07/1993, financed by the European Social Fund, Naples Chamber of Commerce, Univ. of Naples, 1995.
	○ COMPUTATIONAL STATISTICS, Diploma in Statistics, Univ. Naples, a.y. 1995/96.
	○ STATISTICS AND PROBABILITY CALCULUS, STATISTICAL-INFORMATICS LABORATORY. Seminars, Diploma in Statistics, Univ. Naples, a.y. 1994/95.
Internship	○ EUROPEAN YOUTH THINK TANK, Andrea Izzo, 01/03/2023 - 30/04/2023, Turin
	○ COMPUTER SCIENCE ENGINEERING SpA, Ilenia Bellomo, 03/02/2020 - 02/05/2020, Turin
	○ COMPUTER SYSTEMS SRL, Davide Ricossa, 07/05/2018 - 06/11/2018, Turin
	○ CENTER FOR RESEARCH AND TECHNOLOGICAL INNOVATION, RAI, Giulia Alesiani, 13/02/2017 - 12/05/2017, Turin
Referent	Reference letters for various graduate students in Mathematics/Stochastics and Data Science. These include:
	○ LORENZO MODOTTI admitted to the PhD program of the Columbia Business School Academics
	○ FRANCESCA PRIMAVERA admitted to International Bézout Labex, Univ. Paris-Est
	○ GUIDO GAZZANI admitted to the PhD program in Statistics and Operations Research, Univ. of Vienna
	○ UMBERTO DE AMBROGGIO admitted to the PhD program in Mathematical Sciences, Univ. Bath

Thesis advisor About 30 students for the bachelor's degree in Mathematics and for the bachelor's degree in Mathematics for Finance and Insurance at the Univ. of Turin, for the bachelor's degree in Mathematics and the bachelor's degree in Computer Science at Univ. Basilicata; about 20 students for the master's degree in Mathematics and the master's degree in Stochastics and Data Science at Univ. Turin, and for the master's degree in Mathematics at Univ. Basilicata. Thesis in collaboration with research centers or other universities:

- *Long Memory, Persistence, Trends and Mean Reversion of Water Price Time Series*, Rachael Ndindi Kilonzo, Master's Degree in Stochastics and Data Science (Univ. Turin), in collaboration with Prof. Luis Gil-Alaña (Univ. Navarra).
- *Long Memory in Earthquake Time Series*, Lorenzo Cristofaro, Master's Degree in Mathematics (Univ. Turin), in collaboration with Prof. Luis Gil-Alaña (Univ. Navarra).
- *On estimating the parameters of a Variance-Gamma model*, Ylenia Bellomo, Master's Degree in Mathematics (Univ. Turin), in collaboration with Prof. Patrizia Romano (Politecnico di Torino).
- *Volatility Forecasting for bitcoin: a performance of GARCH models*, Ilaria Capelli, Magitrale Stochastics and Data Science, (Univ. Torino) in collaboration with Prof. Siegfried Hörmann (Univ. Graz).
- *Multi-armed stochastic bandits: an optimistic approach in sequential learning*, Guido Gazzani, Master's Degree in Mathematics (Univ. Turin), in collaboration with Prof. Carpentier Alexandra and Prof. Mariucci Ester (Univ. Potsdam).
- *The feminicide in Italy. A statistical analysis using R*, Giulia Alesiani, Master's Degree in Mathematics (Univ. Turin), in collaboration with PhD. Metta Sabino (RAI research center).
- *Infant cry analysis and pain assessment: a R-based study*, Davide Ricossa, Master's Degree in Mathematics (Univ. Turin) in collaboration with Dr. Enrico Baccaglini and Dr. Riccardo Scopigno of Mario Boella Institute and Dr. Emilia Parodi of the Mauriziano Hospital.
- *Air Traffic modeling based on a long memory model*, Rebecca Gili, Bachelor's degree in Mathematics, in collaboration with Prof. Luis Gil-Alaña (Univ. Navarra)
- *The umbral calculus and the compound Poisson distribution*, Matteo Piu, co-advisor, Bachelor's degree in Mathematics at the University of Rome La Sapienza, supervisor Prof. Fabio Spizzichino.
- *Roc Analisys for early identification of Poor Mobilizer in bone marrow transplantation*, Antonella Miglionico, Master's Degree in Mathematics (Univ. Basilicata) in collaboration with Prof. Attilio Olivieri (San Carlo Hospital).
- *Markov chains: applications to geological models and statistical procedures for their validation*, Grazia Vurro Master's Degree in Mathematics (Univ. Basilicata) in collaboration with Prof. Wojciech Nemec (Emeritus, Univ. of Bergen).

Institutional and organizational activities

Memberships

Ongoing
- UMI - Italian Mathematical Union, Research Commission of the PRISMA Group (PRobability In Statistics, Mathematics and Applications), coordinator Prof. Antonio Di Crescenzo (from 2020)
- GNAMPA - National Group for Mathematical Analysis, Probability and their Applications (from 2020)

Past BS - Bernoulli Society, SIS - Italian Statistical Society, IMS - Institute of Mathematical Statistics), ASA – American Statistical Association, ISI – International Institute of Statistics, GNCS - National Group for Scientific Computing (ex GNIM - National Group for Mathematical Computing, ISCS - Italian Society for Computer Simulation

Competition Boards

2021 Selection procedure to fill 1 vacancy for a Researcher with fixed-term employment - Type A - SSD MAT/06, at the Dept. of Statistical Sciences, Univ. Roma La Sapienza

2019	Selection procedure to fill 1 vacancy for an associate professor in 01/A3 (SSD MAT/06) at the Dip. Scienze Statistiche, Univ. Roma La Sapienza.
2017	Selection procedure for the award of two research grants on *Current Problems in Mathematics* at the Department of Mathematics, Univ. of Turin.
2010	Selection procedure to fill 1 vacancy for a position in the administrative-management area, Univ. Basilicata.
2007	Selection procedure to fill 1 vacancy for a researcher - SSD MAT/06 at the Faculty of Mathematics, Physics and Natural Sciences, Univ. Calabria.
2007	Selection procedure for the Award of a UCAL Scholarship, Univ. Basilicata.

Support activities

Univ. Turin — Final examination committee for the undergraduate courses in Mathematics (bachelor's and master's), Stochastics and Data Science, Mathematics for Finance and Insurance. English language assessment committee. Committee for the admission to the master's degree in Mathematics. Committee for the review of the final examination to achieve the bachelor's degree in Mathematics. Assessment committee for TOLCs. Department referent for the UNITA project. Various committees to make evaluations regarding the adequacy of scientific and professional requirements owned by candidates to teaching contracts. Member of the Department Council of Mathematics. Member of the Faculty Board of the degree programs in Mathematics and in Stochastics and Data Science.

Univ. Basilicata — Vice-coordinator of the Research Committee in Mathematics. Vice-coordinator of the Faculty Board of the degree in Mathematics. University Research Evaluation Committee. Analysis of Student Opinions Committee. Committee drafting a new teaching regulation. Equal Opportunity Committee. Joint teacher-student Committee of the Department of Mathematics, Computer Science and Economics. Quality referent in the Faculty Board of Economics. Member of the Council of Active Formative Internship. Review Group of the course program in Mechanical Engineering. Quality Assurance Group of the course program in Mechanical Engineering. Commission for the reorganization of space resulting from the establishment of the Primary Structure Department of Mathematics, Computer Science and Economics. Component polling station for the election of the Director of the Department of Mathematics and Computer Science 2010-2014. Component polling station for the election of the Director of the Department of Mathematics and Computer Science 2010-2014. Component polling station for the election of Researcher Representatives in the Faculty Engineering Councils 1996-2000. Member of the University committee for the reorganization of the degree programs of the degrees in Engineering (3+2). Member of numerous departmental and/or Faculty committees to express evaluations regarding the adequacy of scientific and professional requirements owned by candidates to teaching contracts. Feasibility study for the activation of the degree course in Telecommunications Engineering, Matera. Member of the Council of Faculty of Engineering (then of the Department of Mathematics then of the Department of Mathematics, Computer Science and Economics). Member of the Board of the degree programs in Mathematics, in Economics, in Mechanical Engineering.

Research activities

Main threads
- Construction of first-pass time densities: for correlated Gaussian processes by Monte Carlo methods making use of vector and parallel simulations, for Gaussian-Markovian processes by numerical methods applied to integral equations, for some diffusion processes by polynomial and cumulative approximations, for some time series. Determination of closed forms of the first-pass time density with analysis of asymptotic behavior.

- Symbolic/combinatorial methods (umbral calculus) in probability for Lèvy processes, for spatio-temporal harmonic polynomials with applications in finance, in statistics, for sample moments and their corrections, in computational field for the development of algorithms and programs (in `Maple` and in `R`) for the computation of k-statistics and more generally of U-statistics, for the computation of the multivariate Faà di Bruno formula and its applications in statistics, spectral k-statistics, Wishart random matrices.
- Construction of probabilistic models for: overdispersed or underdispersed data, rainfall data, audiometric data, ethereogeneous ordinal data, financial data.

Publications

Papers on journals

2023   Elvira Di Nardo e Giuseppe Guarino.   On the generation of necklaces and bracelets in R. *Communications in Statistics-Simulation and Computation*, pag. 1–11. Taylor & Francis (On line), 2023.

Elvira Di Nardo, Giuseppe D'Onofrio, e Tommaso Martini. Approximating the first passage time density from data using generalized Laguerre polynomials. *Communications in Nonlinear Science and Numerical Simulation*, vol. 118, paper no. 106991, pag. 1–17. Elsevier, 2023.

2022   Elvira Di Nardo e Giuseppe Guarino. kstatistics: Unbiased estimates of joint cumulant products from the multivariate Faà Di Bruno's formula. *The R Journal*, vol. 14, pag. 208–228. The R Foundation, 2022.

Carmelo Agnese, Giorgio Baiamonte, Elvira Di Nardo, Stefano Ferraris, e Tommaso Martini. Modelling the frequency of interarrival times and rainfall depths with the Poisson Hurwitz-Lerch Zeta distribution. *Fractal and Fractional*, vol. 6, paper no. 509, pag. 1–20. MDPI, 2022.

2021   Elvira Di Nardo, Federico Polito, e Enrico Scalas. A fractional generalization of the Dirichlet distribution and related distributions. *Fractional Calculus and Applied Analysis*, vol. 24, pag. 112–136. De Gruyter, 2021.

Elvira Di Nardo e Giuseppe D'Onofrio.   On the cumulants of the first passage time of the inhomogeneous Geometric Brownian motion. *Mathematics*, vol. 9, paper no. 956, pag. 1–17. MDPI, 2021.

Elvira Di Nardo e Giuseppe D'Onofrio. A cumulant approach for the first-passage-time problem of the Feller square-root process. *Applied Mathematics and Computation*, vol. 391, paper no. 125707, pag. 1–13. Elsevier, 2021.

Dexter Cahoy, Elvira Di Nardo, e Federico Polito.   Flexible models for overdispersed and underdispersed count data. *Statistical Papers*, vol. 62, pag. 2969–2990. Springer, 2021.

2020   Elvira Di Nardo, Marina Marena, e Patrizia Semeraro. On non-linear dependence of multivariate subordinated Lévy processes. *Statistics & Probability Letters*, vol. 166, paper no. 108870, pag. 1–7. Elsevier, 2020.

Elvira Di Nardo. Polynomial traces and elementary symmetric functions in the latent roots of a non-central Wishart matrix. *Journal of Multivariate Analysis*, vol. 179, paper no. 104629, pag. 1–9. Elsevier, 2020.

2019   Davide Ricossa, Enrico Baccaglini, Elvira Di Nardo, Emilia Parodi, e Riccardo Scopigno. On the automatic audio analysis and classification of cry for infant pain assessment. *International Journal of Speech Technology*, vol. 22, pag. 259–269. Springer, 2019.

Elvira Di Nardo e Rosaria Simone. A model-based fuzzy analysis of questionnaires. *Statistical Methods & Applications*, vol. 28, pag. 187–215. Springer, 2019.

2016   Elvira Di Nardo. On photon statistics parametrized by a non-central Wishart random matrix. *Journal of Statistical Planning and Inference*, vol. 169, pag. 1–12. Elsevier, 2016.

Elvira Di Nardo. On multivariable cumulant polynomial sequence with applications. *Journal of Algebraic Statistics*, vol. 71, pag. 72–89. Publishoa, 2016.

2014   Elvira Di Nardo. On a symbolic representation of non-central Wishart random matrices with applications. *Journal of Multivariate Analysis*, vol. 125, pag. 121–135. Elsevier, 2014.

2013   Elvira Di Nardo e Imma Oliva. On some applications of a symbolic representation of non centered Lévy processes. *Communications in Statistics-Theory and Methods*, vol. 42, pag. 3974–3988. Taylor & Francis, 2013.

Elvira Di Nardo e Imma Oliva. A new family of time-space harmonic polynomials with respect to Lévy processes. *Annali di Matematica Pura ed Applicata*, vol. 192, pag. 917–929. Springer, 2013.

Elvira Di Nardo, Peter McCullagh, e Domenico Senato. Natural statistics for spectral samples. *The Annals of Statistics*, vol. 41, pag. 982–1004. Institute of Mathematical Statistics, 2013.

Elvira Di Nardo. On a representation of time space-harmonic polynomials via symbolic Lévy processes. *Scientiae Mathematicae Japonicae*, vol. 76, pag. 99–118. International Society for Mathematical Sciences, 2013.

2012   Elvira Di Nardo e Domenico Senato. Symbolic solutions of some linear recurrences. *Journal of statistical planning and inference*, vol. 142, pag. 423–429. Elsevier, 2012.

Elvira Di Nardo e Imma Oliva. Multivariate Bernoulli and Euler polynomials via Lévy processes. *Applied Mathematics Letters*, vol. 25, pag. 1179–1184. Elsevier, 2012.

Elvira Di Nardo e Imma Oliva. Multivariate time-space harmonic polynomials: a symbolic approach. *Mathematical Methods in Economics and Finance*, vol. 7, pag. 41–56. University of Venice, 2012.

2011   Elvira Di Nardo, Heinrich Niederhausen, e Domenico Senato. A symbolic handling of Sheffer polynomials. *Annali di Matematica Pura ed Applicata*, vol. 190, pag. 489–506. Springer, 2011.

Elvira Di Nardo, Giuseppe Guarino, e Domenico Senato. A new algorithm for computing the multivariate Faà Di Bruno's formula. *Applied mathematics and computation*, vol. 217, pag. 6286–6295. Elsevier, 2011.

2010   Elvira Di Nardo, Pasquale Petrullo, e Domenico Senato. Cumulants and convolutions via Abel polynomials. *European Journal of Combinatorics*, vol. 31, pag. 1792–1804. Elsevier, 2010.

Elvira Di Nardo. A new approach to Sheppard's corrections. *Mathematical methods of statistics*, vol. 19, pag. 151–162. Springer, 2010.

2009   Elvira Di Nardo e Imma Oliva. On the computation of classical, boolean and free cumulants. *Applied mathematics and computation*, vol. 208, pag. 347–354. Elsevier, 2009.

Elvira Di Nardo, Giuseppe Guarino, e Domenico Senato. A new method for fast computing unbiased estimators of cumulants. *Statistics and Computing*, vol. 19, pag. 155–165. Springer, 2009.

2008   Elvira Di Nardo, Giuseppe Guarino, e Domenico Senato. A unifying framework for k-statistics, polykays and their multivariate generalizations. *Bernoulli*, vol. 14, pag. 440 – 468. Bernoulli Society for Mathematical Statistics and Probability, 2008.

Elvira Di Nardo, Giuseppe Guarino, e Domenico Senato. Symbolic computation of moments of sampling distributions. *Computational statistics & data analysis*, vol. 52, pag. 4909–4922. Elsevier, 2008.

Elvira Di Nardo et al. On the first passage time for autoregressive processes. *Scientiae Mathematicae Japonicae*, vol. 67, pag. 137–152. International Society for Mathematical Sciences, 2008.

2007   Elvira Di Nardo, Amelia Giuseppina Nobile, Enrica Pirozzi, e Luigi Maria Ricciardi. Gaussian processes and neuronal modeling. *Natural Computing*, vol. 6, pag. 283–310. Springer, 2007.

2006   Elvira Di Nardo e Domenico Senato. An umbral setting for cumulants and factorial moments. *European Journal of Combinatorics*, vol. 27, pag. 394–413. Elsevier, 2006.

Elvira Di Nardo e Domenico Senato. A symbolic method for k-statistics. *Applied mathematics letters*, vol. 19, pag. 968–975. Elsevier, 2006.

Antonio Di Crescenzo, Elvira Di Nardo, e Luigi Maria Ricciardi. On certain bounds for first-crossing-time probabilities of a jump-diffusion process. *Scientiae Mathematicae japonicae*, vol. 64, pag. 449–460. International Society for Mathematical Sciences, 2006.

2005   Elvira Di Nardo. On the connection between orthant probabilities and the first passage time problem. *Journal of Statistical Computation and Simulation*, vol. 75, pag. 437–445. Taylor & Francis, 2005.

Antonio Di Crescenzo, Elvira Di Nardo, e Luigi Maria Ricciardi. Simulation of first-passage times for alternating Brownian motions. *Methodology and Computing in Applied Probability*, vol. 7, pag. 161–181. Springer, 2005.

2003   Elvira Di Nardo, Amelia Giuseppina Nobile, Enrica Pirozzi, e Luigi Maria Ricciardi. Towards the modeling of neuronal firing by gaussian processes. *Scientiae Mathematicae japonicae*, vol. 8, pag. 497–506. International Society for Mathematical Sciences, 2003.

Elvira Di Nardo, Amelia Giuseppina Nobile, Enrica Pirozzi, e Luigi Maria Ricciardi. On the asymptotic behavior of first passage time densities for stationary gaussian processes and varying boundaries. *Methodology and Computing in Applied Probability*, vol. 5, pag. 211–233. Springer, 2003.

2002   Elvira Di Nardo. On first-passage problem for a non-singular gaussian discrete-time series. *Quaderni di Statistica*, vol. 4, pag. 1–20. Liguori, 2002.

Aniello Buonocore, Antonio Di Crescenzo, e Elvira Di Nardo. Input–output behaviour of a model neuron with alternating drift. *BioSystems*, vol. 67, pag. 27–34. Elsevier, 2002.

2001   Elvira Di Nardo, Amelia Giuseppina Nobile, Enrica Pirozzi, e Luigi Maria Ricciardi. A computational approach to first-passage-time problems for gauss–markov processes. *Advances in Applied Probability*, vol. 33, pag. 453–482. Cambridge University Press, 2001.

2000   Di Crescenzo Antonio, Elvira Di Nardo, Amelia Giuseppina Nobile, Enrica Pirozzi, e Luigi Maria Ricciardi. On some computational results for single neurons' activity modeling. *BioSystems*, vol. 58, pag. 19–26. Elsevier, 2000.

1998   Elvira Di Nardo, Amelia Giuseppina Nobile, Enrica Pirozzi, e Luigi Maria Ricciardi. On a non-markov neuronal model and its approximations. *BioSystems*, vol. 48, pag. 29–35. Elsevier, 1998.

1997   Elvira Di Nardo e Enrica Pirozzi. On the estimation of first passage time densities for stationary normal processes. *Frontiers in Artificial intelligence and applications*, vol. 41, pag. 383–387. IOS Press, 1997.

1996   Maria Morandi Cecchi e Elvira Di Nardo. The modified bordering method to evaluate eigenvalues and eigenvectors of normal matrices. *Numerical Algorithms*, vol. 11, pag. 285–309. Springer, 1996.

Elvira Di Nardo, Enrica Pirozzi, e Silvana Rinaldi. On FPT densities of normal processes with an oscillatory covariance. *Rendiconto dell'Accademia delle Scienze fisiche e matematiche*, vol. 63, pag. 179–192. Liguori, 1996.

1995   Elvira Di Nardo e Enrica Pirozzi. Algorithm for data sample representation by histograms with unequal cell widths. *Cybernetics and System*, vol. 26, pag. 349–378. Taylor & Francis, 1995.

Invited monographs or special issues

2015   Elisabetta Barletta e Elvira Di Nardo. Topics on stochastic processes with applications. *Lecture notes of Seminario Interdisciplinare di Matematica*, vol. 12, pag. 1–288. Graficom, 2015.

2012   Elvira Di Nardo. Symbolic calculus in mathematical statistics: a review. *Séminaire Lotharingien de Combinatoire*, vol. 67, pag. 1–72. Free open source at `https://www.mat.univie.ac.at/~slc/`, 2012.

Articles on books or special issues

2015 Elvira Di Nardo, *On some applications of a generalization of Laguerre polynomials in statistics.*, In Lecture Notes of Seminario Interdisciplinare di Matematica, vol. 12, pages 91–130, Graficom, 2015.

2009 Elvira Di Nardo e Domenico Senato, *The Eleventh and Twelveth Problems of Rota's Fubini Lectures: from Cumulants to Free Probability Theory: Invited Chapter*, In From Combinatorics to Philosophy: the Legacy of G.C. Rota, Springer-Verlag, (Ed. Damiani, E., D'Antona, O., Marra, V., Palombi, F.), pag. 91–130 (su invito), 2009.

Elvira Di Nardo, Heinrich Niederhausen, e Domenico Senato, *The classical umbral calculus: Sheffer sequences.*, In Lecture Notes of Seminario Interdisciplinare di Matematica, vol. 8, pag. 101–130 (su invito), Graficom, 2009.

2001 Elvira Di Nardo e Domenico Senato, *Umbral nature of the Poisson random variables*, In Algebraic Combinatorics and Computer science: a tribute to Gian-Carlo Rota, Springer Italia (Ed. Crapo,H. Senato, D.), pag. 245–266, 2009.

Papers in science journals

2014 Elvira Di Nardo e Brunero Liseo. Ditelo con un grafico. *Induzioni*, vol. 48, pag. 51–72. Fabrizio Serra, 2014.

2013 Elvira Di Nardo. Cattive abitudini, ovvero quando l'intuizione prende il posto della conoscenza. *Induzioni*, vol. 45, pag. 22–25. Fabrizio Serra, 2013.

2012 Elvira Di Nardo e Brunero Liseo. Il lato oscuro dell'incertezza e i mille colori delle regole del caso: riflessioni e materiali per la divulgazione della probabilità. *Induzioni*, vol. 44, pag. 93–118. Fabrizio Serra, 2012.

2009 Elvira Di Nardo e Brunero Liseo. L'arte di raccontare bugie con l'ausilio dei grafici e non solo. *Induzioni*, vol. 38, pag. 75–96. Fabrizio Serra, 2009.

Papers on journals (collaborations with groups for data analysis)

2018 Prieto J. D., Trotta V. , Di Nardo E., Forlano P., Fanti P., Battaglia D. Intraguild predation between macrolophus pygmaeus and aphidius ervi. *Bulletin of Insectology*, vol. 7, pag. 113–120. Alma Mater Studiorum - Università di Bologna, 2018.

Olivieri J., Attolico I., Nuccorini R., Pascale S.P., Chiarucci M., Poiani M., Corradini P., Farina L., Gaidano G., Nassi L., Sica S., Piccirillo N., Pioltelli E., Martino M., Moscato T., Pini M., Zallio F., Ciceri F., Marktel S., Mengarelli A., Musto P., Capria S., Merli F., Codeluppi K., Mele G., Lanza F., Specchia G., Pastore D., Milone G., Saraceni F., Di Nardo E., Perseghin P., Olivieri A. Predicting failure of hematopoietic stem cell mobilization before it starts: the predicted poor mobilizer (ppm) score. *Bone Marrow Transplantation*, vol. 53, pag. 461–473. Nature Publishing Group UK London, 2018.

2016 Ostuni A., Cuviello F., Salvia A.M., D'Auria F., Statuto T., Di Nardo E., Miglionico R., Carretta V., Musto P., Bisaccia F. Immunochemical characterization of the specific sequence of urg7 protein. *Journal of Biomolecular Research & Therapeutics*, vol. 5, pag. 146–150. Walshmedicalmedia, UK, 2016.

2012 Attolico I., Di Nardo E., Nuccorini R., Chiarucci M., Nassi L., Mengarelli A., Capria S., Ciceri F., Martino M., Piccirillo N., Pascale S., Pizzuti M., Olivieri A. Validation in a multicenter setting of gitmo criteria for identification of the poor mobilizer in multiple myeloma and lymphoma patients: preliminary analysis on 312 patients. *Biology of Bone and Marrow Transplantation*, vol. 18, pag. 241–249. Elsevier, 2012.

Papers on Conference Proceedings

2023   Liyew C.M., Meo R., Di Nardo E., Ferraris S. Multivariate time series evapotranspiration forecasting using machine learning techniques. In *Artificial Intelligence and Agents, Proceedings of the 38th ACM/SIGAPP Symposium on Applied Computing, Tallinn, Estonia, March 27- 31*, pag. 377–380. ACM, 2023.

2016   Di Nardo E., Simone R. CUB models: a preliminary fuzzy approach to heterogeneity. In *Proceedings of the 48th scientific meeting of the Italian Statistical Society*, pag. 1–10. 2016.

       Coluzzi S., Introcaso T. , Iallorenzi P., Di Nardo E., Pascale S.P., Nuccorini R., Attolico I., Matturro A., Amendola A., Cimminiello M., Vertone D., Filardi N., Pizzuti M. Post induction WT1 values and wt1 onset/post induction ratio are useful to stratify acute myeloid leukemia patients. *Haematologica*, vol. 101, pag. 94. Ferrata-Storti Foundation, 2016.

2015   Coluzzi S., Introcaso T., Iallorenzi P., Di Nardo E., Pascale SP., Nuccorini R., Attolico I., Matturro A., Amendola A., Cimminiello M., Vertone D., Filardi N., Pizzuti M. Cumulative analysis of post induction WT1 values and WT1 onset/post induction ratio as an useful tool for a risk stratification of acute myeloid leukemia patients. *Haematologica*, vol. 100, pag. 139. Ferrata-Storti Foundation, 2015.

       Attolico. I., Olivieri J., Nuccorini R., Pascale SP, Chiarucci M., Poiani M., Gozzer M. Capria S., Mele G., Melpignano A., Perseghin P., Pioltelli P., Martino M., Moscato T., Musto P., Pietrantuono G., Corradini P., Farina L., Nassi L., Casaluci GM, Di Marco A., Spadaro A., Gumenyuku S., Marchesi F., Lanza F., Brambilla P., Pini M., Zallio F., Marktel S., Gattillo S., Sica S., Ausoni G., Merli F., Codeluppi K., Specchia G., Pastore D., Pizzuti M., Di Nardo E., Olivieri A. . A refined composite clinical score for the early identification of the predicted poor mobilizers (PM): a GITMO analysis. *Bone Marrow Transplantation*, vol. 50, pag. 329. Nature Publishing Group UK London, 2015.

2014   Attolico I., Di Nardo E., Nuccorini R., Chiarucci M., Nassi L., Mengarelli A., Capria S., Ciceri F., Martino M., Piccirillo N., Pascale S., Pizzuti M., Olivieri A. Validation in a multicenter setting of GITMO criteria for identification of the poor mobilizer in multiple myeloma and lymphoma patients: preliminary analysis on 312 patients. *Bone Marrow Transplantation*, vol. 49, pag. 48. Nature Publishing Group UK London, 2014.

2011   Di Nardo E., Oliva I. On a symbolic version of multivariate Lévy processes. In *AIP Conference Proceedings*, vol. 1389, pag. 345–348. American Institute of Physics, 2011.

2005   Di Crescenzo A., Di Nardo E. Ricciardi L.M. Evaluation of neuronal firing densities via simulation of a jump-diffusion process. In *Mechanisms, Symbols, and Models Underlying Cognition: First International Work-Conference on the Interplay Between Natural and Artificial Computation, IWINAC 2005, Las Palmas, Canary Islands, Spain, June 15-18, 2005, Proceedings, Part I 1*, vol. 3561, pag. 166–175. Springer, 2005.

2003   Di Nardo E., Nobile A.G., Pirozzi E., Ricciardi L.M. Computational methods for the evaluation of neuron's firing densities. In *Computer Aided Systems Theory-EUROCAST 2003: 9th International Workshop on Computer Aided Systems Theory Las Palmas de Gran Canaria, Spain, February 24-28, 2003 Revised Selected Papers 9*, vol. 2809, pag. 394–403. Springer, 2003.

2002   Di Nardo E., Nobile A.G., Pirozzi E., Ricciardi L.M. Gaussian processes and neural modeling: an asymptotic analysis. In *Cybernetics and Systems 2002*, vol. 1, pag. 313–318. Austrian Society for Cybernetics Studies, 2002.

       Di Nardo E., Nobile A.G., Pirozzi E., Ricciardi L.M. Computer-aided simulations of gaussian processes and related asymptotic properties. In *Computer Aided Systems Theory—EUROCAST 2001: A Selection of Papers from the 8th International Workshop on Computer Aided Systems Theory Las Palmas de Gran Canaria, Spain, February 19–23, 2001 Revised Papers*, vol. 2178, pag. 67–78. Springer, 2002.

2000 Di Nardo E., Pirozzi E. Ricciardi L.M., Rinaldi S. First passage time densities evaluation for simulated gaussian process. In *Cybernetics and Systems 2000*, vol. 2, pag. 301–306. Austrian Society for Cybernetic Studies, 2000.

Di Nardo E., Nobile A.G., Pirozzi E., Ricciardi L.M., Rinaldi S. Simulation of gaussian processes and first passage time densities evaluation. In *Computer Aided Systems Theory-EUROCAST'99: A Selection of Papers from the 7th International Workshop on Computer Aided Systems Theory, Vienna, Austria, September 29-October 2, 1999 Proceedings 7*, vol. 1798, pag. 319–333. Springer, 2000.

1997 Di Nardo E., Pirozzi E., Ricciardi L.M., Rinaldi S. Vectorized simulations of normal processes for first crossing-time problems. In *Computer Aided Systems Theory—EUROCAST'97: A Selection of Papers from the 6th International Workshop on Computer Aided Systems Theory Las Palmas de Gran Canaria, Spain, February 24–28, 1997 Proceedings 6*, vol. 1333, pag. 177–188. Springer, 1997.

1996 Di Nardo, E., Pirozzi E. The RANDOM algorithm and its use for FPT densities evaluations. In *Atti del III Convegno Nazionale SIMAI*, pag. 61–63. SIMAI, 1996.

Di Nardo E., Pirozzi E. On the grouping rule for random samples. In *Advanced Mathematical Tools in Metrology II: A Selection of Papers from the International Workshop on Advanced Mathematical Tools in Metrology, Oxford, UK, September 1995 Proceedings*, vol. 40, pag. 248–253. World Scientific Publishing, 1996.

Software

2022 Elvira Di Nardo e Giuseppe Guarino, *Necklaces: Necklaces and Bracelets*, In `https://CRAN.R-project.org/package=Necklaces`, R package version 1.0, 2022.

Elvira Di Nardo e Giuseppe Guarino, *kStatistics: Unbiased Estimators for Cumulant Products and Faà Di Bruno's Formula*, In `https://CRAN.R-project.org/package=kStatistics`, R package version 2.1.1, 2022.

2014 Elvira Di Nardo e Giuseppe Guarino, *Spectral k-statistics*, In `https://www.maplesoft.com/Applications/Detail.aspx?id=153618`, Waterloo Maple Inc, v. 12, 2014.

2013 Elvira Di Nardo e Giuseppe Guarino, *A new algorithm for computing moments of complex non-central Wishart distributions*, In `https://www.maplesoft.com/Applications/Detail.aspx?id=143890`, Waterloo Maple Inc, v. 12, 2013.

2011 Elvira Di Nardo, Giuseppe Gaurino e Domenico Senato, *A new algorithm for computing the multivariate Faà di Bruno's formula*, In `https://www.maplesoft.com/Applications/Detail.aspx?id=101396`, Waterloo Maple Inc, v. 12, 2011.

2010 Elvira Di Nardo e Giuseppe Gaurino, *A new approach to Sheppard's corrections*, In `https://www.maplesoft.com/Applications/Detail.aspx?id=59515`,Waterloo Maple Inc 2015, 2010.

2009 Elvira Di Nardo, Giuseppe Gaurino e Domenico Senato, *Fast algorithms for k-statistics, polykays and their multivariate generalizations*, In `https://www.maplesoft.com/Applications/Detail.aspx?id=33041`, Waterloo Maple Inc, v. 12, 2009.

Elvira Di Nardo, Giuseppe Gaurino e Domenico Senato, *A Maple algorithm for k-statistics, polykays and their multivariate generalizations*, In `https://www.maplesoft.com/Applications/Detail.aspx?id=33040`, Waterloo Maple Inc, v. 12, 2009.

Elvira Di Nardo, Giuseppe Gaurino e Domenico Senato, *Multiset subdivisions*, In `https://www.maplesoft.com/Applications/Detail.aspx?id=33039`, Waterloo Maple Inc, v. 12, 2009.

More

2003 Elvira Di Nardo, Nobile Amelia Giuseppina, Pirozzi Enrica, e Ricciardi Luigi Maria. Simulations of gaussian processes for neuronal modeling. In Voli M. Coluccia P., editor, *Science and Supercomputing at CINECA, Report 2003*, pag. 375–381. CINECA, Bologna, 2003.

2001   Elvira Di Nardo, Nobile Amelia Giuseppina, Pirozzi Enrica, e Ricciardi Luigi Maria. Parallel simulations in fpt problems for gaussian processes. In Voli M. Garofalo F., Moretti M., editor, *Science and Supercomputing at CINECA, Report 2001*, pag. 405–412. CINECA, Bologna, 2001.

1998   Elvira Di Nardo e Sorin Dragomir. *Analisi Matematica II, Esercitazioni*. pag. 1–303. Edizioni Ermes, 1998.

1996   Elvira Di Nardo. *Eigenvalues for symmetric matrices and statistical-computational problems for correlated normal processes*. Phd thesis (in italian), Università degli Studi di Napoli, 1996.

Elvira Di Nardo. Convergence of distributions with applications in statistics. *Summer course notebooks in statistics and calculus of probability*, vol. 8, pag. 1–65. Istituto di Metodi Quantitativi, Università Bocconi, 1996.