Gianluca Vinti

Scientific, Didactic, and Academic Curriculum

Academic Career

1986	Degree in Mathematics
1986	Awarded two CNR scholarships and one from the National Institute of Advanced Mathematics (INdAM)
1991	University Researcher in Mathematical Analysis (MAT/05) at the Faculty of Engineering, University of Perugia, affiliated with the Department of Mathematics and Computer Science of the same University
1992	Associate Professor of Mathematical Analysis (MAT/05) at the Faculty of Engineering, University of Palermo, affiliated with the Department of Mathematics and Computer Science of the same University
1993-2001	Associate Professor of Mathematical Analysis (MAT/05) at the Faculty of Engineering, University of Perugia, affiliated with the Department of Mathematics and Computer Science of the same University
2001 -	Full Professor of Mathematical Analysis (formerly MAT/05, MATH-03/A) at the Faculty of Engineering, University of Perugia, and since 2014 at the Department of Mathematics and Computer Science of the same University

Academic Appointments

2003 - 2005	Coordinator of the first two-year cycle (Biennio) of the Faculty of Engineering
2005 - 2013	Director of the Department of Mathematics and Computer Science of the University of Perugia, re-confirmed for the four-year period 2009-2012 and extended until the activation of the new Department of Mathematics and Computer Science
2006 - 2024	Member of the Scientific Commission of the Italian Mathematical Union (U.M.I.) for the three-year periods 2006/2008, 2009/2011, 2012/2014, 2015/2017, 2018/2020, 2021/2023
2010 - 2014	President of the Permanent Conference of Directors and Secretaries of Departments and Centers with Budget Autonomy of the University of Perugia
2013 - 2021	Member of the Scientific Council of GNAMPA (I.N.d.A.M.)
2013 -	Coordinator for mathematics of the Didactic Hub (Perugia branch) of the Accademia Nazionale dei Lincei.
2013 -	Member of the PhD Committee in Mathematics, Computer Science, Statistics in Consortium (C.I.A.F.M.) between the University of Perugia, the University of Florence, and I.N.d.A.M. until 2023 (National Institute of Advanced Mathematics)

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2014 - 2019	Director of the newly established Department of Mathematics and Computer Science (according to Law 240) of the University of Perugia for the remaining part of the three-year period 1/11/2013-31/10/2016 and renewed for the three-year period 1/11/2016-31/10/2019
2014 - 2019	Representative for the University of Perugia of the Interuniversity Consortium for Advanced Training in Mathematics (C.I.A.F.M.)
2014 -2019	Member of the Academic Senate of the University of Perugia
2014-2019	Member of the Research Commission and the Resources Commission of the Academic Senate
2016-2019	Member of the Regional Technical Table on the Digital Agenda
2017 - 2018	Delegate for the coordination of the University commission PRO3 Project - actions B2 and B3
2019 - 2024	Director of the Lamberto Cesari Interdepartmental Research Center
2019 -	Member of the Department Board of the Department of Mathematics and Computer Science of the University of Perugia
2019 -	Head of the Imaging and Computer Vision Laboratory at the University of Perugia
2021 -	Scientific Advisor of "Neural Research"
2021 - 2024	President of the "Scientific Meetings" Commission of the Italian Mathematical Union
2025	Auditor of the Italian Mathematical Union
2025	Member of the "Scientific Meetings" Commission of the Italian Mathematical Union
2025 - 2028	Director of the Department of Mathematics and Computer Science at the University of Perugia

Other Appointments

2001 – 2013	Delegate for Orientation of the Faculty of Engineering of the University of Perugia and Faculty Erasmus Delegate
2003–2013	Member of the PhD Committee in Mathematics and Computer Science for Information Processing and Representation of Information and Knowledge
2008–2013	Member of the (elected) Board of the Faculty of Engineering

Teaching Activities for the Academic Year 2025-2026

He holds, by tenure, the following courses at the University of Perugia: Calculus I for the Civil Engineering degree program (9 ECTS), Calculus I for the Computer and Electronic Engineering degree program (9 ECTS), Applied Image and Signal Processing (6 ECTS) for the Master's degree programs in Computer Science and Mathematics, and Approximation Theory (9 ECTS) for the Master's degree program in Mathematics.

Advisor for Master's and PhD theses

He has supervised several master's theses in mathematics.
He has supervised the following PhD student of the PhD course in Mathematics of the University of Florence, in consortium with the Universities of Cagliari, Modena, Perugia and Siena:

1999 – 2002	Sarah Sciamannini

Moreover he has also supervised the following PhD student of the PhD course in Mathematics and Computer Science for Information Processing and Representation of Information and Knowledge at the University of Perugia:

2014 – 2016	Anna Maria Minotti

Finally, he has supervised the following PhD students of the PhD course in Mathematics, Computer Science, Statistics in Consortium (C.I.A.F.M.) between the University of Perugia, the University of Florence, and I.N.d.A.M. (until 2023):

2017 – 2020 Marco Seracini
2020 – 2023 Michele Piconi
2020 – 2023 Mariarosaria Natale
2021 – 2024 Arianna Travaglini
2022 – 2024 Eleonora De Angelis

He is currently the supervisor of the following PhD students of the above PhD course:

2022 – 2025 Lorenzo Boccali
2024 – 2026 Lucrezia Rinelli
2024 – 2026 Chiara Darielli (co-supervisor)

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Editorial Activities

Member of the Editorial Board of the following international scientific journals: Dolomites Research Notes on Approximation, Open Mathematics, Sampling Theory, Signal Processing, and Data Analysis (STSD), Mathematical Foundation of Computing, Open Signal Processing, General Mathematics, Demonstratio Mathematica, Symmetry, Constructive Mathematical Analysis and other journals with an international editorial board. Reviewer for several international scientific journals.

Scientific Associations

He is a member of the Italian Mathematical Union, the National Group for Mathematical Analysis, Probability and their Applications (GNAMPA) of the National Institute of Advanced Mathematics (INdAM), the RITA network (Research ITalian network on Approximation) and the UMI group "Approximation Theory and Applications" (TAA).

Organization of Conferences and Workshops

He has organized several congresses and conferences and was President of the Organizing Committee of the Joint International Meeting Unione Matematica Italiana - Deutsche Mathematiker Vereinigung (U.M.I.-D.M.V.) held in Perugia from June 18 to 22, 2007. Founding member of the "Lamberto Cesari Interfaculty Study Center". He also organized the "SIAM Minisymposium on Multivariate Signal Analysis and Inverse Problems, I" session at the American Mathematical Society (AMS) Congress held in San Antonio, Texas (U.S.A.) in January 2015 and the "Mathematical Image Processing" session at the GAMM2015 - 86th Annual Meeting of the International Association of Applied Mathematics and Mechanics, held in Lecce in March 2015. In June 2016, he was one of the organizers of the GNAMPA Congress held in Montecatini Terme, of the "Real Analysis and Functional Inequalities" session (together with Prof. Paolo Salani) at the XXI UMI Congress, Pavia, September 2-7, 2019, and of the international conference MATA2020 held in Perugia from January 16 to 18, 2020. Member of the scientific committee of the conference "Dante and the Quadrivium of Sciences" (Celebrations for the 700th anniversary of Dante Alighieri's death), Sapienza University of Rome, April 14, 2021, Rome, organizer (with C. Bardaro, P. Pucci and A.R.Sambucini) of the "Domenico Candeloro Memorial Day", May 10, 2021, online and with F. dell'Accio, S. De Marchi, C. Conti and M. Campiti, of the First Working Day of the UMI-TAA Group, May 14, 2021, online. Organizer (with A. Acu, L. Bialas-Ciez, S. De Marchi) of the Minisymposium: "Approximation Theory and Applications" (MS-ID78), 8th European Congress of Mathematics (ECM), June 20-26, 2021, Portoroz (Slovenia) and with U. Gianazza, M.R. Lancia, P. Marcellini, of "Advanced in Evolution Equations and Applications" (for Prof. V. Vespri's 61st birthday), September 24-25, 2021, Pavia. He has also organized the activities of the Lincei Pole, Perugia section (as responsible) from 2013 to date, and, as coordinator of the UMI Scientific Colloquia Commission and from 2021 to 2024 of the Scientific Meetings Commission, he has organized numerous scientific events held in the years 2019-2020-2021 and the entire program of the UMI Scientific Meetings from 2022 to 2024. He was a member of the organizing committee and the scientific committee of the Workshop "Mathematical Methods for Image Processing and Understanding (MMIPU2023)" of the "23rd International Conference

on Computational Science and Its Applications" Athens, Greece, held from July 3 to 6, 2023, and of the same workshop (MMIPU2025) held in Istanbul from June 30 to July 3, 2025. He organized the International Conference on Approximation Theory and Applications, within the UMI-T.A.A. Group - Approximation Theory and Applications held in Cetraro from June 18 to 22, 2023, the "Two Nonlinear Days" conference held in Perugia from May 17 to 18, 2024 for the retirement of Prof. P. Pucci, was a member of the scientific committee of the "15th International Conference on Approximation Theory and its Applications", held in Sibiu from July 17 to 20, 2024 and was Director of the CIME school "Modern Perspectives in Approximation Theory: Graphs, Networks, quasi-interpolation and Sampling Theory", held in Cetraro from July 21 to 25, 2025.

Project Activities

Below are the funded projects for which he is and has been coordinator:

- GNAMPA (I.N.d.A.M.) Project 2005 titled: "Approximation with integral operators and Applications to Signal Processing".
- FIXO-Action 3 Project 2006 titled: "Management and processing of Biomedical Images" which involved collaboration between Universities and Companies (Universities of Camerino, Perugia, Siena and Sassari, Perugia Hospital, ASUR Marche, INRCA Ancona (research center), Medicad s.r.l-spin-off of the University of Palermo).
- GNAMPA (I.N.d.A.M.) Project 2007 titled: "Approximation with integral and discrete operators and applications to the theory of discontinuous signals (BV or in Orlicz Spaces) and to semigroup theory" Operating units of Perugia (lead) and Lecce.
- Fondazione Cassa di Risparmio di Perugia Project 2008 titled: "Methods of Mathematical Analysis and Discrete Geometry and applications to signal and image processing, optical communication systems, and cryptography".
- Fondazione Cassa di Risparmio di Perugia Project 2009 titled: "Mathematical and Computer Science Methods with applications to Mathematical Economics, Mathematical Physics, Communication Management Networks, and Artificial Intelligence".
- Fondazione Cassa di Risparmio di Perugia Project 2010 titled: "Theory and Methods of Mathematical Analysis, Geometry, and Computer Science for Information Management".
- PON Project 2011 (National Operational Programs) (third parties) for the part related to: "Approximation models and techniques for social network analysis".
- GNAMPA (I.N.d.A.M.) Project 2012 titled: "Operator Theory Methods for Approximation Problems and Evolution Equations and their Applications" Operating units of Perugia (lead) and Bari.
- European project MIMA: Mathematics in the Making (Project Manager) - Lifelong Learning Program of the European Union Project n. 539872 - LLP - 1 - 2013 - IT - COMENIUS - CMP Agreement n. 2013 - 3073 / 001 - 001; lead unit: University of Perugia.
- Fondazione Cassa di Risparmio di Perugia Project 2015 co-funded titled: "Algorithms for the improvement of thermographic images for the study of the influence of thermal bridges in the energy analysis of buildings".
- Fondazione Cassa di Risparmio di Perugia Project 2017 co-funded titled: " Mathematical algorithms for improving acoustic images obtained from industrial sources using beamforming techniques".
- Fondazione Cassa di Risparmio di Perugia Project 2018 co-funded titled: " Artificial Intelligence Methods and Processes for the development of a bank of medical images for diagnostic purposes - B.I.M.".
- CARE Project "A regional information system for Heart Failure and Vascular Diseases" (departmental project contact person) - European Union, European Regional Development Fund.
- Fondazione Cassa di Risparmio di Perugia Project 2019 co-funded titled: " Non-invasive Imaging Methods using sequential OCT angiography for the study of degenerative retinopathies in the Elderly (M.I.R.A.).
- Me.T.A.B.I.-2020 Project "Approximation Theory Methods and their applications in Biomedical and Industrial fields" (departmental project).
- GNAMPA INdAM 2022 Project: "Image enhancement and segmentation using sampling-type operators and variational methods".
- Coordinator of a memorandum of understanding between the Department of Mathematics and Computer

Science and Neulos s.r.l., one between the Department of Mathematics and Computer Science and Neural Research, and between the Department of Mathematics and Computer Science and the Department of Surgical and Biomedical Sciences.
- He has also coordinated several Departmental research projects.
- Responsible for a bilateral scientific cooperation agreement between the University of Perugia and Adam Mickiewicz University in Poznan (Poland).
- Responsible for several Erasmus mobility agreements (staff and student mobility).

He has participated in several funded PRIN projects in collaboration with other Italian Universities in the field of Real Analysis, several CNR research projects, and bilateral Italy-Germany and Italy-Morocco projects that involved scientific exchanges between researchers.

He currently participates in the following projects:

- Me.T.A.B.I.- 2020 Project "Approximation Theory Methods and their applications in Biomedical and Industrial fields" (departmental project).
- Member of the European project: Innovation, digitalization and sustainability for the diffuse economy in Central Italy - VITALITY (2022) - Spoke 9. Nanostructured materials and devices.
- PRIN 2022 Project: "EXPANSION - EXPlainable AI through high eNergy physicS for medical Imaging in ONcology" funded by the European Union under the Italian National Recovery and Resilience Plan (NRRP) of NextGenerationEU, under the MUR (Project Code: 2022Z3BT9F, CUP: J53D23002530006).
- Project: "MiRA: Mixed Reality and AI Methodologies for Immersive Robotics", University of Perugia, University Research Fund 2022.
- Fondazione Cassa di Risparmio 2023 Project: The services pharmacy: a tool for enhancing socio-welfare and diagnostic needs at the territorial level in partnership with the National Health Service (with particular reference to that of the Usl Umbria 1).
- Project "BOOST - Boosted Objects and Oriented-Space Topologies" 2023 within "Development of algorithms for boosted topologies at LHC/FCC, in the context of the activities of the Spoke2 in ICSC".
- University Common Laboratory Project: member since its foundation of the C-LAB Mechatronics sector.
- Project "Umbria Digital Data – UDD" 2024, Digital Innovation Hub of the European EDIH network, approved for funding by the Ministry for Made in Italy under Mission 4, Component 2, Investment 2.3 of the PNRR.

Project Evaluation Activities

- He is part of the MIUR scientific expert register D.D. n. 79/2010/Ric. and its renewal and has joined the MIUR reviewer register;
- Evaluator of regional research projects
- Referee and Rapporteur of MIUR SIR projects.
- Evaluator of FISR projects and member of the MUR evaluation panel.
- Evaluator of FRG projects of the American University of Sharjah, United Arab Emirates.
- Evaluator of FRA 2022 projects of the University of Naples Federico II, Italy.
- Evaluator of SNSF Spark 2024 projects, Swiss National Science Foundation.

Member of Competition Committees

He has been a member of competition committees for:
1) admission and awarding of the PhD title in Mathematics (University of Florence - twice, University of Pisa, University of Salento (Lecce), University of Padua, University of Catania, University Federico II of Naples);
2) for fixed-term university researcher (RTD a) and B)) - Naples Federico II, Sapienza University of Rome, Naples Parthenope, Perugia;
3) for university researcher (University of Messina - twice, University of Turin, University Federico II of Naples

and University of Perugia (2 times as internal member));
4) for associate professor (Salerno, Catania, Naples Federico II, Naples Parthenope, Perugia etc.).
5) for full professor several times (the last ones being Palermo and Salerno).
6) president of competition committees for research grants and research fellowships.

Scientific Activity

Locally, he is part of a research group, composed of 3 Full Professors, 4 Associate Professors, 1 Researcher, 4 Postdocs, 2 PhD students, which deals with topics concerning Real Analysis, Functional Analysis, Integration Theory, Theory of integral, discrete and semi-discrete operators, and Approximation Theory and its applications to Image and Signal Processing, with implications in both medical and engineering fields. In particular, regarding medical applications, the research has focused on the study and development of methodologies for processing and reconstructing CT images for the diagnosis of vascular pathologies and for segmentation and classification in renal tumor diagnosis; Angio-OCT images for the diagnosis of retinopathies and maculopathies; and MRI images for the investigation of cerebral pathologies, in particular for the early diagnosis of Alzheimer's disease. Regarding engineering applications, the research activity uses image processing and reconstruction techniques for studying the seismic vulnerability of buildings through texture analysis, evaluating their energy efficiency through the study of so-called thermal bridges and, finally, identifying and localizing acoustic sources, with particular reference to acoustic bridges. The applied research has been developed in collaboration with departments of the University of Perugia, in particular the Department of Civil and Environmental Engineering (DICA), Engineering (DI), Medicine and Surgery, and with the Perugia Hospital (Radiology and Medical Physics sections), as well as with the Department of Electrical Engineering of the Warsaw University of Technology (Poland), the Department of Pathomorphology of the Military Institute of Medicine, Warsaw (Poland) and the Department of Vascular and Endovascular Surgery of the Military Institute of Medicine, Warsaw (Poland).
Responsible for research grants and scholarships, including the latest ones concerning approximation problems for sampling-type operators and applications to signal and image reconstruction.

He has been invited to give approximately 150 plenary lectures at conferences and seminars at various Universities and Research Centers, including: Aachen (Germany), Będlewo (Poland), Częstochowa (Poland), Cologne (Germany), Kraków (Poland), Madrid (Spain), Orleans (France), Poznan (Poland), S. Francisco (USA), Toronto (Canada), Thessaloniki (Greece), Trondheim (Norway), York (U.K.), Cluj-Napoca (Romania), Sibiu (Romania), Abu Dhabi (United Arab Emirates), Konya (Turkey), as well as major Italian Universities (Florence, Palermo, Trento, Rome Tre, Naples, Salerno, Bari, Cosenza, Potenza, Lecce, Cassino, Udine, Caserta, Catania, Messina, etc.) and has given numerous presentations at national and international congresses and conferences.

He has taught courses for the PhD in Mathematics at the University of Florence (in consortium with the University of Perugia) and for the PhD in Mathematics and Computer Science for Information Processing and Representation of Information and Knowledge at the University of Perugia.

Research Periods Abroad

He has spent research periods by invitation at the following foreign Universities: RWTH- Aachen- Germany (1991, 1993, 2005), A. Mickiewicz University (U.A.M.) of Poznan, Poland (1994, 1998, 1999), University of York, UK (2001, 2002, 2004, 2006), University of Konya, Turkey (2019-2025), Isaac Newton Institute, Cambridge (2019), Sibiu University, Romania (2022-2023-2024-2025).

Bibliometric Data of Scientific Activity

- SCOPUS: h-index 35, 2996 citations;
- WOS: h-index 31, 2261 citations;
- MathScinet: h-index 24, 1837 citations;

- Google Scholar: h-index 41, 5056 citations, i10 index 116.

List of Publications

He is the author of 188 scientific publications in international peer-reviewed journals (in two of which he is an editor of books), author of the scientific monograph:
C. Bardaro-J-Musielak-G.Vinti, "Nonlinear Integral Operators and Applications", De Gruyter Series in Nonlinear Analysis and Applications, De Gruyter, Berlin-New York, 2003
and author of some didactic publications. He is also the owner and inventor of 2 patents.
The scientific results achieved are mainly in the following fields: Real Analysis, Approximation Theory, Signal and Image Processing, and Mathematical Models for Medicine and Engineering.

Scientific Publications from 2022 to 2025

1. M. CANTARINI, D. COSTARELLI, G. VINTI, *Approximation of differentiable and not differentiable signals by the first derivative of sampling Kantorovich operators*, Journal of Mathematical Analysis and Applications, 509 (2022) Article Number: 125913.
2. M. CANTARINI, L. COROIANU, D. COSTARELLI, S. G. GAL, G. VINTI, *Inverse result of approximation for the max-product neural network operators of the Kantorovich type and their saturation order*, Mathematics, 10 (2022) Article Number 63.
3. T. ACAR, O. ALAGÖZ, A. ARAL, D. COSTARELLI, M. TURGAY, G. VINTI, *Convergence of generalized sampling series in weighted spaces*, Demonstratio Mathematica, 55(1), (2022), 153-162. https://doi.org/10.1515/dema-2022-0014
4. D. COSTARELLI, G. VINTI, *Approximation properties of the sampling Kantorovich operators: regularization, saturation, inverse results and Favard classes in L^p-spaces*, Journal of Fourier Analysis and Applications, 28(3), (2022), Article Number 49.
5. T. ACAR, O. ALAGÖZ, A. ARAL, D. COSTARELLI, M. TURGAY, G. VINTI, *Approximation by sampling Kantorovich series in weighted space of functions*, Turkish Journal of Mathematics, 46(7) (2022), 2663–2676.
6. C. CAGINI, D. COSTARELLI, R. GUJAR, M. LUPIDI, G.A. LUTTY, M. SERACINI, G. VINTI, *Improvement of retinal OCT angiograms by sampling Kantorovich algorithms in the assessment of retinal and choroidal perfusion*, Applied Mathematics and Computation, 427 (2022), 127152.
7. N. ÇETIN, D. COSTARELLI, M. NATALE, G. VINTI, *Quantitative estimates for nonlinear multivariate sampling Kantorovich operators*, Special Issue dedicated to Robert Schaback on the occasion of his 75th birthday, 15 (2022), 12–25.
8. G. VINTI, L. ZAMPOGNI, *A general method to study the convergence of nonlinear operators in Orlicz spaces*, Advanced Nonlinear Studies, 22 (2022), 594–618
9. D. COSTARELLI, M. PICONI, G. VINTI, *The multivariate Durrmeyer-sampling type operators: approximation in Orlicz spaces*, Dolomites Research Notes on Approximation, 15 (2022), 128—144.
10. A. OSOWSKA-KURCZAB, T. LES, T. MARKIEWICZ, M. DZIEKIEWICZ, M. LORENT, S. CIERNIAK, D. COSTARELLI, M. SERACINI, G. VINTI, *Novel approach to image resolution enhancement in the medical image analysis*, Expert Systems with Applications, 213 (2023), 118836.
11. L. ANGELONI, J. APPELL, T. D. BENAVIDES, S. REINWAND, G. VINTI, *Compactness properties of multiplication and substitution operators*, J. Operator Theory, 89 (1) (2023), 49–74.
12. D. COSTARELLI, M. PICONI, G. VINTI, *On the convergence properties of Durrmeyer-Sampling type operators in Orlicz spaces*, Mathematische Nachrichten, (2023) DOI: 10.1002/mana.202100117.
13. D. COSTARELLI, G. VINTI, *Asymptotic theorems for Durrmeyer sampling operators with respect to the L^p-norm*, Sampling Approximation and Signal Analysis (Harmonic Analysis in the spirit of J. Rowland Higgins), Springer-Birkhauser, (2023), 23—38.
14. D. COSTARELLI, M. PICONI, G. VINTI, *Quantitative estimates for Durrmeyer-sampling series in Orlicz spaces*, Sampling Theory, Signal Processing, and Data Analysis, special issue dedicated to P.L. Butzer, 21 (3) (2023). https://doi.org/10.1007/s43670-022-00042-6.
15. M. CANTARINI, D. COSTARELLI, G. VINTI, *Convergence of a class of generalized sampling Kantorovich operators perturbed by multiplicative noise*, "Recent Advances in Mathematical Analysis" in the series

"Trends in Mathematics" to celebrate Francesco Altomare's 70th birthday, (2023) https://link.springer.com/book/9783031200205.

16. L. ANGELONI, G. VINTI, *Multidimensional sampling-Kantorovich operators in BV-spaces*, Open Mathematics, 21 (1) (2023) Article number 20220573.
17. D. COSTARELLI, M. SERACINI, A. TRAVAGLINI, G. VINTI, *Alzheimer biomarkers esteem by Sampling Kantorovich algorithm*, Mathematical Methods in the Applied Sciences, 46 (12) (2023), 13506–13520.
18. A. TRAVAGLINI, G. VINTI, G. B. SCALERA, M. SCIALPI, *A Large Scale Analysis for Testing a Mathematical Model for the Study of Vascular Pathologies*, Mathematics, 11 (8) (2023), 1831.
19. D. COSTARELLI, M. NATALE, G. VINTI, *Convergence Results for Nonlinear Sampling Kantorovich Operators in Modular Spaces*, Numerical Functional Analysis and Optimization, 44 (12) (2023), 1276–1299.
20. A. TRAVAGLINI, G. VINTI, *A mathematical model for the analysis of eye fundus images in healthy and diabetic patients*, Lecture Notes in Computer Science, 14108 (2023), 558–576.
21. M. SERACINI, G. VINTI, *Sampling by Difference as a Method of Applying the Sampling Kantorovich Model in Digital Image Processing*, Applied Sciences (Switzerland), 13 (9) (2023), 5594.
22. D. COSTARELLI, E. DE ANGELIS, G. VINTI, *Convergence of Perturbed Sampling Kantorovich Operators in Modular Spaces*, Results in Mathematics, 78(6) (2023), 239.
23. M. CANTARINI, D. COSTARELLI, G. VINTI, *Approximation results in Sobolev and fractional Sobolev spaces by sampling Kantorovich operators*, Fractional Calculus and Applied Analysis, 26 (6) (2023), 2493–2521.
24. L. BOCCALI, D. COSTARELLI, G. VINTI, *Max-Product Sampling Kantorovich Operators: Quantitative Estimates in Functional Spaces*, Numerical Functional Analysis and Optimization, 45 (1) (2024), 667–685.
25. J. APPEL, N. MERENTES, S. REINWAND, G. VINTI, *How to reduce some fixed point theorem*, Applied Set-Valued Analysis and Optimization, 6 (1) (2024), 1–11.
26. L. ANGELONI. E. LIFLYAND, G. VINTI, *Variation type characterization of product Hardy spaces*, Analysis and Mathematical Physics, 14 (2) (2024), 12.
27. L. BOCCALI, D. COSTARELLI, G. VINTI, *Convergence results in Orlicz spaces for sequences of max-product sampling Kantorovich operators*, Journal of Computational and Applied Mathematics, 449 (2024), 115957.
28. W.M. KOZLOWSKI, G. VINTI, *On approximation by rational functions in Musielak–Orlicz spaces*, Journal of Approximation Theory, 304 (2024), 106083.
29. L. BOCCALI, D. COSTARELLI, G. VINTI, *A Jackson-type estimate in terms of the τ-modulus for neural network operators in L^p-spaces*, Modern Mathematical Methods, 2 (2) (2024).
30. D. COSTARELLI, M. NATALE, G. VINTI, *Estimations for the convex modular of the aliasing error of nonlinear sampling Kantorovich operators*, Nonlinear Analysis: Modelling and Control, 30(2) (2025), 270—290.
31. M. LONGARONI, L. RINELLI, A. TRAVAGLINI, G. VINTI: *Mathematical Models and Algorithms for Processing Retinal OCTA Images*. Part of the LNCS book series, 15892, Springer, (2025), 358-378.
32. D. COSTARELLI, M. PICONI, G. VINTI,*On the Regularization by Durrmeyer-Sampling Type Operators in L^p-Spaces via a Distributional Approach*, J. Fourier Anal. Appl., 31 (11) (2025).
33. A. M. ACU, M. ILINA, F. SOFONEA, A. TRAVAGLINI, G. VINTI: *A Comparison Between Neural Network and Sampling Kantorovich Operators in Terms of Image denoising*. Part of the LNCS book series, 15892, Springer, (2025), 379-399.
34. L. RINELLI, A.TRAVAGLINI, N. VESCERA, G. VINTI: *An approximation-based approach versus an AI one for the study of CT images of abdominal aorta aneurysms*. In print in Discrete and Continuous Dynamical System Series S (2025).

Scientific Publications from 1987 to 2021

1. C.BARDARO, G.VINTI, *Perimetro e variazione generalizzata rispetto ad una misura in $\mathbb{R}^2$*, Atti Sem. Mat. Fis. Univ. Modena, 35 (1987), 173-190. (in Italian)
2. C.BARDARO, G.VINTI, *Integral operators on vector measures and applications to the moment kernel*, Rendiconti di Matematica, 8, (1988), 149-164.
3. C.BARDARO, G.VINTI, *Modular convergence in generalized Orlicz spaces for moment type operators*,

Applicable Analysis, 32, (1989), 265-276.

4. C.BARDARO, G.VINTI, *Some estimates of integral operators in fractional calculus*, Rapporto Tecnico N. 8/1989 del Dipartimento di Matematica - Università degli Studi di Perugia. (in Italian)
5. G.VINTI, *Soluzioni periodiche di sistemi non lineari di Liénard con termini forzanti*, Rendiconti del Circolo Matematico di Palermo, Serie II, Tomo XXXIX, (1990), 5-46. (in Italian)
6. C.BARDARO, G.VINTI, *On approximation properties of certain non convolution integral operators*, Journal of Approximation Theory, Vol. 62, No. 3 (1990), 358-371.
7. C.BARDARO, G.VINTI, *On convergence of moment operators with respect to the -variation*, Applicable Analysis, Vol 41 (1991), 247-256.
8. C.BARDARO, G.VINTI, *Modular estimates of integral operators with homogeneous kernels in Orlicz type spaces*, Results in Mathematics, Vol 19 (1991), 46-53.
9. C.BARDARO, G.VINTI, *Some estimates of integral operators with respect to the multidimensional Vitali -variation and applications in fractional calculus*, Rendiconti di Matematica di Roma, Serie VII, Vol 11 (1991), 405-416.
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Didactic Publications

1. L. ANGELONI - G. VINTI “Analisi ed Elaborazione delle Immagini” (Image Analysis and Processing), lecture notes for the course Diagnostic Imaging Techniques (BSc in Physics) and the course Image Reconstruction Algorithms (MSc in Physics, Medical Physics curriculum).
2. A.M. MINOTTI - G. VINTI "La bella Elena della Matematica: la Cicloide" (The Beautiful Helen of Mathematics: the Cycloid), Technical Report of the Department of Mathematics and Computer Science of the University of Perugia.
3. G. VINTI "Appunti di Teoria dell'Approssimazione" (Notes on Approximation Theory), lecture notes for the PhD course “Approximation Theory”, held at the University of Florence.
4. D. COSTARELLI - G. VINTI, "Teoria dell'Approssimazione" (Approximation Theory) lecture notes for the Approximation Theory course at the Master's Degree in Mathematics, University of Perugia, 2017.
5. G. VINTI, "Applied Image and Signal Processing" lecture notes for the Applied Image and Signal Processing course at the Master's Degree in Mathematics, University of Perugia, 2020.

Patents

- Holders: G. VINTI, D. COSTARELLI, M. SERACINI
  Inventors: G. VINTI, D. COSTARELLI, M. SERACINI
  Title: Device for obtaining information on blood vessels and other hollow body parts
  Patent N. 202017000125290
  Filing Date: November 3, 2017
  Grant Date: February 3, 2020

- Holders: G. VINTI, C. CAGINI, M. LUPIDI, D. COSTARELLI, M. SERACINI
  Inventors: G. VINTI, C. CAGINI, M. LUPIDI, D. COSTARELLI, M. SERACINI
  Title: Device for identifying capillary blood vessels and for evaluating their tissue perfusion degree
  Patent N. 202020000005164
  Filing Date: September 11, 2020
  Grant Date: June 10, 2022

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