

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.
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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. KOZŁOWSKI, 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).

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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)
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12. C.BARDARO, G.VINTI, *A General Convergence Theorem with respect to Cesari Variation and Applications*, Nonlinear Analysis, Vol 22 (1994), 505-518.
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18. C.BARDARO, G.VINTI, *Modular estimates for linear integral operators in Musielak-Orlicz spaces on groups*, Atti Sem. Mat. Fis. Modena, 43 (1995), 483-490.
19. C.BARDARO, G.VINTI, *Modular Approximation by Nonlinear Integral Operators on Locally Compact Groups*, Commentationes Mathematicae, 35 (1995), 25-47.
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33. C.BARDARO, G.VINTI, *The contribution of J. Musielak research to the theory of nonlinear integral operators*, apparso sul volume "Viro docto atque iusto Iuliano Musielak", University A.Mickiewicz di Poznan (eds. H. Hudzik, M.Jaroszewskiej) Poznan 1999, ISBN 83-911474-1-X.
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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