CURRICULUM VITAE

MARIANTONIA COTRONEI

EDUCATION

- Doctoral degree in Mathematics, Catania-Messina-Palermo Universities Consortium, October 1996
- Laurea degree in Mathematics, final grade: 110/110 e lode (magna cum laude), University of Messina, July 1991
- High school diploma, final grade: 60/60, Liceo Scientifico "Da Vinci" of Reggio Calabria, 1987

PRESENT POSITION

- "Ricercatore" (assistant professor) in Numerical Analysis at DIIES (Department of Information Engineering, Infrastructures and Sustainable Energy), Università Mediterranea di Reggio Calabria (Italy), since 2005.
- National scientific habilitation as Associate Professor in Numerical Analysis, December 2017.

PREVIOUS ACADEMIC POSITIONS

2000—2004	Research fellow, Department of Mathematics, University of Messina (Italy)
1998—2000	Postdoctoral fellow, Department of Mathematics, University of Messina (Italy)
1997—1998	CNR (Consiglio Nazionale delle Ricerche) research fellow, Department of Mathematics, University of Messina (Italy)
1991—1994	Graduate student fellow, Catania-Messina-Palermo Universities Consortium
1991	CNR (Consiglio Nazionale delle Ricerche) undergraduate student fellow, Department of Mathematics, University of Messina (Italy)

TEACHING ACTIVITY

At the Department of Information Engineering, Infrastructures and Sustainable Energy, University of Reggio Calabria:

2016—present	"Metodi Numerici per l'Ingegneria" (Numerical Methods for Engineering), for industrial engineers
2019—present	"Calcolo Numerico" (Numerical Calculus), for electronic, information and civil engineers
2008—2019	"Calcolo Numerico e Programmazione" (Numerical Calculus and Programming), for electronic and information engineers
2005—2019	"Ricerca Operativa" (Operations Research), for electronic and information engineers
2016	"Calcolo delle Probabilità", for information engineers
2001—2008	"Metodi Numerici" (Numerical Methods), for civil engineers
2004—2008	"Processi Stocastici" (Stochastic Processes), for electronic and information engineers
2006	"Teoria delle Code" (Queueing Theory), for electronic and information engineers
1999—2001	"Calcolo Numerico" (Numerical Calculus), for electronic and information engineers

At the Department of Mathematics, University of Messina:

1992—2004	Teaching assistant to courses in Numerical Analysis, for mathematicians

ADMINISTRATIVE AND OTHER DUTIES

- Rector's Delegate for "System statistical analyses"
- Member of the "Presidio della Qualità" (Quality Panel) of the University of Reggio Calabria, 2013—present
- Member of the "Gruppo di Assicurazione della Qualità" of the Department DIIES, University of Reggio Calabria, 2013—present
- Member of the committee of the Ph.D. program in "Information Engineering", University of Reggio Calabria, 2011—2013, 2015--present
- Member of the committee of the Ph.D. program in "Geotechnical Engineering and Material Chemistry", University of Reggio Calabria, 2008—2010
- Member of the committee of the Ph.D. program in "Information Engineering", University of Reggio Calabria, 2011—2013

RESEARCH INTERESTS

Approximation theory. Wavelets. Subdivision schemes. Signal and image processing.

RESEARCH VISITS

Dec 2019	University of Passau, Germany
Dec 2018	Technical University of Munich, Germany
June 2017	Technical University of Munich, Germany
Jan 2017	University of Vienna, Austria
Nov 2016	University of Passau, Germany
Dec 2015	University of Passau, Germany
July 2015	University of Passau, Germany
May 2014	University of Potsdam, Germany
Apr 2014	University of Passau, Germany
Nov 2013	University of Passau, Germany
Jul 2000	University of Erlangen-Nuremberg, Germany
Dec 1999	University of Erlangen-Nuremberg, Germany
Feb 1998	Institut de Physique du Glob, Paris, France
May 1996	Washington University, Saint Louis, USA
Oct 1994	IMA (Institute for Mathematics and its Applications), University of Minnesota, Minneapolis, USA

MEMBERSHIPS

- GNCS-INDAM (Gruppo Nazionale per il Calcolo Scientifico)
- SIMAI (Società Italiana di Matematica Applicata e Industriale)
- UMI (Unione Matematica Italiana)
- SIAM (Society for Industrial and Applied Mathematics)
- RITA (Rete Italiana di Approssimazione)
- Gruppo UMI di "Teoria dell' Approssimazione e Applicazioni"
- IMACS (International Association for Mathematics and Computers in Simulation)

COMMITTEES/ CONFERENCE ORGANIZATION

- 5th IM Workshop on "Applied Approximation, Signals and Images", Bernried (Germany), February 24-28, 2020
- 4th IM Workshop on "Applied Approximation, Signals and Images", Bernried (Germany), March. 4-8, 2019
- Special session: "Signal and data processing: Theory and applications" (with V. Bruni, M. Rossini), MASCOT2018-15th meeting on Applied Scientific Computing and Tools, Roma (Italy), Oct. 2-5, 2018
- 3rd IM Workshop on "Applied Approximation, Signals and Images", Bernried (Germany), Feb. 19-23, 2018
- "SMART 2017: Second International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in Tuscany" (with C.Conti, S. Morigi, E. Pellegrino, F. Pelosi, F. Pitolli, S. Remogna, L. Romani, M.L. Sampoli, A. Sestini), Gaeta (Italy), Sep. 17-21, 2017
- 2nd IM Workshop on "Applied Approximation, Signals and Images", Bernried (Germany), Feb. 27-Mar. 3, 2017
- Session: "Multiresolution techniques: recent insights and applications", 4th Dolomites workshop on Constructive Approximation and Applications (with C. Conti, L. Romani), Alba di Canazei (Italy), Sep. 8-13, 2016
- Minisimposium: "Approximation Methods for Data, Images and Operators" (with F. Pitolli, L. Puccio), Congresso Nazionale SIMAI 2016, Milano (Italy), Sep. 13-16, 2016
- IM Workshop on "Signals, Images, and Approximation", Bernried (Germany), Feb. 29-Mar. 4, 2016
- Workshop on "Subdivision, Refinability, Signals and Approximation", Bernried (Germany), Mar. 2-6, 2015
- "SMART 2014: First International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in Tuscany", Pontignano (Italy), Sep. 28-Oct. 1, 2014
- Minisimposium: "Signal and image processing techniques, and applications" (with L. Francomano, F. Pitolli), Congresso Nazionale SIMAI 2014, Taormina (Italy), July 7-10, 2014
- Minisymposium: "Approximation methods for data and image processing" (with P. Lamberti, M. Rossini), Congresso Nazionale SIMAI 2012, Torino (Italy), June 25-29, 2012

- "VIII Congresso Nazionale della SIMAI (Società Italiana di Matematica Applicata e Industriale), Baia Samuele (Italy), May 22—26, 2006
- "ICWAA01- 2nd International Conference on Wavelet Analysis and its Applications", Hong Kong, 18-20 Dec. 2001
- "IV Congresso Nazionale della SIMAI (Società Italiana di Matematica Applicata e Industriale), Giardini Naxos (Italy), June 1-5, 1998
- ''International Conference on Wavelets: Theory, Algorithms, and Applications'', Taormina (Italy), Oct. 14-20, 1993

INVITED TALKS

- *Characterization of orthogonal wavelet systems,* special session on Approximation Theory and Applications, UMI Congress, Pavia (Italy), Sep 2—7, 2019
- *Multiple MRA and image processing*, minisymposium on Interpolation and approximation methods in Imaging, SIAM Conference on Imaging Science, Bologna (Italy), June 5-8, 2018
- *(Multi)wavelets and System Theory,* ESI Workshop on Mathematical Challenges of Structured Function System, Vienna, Mar 19-23, 2018
- *(Multi)wavelets and System Theory*, Colloquium talk, University of Passau (Germany), Nov 8, 2016.
- *Hermite subdivision schemes and exponential polynomial generation*, Special Session: Subdivision, refinability and multiscale methods, MASCOT2015 – 14th Meeting on Applied Scientific Computing and Tools, Rome (Italy), Jun 9-12, 2015.
- *A multiple multiresolution analysis for image processing,* SIAM Minisymposium on Multivariate Signal Analysis and Inverse Problems, Joint Mathematics Meetings, San Antonio (USA), Jan. 10-13, 2015
- *A class of anisotropic multiple multiresolution analysis*, MAIA-Multivariate Approximation and Interpolation with Applications, Erice (Italy), Sep. 25-30, 2013
- *A parameterization strategy for the construction of orthogonal wavelet matrix filters*, Second Workshop on Subdivision and Refinability, Pontignano (Italy), Sep. 15-19, 2011
- *Partial parametrization of orthogonal wavelet matrix filters*, minisymposium on Recent Advances in Subdivision and Refinability, International Symposium in Approximation Theory, Nashville (USA), May 17-21, 2011
- *An algebraic approach to the construction of multi-channel wavelet filters,* minisymposium "Linear Algebra in Curves and Surfaces Modeling", ILAS 2010 - 16th International Conference of the International Linear Algebra Society , Pisa (Italy), June 21-25, 2010
- *Full rank subdivision schemes and multichannel wavelets*, Workshop on Subdivision and Refinability, Pontignano (Italy), May 1-4, 2008
- *Full rank filters and polynomial reproduction*, MAIA-Multivariate Approximation and Interpolation with Applications, University of Hohenheim (Germany), 13--17/10/2004.
- *An algebraic construction of k-balanced multiwavelets*, Department of Mathematics, University of Erlangen-Nuremberg (Germany), Dec. 16, 1999
- *Introduzione alle wavelets e alle multiwavelets*, Department of Electronic Engineering, University of Reggio Calabria (Italy), Nov. 17, 1999
- *Multiwavelets ed applicazioni*, Department of Computer Science, University of Bologna (Italy), Oct. 20, 1999

CONTRIBUTED TALKS

- Schemi di suddivisione e wavelets, Approssimazione multivariata: teoria ed applicazioni, Palermo, Dec. 9-10, 2017
- Hermite subdivision and multiwavelets with polynomial-exponential cancellation properties, Congresso Nazionale SIMAI 2016, Milano (Italy), Sep. 13-16, 2016
- Hermite subdivision schemes and polynomial-exponential reproduction*,* Workshop on "Signals, Images, and Approximation"*,* Bernried (Germany), Feb. 29-Mar. 4, 2016
- Hermite subdivision schemes and their polynomial-exponential reproduction, NETNA2015: New Trends in Numerical Analysis: Theory, Methods, Algorithms and Applications, Falerna (Italy), Jun 18-21, 2015
- A special family of multiple subdivision schemes, Workshop on "Subdivision, Refinability, Signals and Approximation"*,* Bernried (Germany), Mar. 2-6, 2015

- Subdivision of random processes, SMART 2014: First International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in Tuscany, Pontignano (Italy), Sep. 28-Oct.1, 2014
- Non-stationary biorthogonal wavelet filters, Congresso Nazionale SIMAI 2012, Torino (Italy), June 25-29, 2012
- Full Rank Vector Subdivision Schemes and Multichannel Wavelets, 20 Years of Wavelets, DePaul University, Chicago (USA), May 15-17, 2009.
- Multichannel wavelets based on full rank interpolatory subdivision schemes, IX Congresso Nazionale della SIMAI (Società Italiana di Matematica Applicata ed Industriale), Roma (Italy), Sep. 15—19, 2008
- Full rank interpolatory subdivision schemes (poster), 6th International Conference on Curves and Surfaces, Avignon (France), June 29-July 5, 2006.
- Multifilters and prefilters: uniqueness and algorithmic aspects, Recent Progress in Spline and Wavelet Approximation, Roma (Italy), June 14-16, 2006
- A class of orthonormal and interpolatory filters obtained from Blaschke products, VIII Congresso Nazionale della SIMAI (Società Italiana di Matematica Applicata ed Industriale), Baia Samuele (Italy), May 22-26, 2006
- The cardinal interpolation problem in spaces of refinable functions (poster), Numerical Analysis: the State of the Art, Università della Calabria, Cosenza (Italy), May 19-21, 2005
- On the construction of non-negative rational symbols with arbitrary approximation order, Classical and new approximation spaces: theory and applications, Roma (Italy), Feb. 5—7, 2004
- Multifiltri con e senza prefiltro'', Convegno del Gruppo Nazionale per il Calcolo Scientifico, Ferrara (Italy), Feb. 12-13, 2002
- Multiwavelets and image processing, 11th ECMI (European Consortium for Mathematics in Industry) Conference, Torre Normanna (Italy), Sep. 26-30, 2000
- Biorthogonal k-balanced and full-rank multiwavelets via the lifting scheme: an algebraic approach, V Congresso Nazionale della SIMAI, Ischia (Italy), June 5-9, 2000
- Perfomance of a class of biorthogonal filters, V Congresso Nazionale della SIMAI, Ischia (Italy), June 5-9, 2000.
- On the construction and behaviour of a general class of biorthogonal filters, Advanced and computational mathematical tools in metrology, Lisbona (Portugal), Apr. 10-13, 2000.
- An algebraic construction of k-balanced multiwavelets via the lifting scheme, 4th International Conference on Curves and Surfaces, Saint-Malo (France), July 1-7, 1999.
- Wavelet analysis of Earth rotation, IV Congresso Nazionale della SIMAI (Società Italiana di Matematica Applicata ed Industriale), Giardini Naxos (Italy), June 1-5, 1998.
- Multiwavelets ed applicazioni, Convegno Nazionale di Analisi Numerica, Montecatini (Italy), Apr. 15-17, 1998.
- Image compression through embedded multiwavelet transform coding, 4th International Conference on Mathematical Methods for Curves and Surfaces, Lillehammer (Norway), July 2-8, 1997.
- Multiwavelet analysis and signal processing, 3rd International Conference on Curves and Surfaces, Chamonix-Mont Blanc (France), June 27-July 3, 1996.
- Uno studio sulle multiwavelets, XV Congresso dell'Unione Matematica Italiana, Padova (Italy), Sep. 11—16, 1995.
- Recognition of biological shapes by means of wavelet analysis, 8th International Conference on Approximation Theory, College Station (USA), Jan. 8-12, 1995.
- Un metodo non iterativo per la stima di parametri di superquadriche da mappe di profondità, Congresso annuale AICA, Associazione Italiana per il Calcolo Automatico, Palermo (Italy), Sep. 21—23, 1994.
- Wavelets and model-based object recognition (poster), International Conference on Wavelets: Theory, Algorithms, and Applications, Taormina (Italy), Oct. 14-20, 1993.

PUBLICATIONS

[1] M. Charina, C. Conti, M. Cotronei, T. Sauer, Bivariate two-band wavelets demystified, Linear Algebra Appl., vol. 608, 2021, pp. 13-36

[2] M. Cotronei, D. Rüweler, T. Sauer, Multiple filterbanks for image processing: implementation issues, Math. Comput. Simulation, vol. 176, 2020, pp. 147-159

[3] V. Bruni, M. Cotronei, F. Pitolli, A family of level-dependent biorthogonal wavelet filters for image compression, J. Comput. Appl. Math., vol. 367, 2020
[4] M. Cotronei, C. Moosmüller, T. Sauer, N. Sissouno, Level-dependent interpolatory Hermite subdivision schemes and wavelets, Constr. Approx., vol 50(2), 2019, pp. 341-366
[5] M. Cotronei, M. Rossini, T. Sauer, E. Volontè, Filters for anisotropic wavelet decompositions, J. Comput. Appl. Math., vol. 349, 2019, pp. 316-330
[6] M. Charina, C. Conti, M. Cotronei, M. Putinar, System theory and orthogonal multi-wavelets, J. Approx. Theory, vol. 238, 2019, pp. 85-102
[7] M.Cotronei, Some constructions of level-dependent Hermite subdivision operators, Rendiconti del Seminario Matematico, vol. 76(2), pp. 105-111
[8] M. Cotronei, R. Di Salvo, M. Holschneider, L. Puccio, Interpolation in reproducing kernel Hilbert spaces based on random subdivision schemes, J. Comput. Appl. Math., vol. 311, 2017, pp. 342-353
[9] M. Cotronei, N. Sissouno, A note on Hermite multiwavelets with polynomial and exponential vanishing moments, Appl. Numer. Math., vol. 120, 2017, pp. 21-34
[10] C. Conti, M. Cotronei, L. Romani, Beyond B-splines: exponential pseudo-splines and subdivision schemes reproducing exponential polynomials, Dolomites Res. Notes Approx., vol. 10, 2017, pp. 31-42
[11] C. Conti, M. Cotronei, T. Sauer, Convergence of level-dependent Hermite subdivision schemes, Appl. Numer. Math., vol. 116, 2017, pp. 119-128
[12] C. Conti, M. Cotronei, T. Sauer, Factorization of Hermite subdivision operators preserving exponentials and polynomials, Adv. Comput. Math., vol. 45, 2016, pp. 1055-1079
[13] M. Cotronei, D. Ghisi, M. Rossini, T. Sauer, An anisotropic directional multiresolution and subdivision scheme, Adv. Comput. Math., vol. 41, 2015, pp. 709-726
[14] G. Araniti, M. Condoluci, M. Cotronei, A. Iera, A. Molinaro, A Solution to the Multicast Subgroup Formation Problem in LTE Systems , IEEE Wireless Commun. Lett., vol. 4(2) 2015, pp. 149-152
[15] M. Cotronei, M. Holschneider, Partial parameterization of orthogonal wavelet matrix filters, J. Comput. Appl. Math., vol. 243, 2013, pp. 113-125
[16] C. Conti, M. Cotronei, From full rank subdivision schemes to multichannel wavelets: A constructive approach, in: J. Cohen And A. Zayed, Eds., Wavelets and Multiscale Analysis: Theory and Applications, Birkhäuser, Boston (USA), 2011, pp. 109-130
[17] C. Conti, M. Cotronei, T. Sauer, Full rank interpolatory subdivision: a first encounter with the multivariate realm, J. Approx. Theory, vol. 162, 2010, pp. 559-575
[18] C. Conti, M. Cotronei, T. Sauer, Full rank interpolatory subdivision schemes: Kronecker, filters and multiresolution, J. Comput. Appl. Math., vol. 233, 2010, pp. 1649-1659
[19] G. Andaloro, M. Cotronei, L. Puccio, Some Results on Multivariate Symmetric Wavelet Systems, AIP Conference Proceedings, vol. 1281, 2010, pp. 520-522
[20] G. Andaloro, M. Cotronei, L. Puccio, A new class of non-separable symmetric wavelets for image processing, Communications to simai congress, vol. 3, 2009, pp. 324-328
[21] G. Grillo, M. Cotronei, MAT MAT PNI 2009, Editrice La Scuola, 2009, ISBN: 9788835024163
[22] M. Cotronei, M.L. Lo Cascio, T. Sauer, Multifilters and prefilters: uniqueness and algorithmic aspects, J. Comput. Appl. Math., vol. 221, 2008, pp. 346-354
[23] C. Conti, M. Cotronei, T. Sauer, Full Rank Positive Matrix Symbols: Interpolation and Orthogonality, BIT, vol. 48, 2008, pp. 5-27
[24] M. Cotronei, T. Sauer, Full rank filters and polynomial reproduction, Commun. Pure Appl. Anal., vol. 6, 2007, pp. 667-687
[25] C. Conti, M. Cotronei, T. Sauer, Full rank interpolatory vector subdivision schemes, in: A. Cohen, J. L. Merrien, And L. Schumaker Eds., Curve and Surface Fitting: Avignon 2006, 2007, pp. 71-80
[26] M. Cotronei, M.L. Lo Cascio, H.O. Kim, C.A. Micchelli, T. Sauer, Refinable functions from Blaschke products, Rend. Mat. Appl., vol. 26, 2006, pp. 267-290
[27] M. Cotronei, L. Puccio, A. Vocaturo, On the application of full rank filters to color image processing, in: R. M. Spitaleri And F. Pistella Eds., Proceedings of MASCOT05--IMACS Series in Comp. and Appl. Math., Vol. 9, 2006, pp. 125-128.
[28] M. Cotronei, M.L. Lo Cascio, From refinable functions to interpolatory subdivision schemes, in: R. M. Spitaleri And F. Pistella Eds., Proceedings of MASCOT04--IMACS Series in Comp. and Appl. Math., Vol. 8, 2005, pp. 71-80.

[29] G. Grillo , M. Cotronei, MAT MAT PNI, Editrice La Scuola (ITA), 2005, ISBN: 8835018102
[30] M. Cotronei, M.L. Lo Cascio, T. Sauer, Dual non-negative rational symbols with arbitrary approximation order, Appl. Numer. Math., vol. 51, 2004, pp. 497-510
[31] M. Cotronei, M. L. Lo Cascio, T. Sauer, A class of biorthogonal refinable functions with rational symbol, in: R. M. Spitaleri And F. Pistella Eds., Proceedings of MASCOT02--IMACS Series in Comp. and Appl. Math., Vol. 7, 2003, pp. 83-90.
[32] M. Cotronei, T. Sauer, Polynomial reproduction and the dyadic eigenvalues of bi-infinite matrices, in: A. Cohen, J. L. Merrien, And L. Schumaker Eds., Curve and Surface Fitting: Saint Malo 2002, Nashboro Press, Nashville, 2003, pp. 79-88.
[33] S. Bacchelli, M. Cotronei, T. Sauer, Multifilters with and without prefilters, BIT, vol. 42, 2002, pp. 231-261
[34] S. Bacchelli, M. Cotronei, T. Sauer, Wavelets for multichannel signals, Adv. Appl. Math., vol. 29, 2002, pp. 581-598
[35] M. Cotronei, M.L. Lo Cascio, A method for the construction of families of biorthogonal filters with prescribed properties, Adv. Comput. Math., vol. 17, 2002, pp. 199-210
[36] M. Cotronei, L. Puccio, Multiwavelets and image processing, in: A. M. Anile, V. Capasso, A. Greco Eds., Progress in Industrial Mathematics at ECMI 2000 - Series: Mathematics in Industry, Spinger, 2002, pp. 105-110
[37] M. Cotronei, M. L. Lo Cascio, On the construction and behaviour of a general class of biorthogonal filters, in: P. Ciarlini, M. G. Cox, E. Filipe, F. Pavese And D. Richter Eds., Advanced Mathematical and Computational Tools in Metrology V, Series on Advances in Mathematics for Applied Sciences, World Scientific, Singapore, Vol. 57, 2001, pp. 86-93
[38] S. Bacchelli, M. Cotronei, D. Lazzaro, An algebraic construction of k-balanced multiwavelets via the lifting scheme, Numer. algorithms, vol. 23, 2000, pp. 329-356
[39] M. Cotronei, D. Lazzaro, L. Montefusco, L. Puccio, Image compression through embedded multiwavelet transform coding, IEEE Trans. Image Process., vol. 9, 2000, pp. 184-189
[40] M. Cotronei, L. Puccio, Effectiveness of multiwavelets in signal and image processing, Ann. Univ. Ferrara, sez. 7: scienze matematiche, vol. XLV, 2000, pp. 19-32
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[42] S. Bacchelli, M. Cotronei, D. Lazzaro, L. Puccio, Multiwavelets and construction of biorthogonal k-balanced multifilters, in: L. Brugnano And D. Trigiante Eds., Recent Trends in Numerical Analysis, series: Advances in Computation: Theory and Practice, Nova Science Publishers, Inc., 2000, pp. 20-34
[43] M. Cotronei, D. Lazzaro, L. Montefusco, L. Puccio, Some experiments on image compression by means of multiwavelet transform, Atti Accad. Peloritana Pericolanti, Cl. Sci. Fis. Mat. Nat., vol. LXXVI, 1998, pp. 77-96
[44] M. Cotronei, L. Montefusco, L. Puccio, Multiwavelet analysis and signal processing, IEEE Trans. Circuits Syst., II, Analog Digit. Signal Process., vol. 45, 1998, pp. 970-987
[45] E. Bellanger, M. Cotronei, M. Holschneider, Analisi wavelet di salti di fase, Atti Accad. Peloritana Pericolanti, Cl. Sci. Fis. Mat. Nat., n. LXXV, 1997, pp. 5-12
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[47] M. Cotronei, G. Salvato, A non-iterative method for the estimation of superquadric parameters from depth maps, J. Intell. Syst., vol. 2, 1996, pp. 115-132
[48] L. Puccio, V. Calderone, M. Cotronei, G. Cusumano, R. C. Russo, G. Stringelli, P. Princi, Wavelet packet analysis and experimental data approximation on Cray T3D, in: G. Erbacci and M. Voli Eds., Science and Supercomputing at CINECA, 1995 Report, CINECA Supercomputing Group, Tecnoprint, Bologna, 1996, pp. 491-495.
[49] M. Cotronei, Multiwavelets: analisi teorica ed algoritmi, Tesi Di Dottorato Di Ricerca In Matematica - VII Ciclo, 1996.

[50] L. Puccio, M. Cotronei, P. Princi, V. Cavallari, Recognition of biological shapes by means of wavelet analysis, in: C. K. Chui and L. Schumaker Eds., Approximation Theory VII, World Scientific Publishing Co., 1995, pp. 351-358.
[51] M. Cotronei, Un efficiente algoritmo per l'analisi di segnali mediante spline-wavelets polinomiali, Atti Accad. Peloritana Pericolanti, Cl. Sci. Fis. Mat. Nat., n. LXX, 1994, pp. 211-235.

RESEARCH PROJECTS/GRANTS

- INdAM GNCS project: “Kernel-based approximation, multiresolution and subdivision schemes and their applications to imaging”, 2019 (participant)
- INdAM-GNCS project: “Sviluppo di modelli e metodi computazionali per l'elaborazione di segnali e immagini”, 2018 (participant)
- INdAM-GNCS project: “Approssimazione multivariata: teoria e applicazioni”, 2017 (participant)
- FFABR national research grant, 2017
- INdAM-GNCS project: "Tecniche wavelet di tipo non-stazionario per l'elaborazione di immagini", 2014 (responsible)
- INdAM-GNCS project "Schemi di suddivisione scalari e vettoriali: teoria e applicazioni", resp. C. Conti, 2011 (participant).
- EU H2020-funded project GEECCO: Gender Equality in Engineering through Communication and Commitment, grant agreement N. 741128, 2017-present (participant)
- MIUR - P.O.N. Ricerca e Competitività 2014-2020 project: “COGITO-A COGnItive dynamic sysTem to allOw buildings to learn and adapt”, cod ARS01_00836, 2019-present (participant)
- MIUR - P.O.N. Ricerca e Competitività 2014-2020 project: “SecureOpenNets”, cod ARS01_00587, 2019-present (participant)
- MIUR - P.O.N. Ricerca e Competitività 2007-2013 project: "TETRis - Servizi innovativi Open Source su TETRA", cod. PON01_00451, 2012-2013 (participant)
- MIUR - P.O.N. Ricerca e Competitività 2007-2013 project: "FINGERIMBALL - Tecnologie e materiali anticontraffazione e applicazioni nanotecnologiche per l'autenticazione e la tutela delle produzioni agro-alimentari di eccellenza", cod. PON01_00636, 2011-2013 (participant)
- MIUR - P.O.N. Ricerca e Competitività 2007-2013 project: "GELMINCAL - Generatore Eolico a Levitazione Magnetica in Calabria", cod. PONa3_00308, 2013 (participant)
- MIUR - P.O.N. Ricerca e Competitività 2007-2013 project: “MC3CARE - Mobile Continuos Connected Comprehensive Care”, cod. PON01_03096, 2013 (participant)
- MIUR - P.O.N. Ricerca e Competitività 2007-2013 project: “DOMUS - Piattaforma intelligente per il monitoraggio e la gestione della sicurezza in-home di persone e strutture”, cod. PON03PE_00050_1, 2013-2016 (participant)
- University of Reggio Calabria RdB projects, 2005—2010 (responsible)
- COFIN project: “Aspetti costruttivi e applicativi di nuovi spazi funzionali nell'ambito dell'approssimazione numerica”, resp. L. Gori, 2003-2004, (participant)
- University of Messina project: “Costruzione, proprietà ed applicazioni di wavelets a simbolo polinomiale e razionale”, resp. L. Puccio, 2002 (participant)
- University of Messina project: “Metodi numerici per il trattamento di immagini mediante l'uso di refinable functions, wavelets, multiwavelets”, resp. M. L. Lo Cascio, 2001 (participant)
- INdAM-GNCS project: “Ricostruzione e restoration di immagini mediante uso di funzioni di raffinamento, wavelets e multiwavelets”, resp. M.L. Lo Cascio, 2001-2002 (participant)
- CNR-GNIM special project: “Ricostruzione di superfici con Subdivision e Wavelets”, resp. G. Casciola, 2000 (participant)
- MURST Scientific Research Program: ”Analisi Numerica: Metodi e Software Matematico”, resp V. Ruggiero, 1997-2000 (participant)
- CNR Italy/France bilateral project: “Algoritmi paralleli per l'elaborazione di segnali ed immagini mediante wavelets e frames, resp. L. Puccio, 1996 (participant)
- CNR Strategic Project: “Matematica per la Tecnologia e la Società-Analisi di dati, segnali e forme", resp. B. Falcidieno, 1994 (participant)

EDITOR/REFEREE ACTIVITY

- Guest editor of Journal of Computational and Applied Mathematics (Elsevier), special issue: "Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability"
- Referee for several journals in mathematics including: “Journal of Computational and Applied Mathematics”, “Mathematics and Computers in Simulation”, “Siam Journal of Mathematical Analysis”, “IEEE Transactions on Signal Processing”, “Applied and Computational Harmonic Analysis”, “Advances in Computational Mathematics”