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## CURRICULUM VITAE

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### PERSONAL INFO

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Date of birth 30.09.1965  
Place of birth Milano  
Affiliation Dipartimento di Matematica e Applicazioni  
Università degli Studi di Milano - Bicocca  
via Cozzi 55, 20125 Milano

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### EDUCATION

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1990 Degree in Mathematics, Università degli Studi di Milano.  
1994 Ph.D. in Computational Mathematics and Operative Research, Università degli Studi di Milano.

### EMPLOYMENT

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1998 - Ricercatore (assistant professor) in Numerical Analysis, Università degli Studi di Milano – Bicocca.  
1996 - 1998 Ricercatore (assistant professor) in Numerical Analysis, Università degli Studi di Milano.  
1993 - 1996 Mathematics high school teacher.

### QUALIFICATIONS

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2021 - 2030 National Scientific qualification as associate professor in Numerical Analysis in the Italian higher education system.

### RESEARCH INTERESTS

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Kernel methods and radial basis functions, meshless approximation and applications, subdivision schemes, CAGD, wavelets, mathematical signal processing, approximation theory.

### GRANTS

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- INdAM-GNCS: Interpolazione e smoothing: aspetti teorici, computazionali e applicativi con un' enfasi all'elaborazione di immagini e all'analisi dei dati. Coordinator: Lucia Romani (2020).
- Algoritmi e Approssimazioni Numeriche group member, supported by the Group grants FA project of Università degli Studi di Milano - Bicocca (2008 - ).
- INdAM-GNCS: Kernel-based approximation, multiresolution and subdivision methods and related Applications. Coordinator: Francesco dell'Accio (2019).
- INdAM-GNCS: Metodi, algoritmi e applicazioni dell'approssimazione multivariata. Coordinator: A. De Rossi (2018).
- National Grant FFABR 2017: Fondo per il finanziamento delle attività base di ricerca (2017-NAZ-0373) (3.000€). 2018-2020.
- INdAM-GNCS: Frames, Subdivision frames e trasformata Hough per applicazioni alle immagini biomediche. Coordinator: C. Conti (2016).

- INdAM-GNCS: Tecniche wavelet di tipo non-stazionario per l'elaborazione di immagini. Coordinator: M. Cotronei (2015).
- PRIN 2011: Varietà reali e complesse: geometria, topologia e analisi armonica. Coordinator: Fulvio Ricci (2013 -2016).
- INdAM-GNCS: New Trends in Subdivision. Coordinator: C. Conti (2012).
- INdAM-GNCS: Schemi di suddivisione scalari e vettoriali:teoria e applicazioni. Coordinator: C. Conti (2011).
- INdAM-GNCS: Metodi numerici per il trattamento di dati sparsi. Coordinator: Mira Bozzini (2003).
- PRIN 2003: Aspetti costruttivi e applicativi di nuovi spazi funzionali nell'ambito dell'approssimazione numerica. Coordinator: Laura Gori (2003 -2005).
- INdAM-GNCS: Trattamento dei dati nell'ambito dell'approssimazione numerica. Coordinator: Mira Bozzini (2001).
- PRIN 1996: Analisi Numerica e Matematica Computazionale. Coordinator: Ferruccio Fontanella.
- PRIN 1995: Analisi Numerica e Matematica Computazionale. Coordinator: Ferruccio Fontanella.

### CONFERENCE/ MINISYMPOSIA/ SPECIAL SESSION ORGANIZATION

- *5<sup>th</sup> Dolomites Workshop on Constructive Approximation and Applications* (virtual conference), September 6-10, 2021.
- RITA PhD Seminars, May 28, 2021, online.
- *Signal and data processing: theory and applications*. MASCOT 2018, Roma, Italy, October 2-5, 2018.
- International Workshop *New trends in subdivision and related applications*, Milan, Italy, September 4-7, 2012.
- *Approximation methods for data and image Processing*. Simai 2012, Torino, Italy, June 25-29, 2012.
- INdAM Meeting *New Frontiers in CAGD*, Bertinoro, Italy, May 17-21, 2010.
- *Numerical approximation and applications: from Cagd to wavelets*. Simai 2010, Cagliari, Italy, June 21-25, 2010.
- *New trends of numerical approximation and applications*. Simai 2008, Roma, Italy, September 15-19, 2008.

### SPEAKER AT CONFERENCES

- Talk in minisymposium: Adaptive and Accurate Approximation of Discontinuous Functions with Variably scaled Kernels. In *Approximation in Geosciences: Theory and Numerics*, SIAM GS21, Milan, Italy, June 21-24, 2021.
- Talk in minisymposium: Faithful interpolation of non-regular functions from scattered data. In *New Trends and Applications in Approximation Theory*. Simai 2020+2021, Parma, Aug. 30 -Sept. 3, 2021.
- Invited speaker: ENO/WENO RBF Techniques for discontinuous functions. Radial Basis Functions: theories, applications and recent advances. Online international workshop, Kharazani University, Teheran, 16-19 June 2020.
- Talk in special session: Recovering discontinuous functions via MQ-RBF local interpolation with ENO/WENO estimate of the shape parameter. In *Approximation: Methods, Algorithms and Applications*. Numerical Computations: Theory and Algorithms, Isola Capo Rizzuto Crotone, Italy, June 15-21, 2019.

- Poster: ENO/WENO RBF techniques. Dolomites Research Week on Approximation, Alba di Canazei, Italy, September 2-6, 2019.
- Talk in minisymposium: RBF methods for edge detection. In *Interpolation and Approximation Methods in Imaging*. SIAM Conference on Imaging Science, Bologna, Italy, June 5-8, 2018.
- Report on the research developed by the Milano group. Approssimazione Multivariata: Teoria ed Applicazioni. Giornate di lavoro del progetto GNCS e 1<sup>a</sup> Riunione Nazionale dei partecipanti alla Rete Italiana di Approssimazione (RITA), Palermo 8-10 Dicembre 2017.
- Poster: Applications of Anisotropic Multiple Multiresolution Analyses. Second Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in Italy (SMART), Gaeta, September 17-21, 2017.
- Talk: Recovering Functions with Discontinuities by Variably Scaled Kernels. Multivariate Approximation: Theory, Algorithms & Applications, Torino, May 25-26, 2017.
- Talk in minisymposium: On directional transforms in dimension  $d = 2$ . In *Approximation Methods for Data Images and Operators*, SIMAI 2016, Politecnico di Milano, September 13-16, 2016.
- Invited speaker: Interpolation with Applications, Luminy, France. September 18-23, 2016.
- Seminar: Generalized Whittle-Matérn and polyharmonic kernels, Dipartimento di Matematica "G. Peano", Università di Torino, March, 25, 2015.
- Talk in minisymposium: On pseudo-commuting properties and directional transforms. In *Subdivision, Refinability and Multiscale Methods*, MASCOT 2015, Roma, Italy, June 9-12, 2015.
- Poster: Wavelets generated by Kernels via Scale Derivatives. 8<sup>th</sup> International Conference *Curves and Surfaces*, Paris, France, June 12-18, 2014.
- Talk in minisymposium: On the problem of recovering non regular surfaces from gridded data. In *Signal and Image Processing Techniques, and Applications*, SIMAI 2014, Taormina, Italy, July 7-10, 2014.
- Invited speaker: Recovering surfaces with discontinuity curves from gridded data. *Multivariate Approximation and Interpolation with Applications*, Erice, Italy, September 25-30, 2013.
- Talk: On generalized Polyharmonic Kernels. Eighth International Conference on Mathematical Methods for Curves and Surfaces, Oslo, Norway, 28 June - 3 July 2012.
- Invited speaker: The detection and recovery of discontinuity curves from scattered data. Multivariate Approximation and Interpolation with Applications, Edimburgh, Scotland, September 6-9, 2010.
- Invited speaker: Polyharmonic splines. Multivariate Approximation: Theory and Applications, Cancun, Mexico, April 26-May 1, 2007.
- Talk: Approximating structured data in  $R^4$ . SIMAI 2006. Baia Samuele (Ragusa) Italy, May 22-26, 2006.
- Talk: Polyharmonic wavelets: a new isotropic construction. Curves and Surfaces, Avignon, France, June 29 - July 5, 2006.
- Poster: Some remarks on polyharmonic B-splines. Wave 2006. Wavelets and Application Conference, Lousanne, Switzerland, July 10-14, 2006.
- Talk: On the construction of polyharmonic B-splines and their applications. Recent Progress in Spline and Wavelets Approximation, Rome, Italy, June 14-16, 2006.
- Talk: Detecting discontinuities in two-dimensional sampled signals by polyharmonic pre-wavelets. International Conference on Numerical Analysis and Applied Mathematics, Rhodes, Greece, September 16-20, 2005.
- Talk: Un metodo per riconoscere le discontinuità di una funzione bidimensionale. Giornate di lavoro su Recenti risultati in questioni di Teoria dell'Approssimazione. Roma, 15-16 Dicembre, 2005.

- Invited speaker: On some application of polyharmonic splines. Multivariate Approximation and Interpolation with Applications, Stuttgart-Hohenheim, Germany, October, 13-17, 2004.
- Talk: On the error evaluation of a multidimensional MRA based on polyharmonic splines. Wavelets and Splines, San Petersburg, Russia, July 2-8, 2003.
- Poster: On the problem of numerical differentiation. Curves and Surfaces, Saint Malò, France, July 1-7, 1999.
- Talk: Superfici: individuazione di discontinuità e ricostruzione. Convegno Nazionale di Analisi Numerica, Montecatini, Italy, April 15-17, 1998.
- Talk: Individuazione di singolarità: un'applicazione a problemi di tipo archeologico. SIMAI, Taormina, Italy, June 1-5, 1998.
- Talk: 2D-Discontinuity detection from scattered data. Mathematical Methods for curves and Surfaces IV, Lillehammer, Norway, July 3-8, 1997.
- Talk: Surface interpolation with constrained areas. Conference on Numerical Mathematics celebrating the 60th birthday of M. J. D. Powell, Cambridge, GB, July 27-30, 1996.
- Talk: An approximation method based on the second kind Chebyshev polynomials. Nonlinear numerical methods and rational approximation, Antwerp, Belgium, September 5-11, 1993.

#### CONTRIBUTIONS IN CONFERENCES

- (with C. Rabut) Image processing with radial basis wavelets with tension parameters. Premier Congrès Franco-Marocain de Mathématiques Appliquées, Marrakech, 16-20 April, 2018
- Poster (with L. Romani, D. Schenone) Edge detection methods based on RBF interpolation. Second Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in Italy (SMART), Gaeta, September 17-21, 2017.
- (with E. E. Volontè, T. Sauer) Directional multiresolution in two and more variables. Second Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in Italy (SMART), Gaeta, September 17-21, 2017.
- (with E. Volontè, M. Bozzini) Anisotropic Scaling Matrices with Minimum Determinant. Mathematical Methods for Curves and Surfaces, Tønsberg, Norway, June 23-28, 2016.
- (with E. Volontè, M. Bozzini, T. Sauer) Pseudo-Commutative Scaling Matrices and Subdivision Schemes. Subdivision, Refinability, Signals and Approximation, Bernried, Germany, March 2-6, 2015.
- (with E. Volontè) Quasi-Interpolation Operators on Hexagonal Grids with High Approximation Orders in Spaces of Polyharmonic Splines. *SMART 2014*, Pontignano, Siena, Italy, September 28 - October 1, 2014.
- (with M. Cotronei, T. Sauer) A class of anisotropic multiple multiresolution analysis. Multivariate Approximation and Interpolation with Applications, Erice, Italy, September 25-30, 2013.
- (with M. Bozzini, C. Rabut) On a multivariate Multi-Resolution Analysis using generalized (non homogeneous) polyharmonic splines. Multivariate Approximation and Interpolation with Applications, Erice, Italy, September 25-30, 2013.
- (with M. Bozzini) On a new kernel for Sobolev spaces. Twelfth International Conference Zaragoza-Pau on Mathematics, Jaca, Spain, 17-19 September, 2012.
- (with M. Bozzini) Bivariate subdivision schemes generated by reproducing kernels of generalized Sobolev spaces. 3rd Dolomites Workshop on Constructive Approximation and Applications (DWCAA12), Alba di Canazei, Trento, Italy, September 9-14, 2012.

- (with M. Bozzini) On interpolatory subdivision schemes for d-dimensional integer vectors. 2012 International symposium on Applied and Engineering Mathematics (AEM2012), Beijing China, October 26-28, 2012.
- (with M. Bozzini, N. Dyn) On the construction of generators of polyharmonic quasi-interpolation operators. Shanks Lecture and Approximation Theory Conference celebrating Larry Schumaker's 70th birthday, Nashville, USA, May 17-21, 2011.
- (with M. Bozzini) Detection of faults and gradient faults from scattered data con noise. International Conference on Computational and Mathematics Methods in Science and Engineering, Gijón (Asturias), Spain, June 30 - July 3, 2009.
- (with M. Bozzini, L. Lenarduzzi) Non-regular surface approximation. Mathematical Methods for Curves and Surfaces. Tönsberg, Norway, June 26- July 1, 2008.
- (with M. Bozzini, L. Lenarduzzi) On the creation of pre-wavelet generators. Multivariate Approximation and Interpolation con Applications. Ålesund, Norway, August 22–26, 2007.
- (with M. Bozzini, L. Lenarduzzi) Polyharmonic B-splines: an approximation method for scattered data of extra-large size. 1st Dolomites Workshop on Constructive approximation and Applications, Alba di Canazei, Trento, Italy, September 8-12, 2006.
- (with M. Bozzini) Testing methods for 3D interpolation. Multivariate Approximation and Interpolation con Applications, Almunecar, Spain, September 10-14, 2001
- (with M. Bozzini) Approximating surfaces con discontinuities. International Conference on Imaging Science, System and Technology, Las Vegas, USA, July 6-9, 1998.
- (with M. Bozzini) On the problem of recovering surfaces con discontinuities. International Conference on Multivariate Approximation and Interpolation con Applications in CAGD, Signal and Image Processing, Eilat, Israel, September 7-11, 1998.
- (with M. Bozzini) Shape preserving approximation to surface data on lines. International Conference on Computer Aided Geometric Design, Penang, Malaysia, July 4-8, 1994.
- (with R. Tirani) On a method for plotting the solution of an ODE. International Conference on Computer Aided Geometric Design, Penang, Malaysia, July 4-8, 1994.
- (with M. Bozzini, F. De Tisi) Irregularity detection from noisy data. Curves and Surfaces, Chamonix, France, June 10-16, 1993.

## PUBLICATIONS

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### ARTICLES INCLUDED IN SCOPUS/WOS

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1. Bacchelli B., Rossini M. (2021). On MRAs and prewavelets based on elliptic splines. *Results Math.* 76, 40, pp. 1-28.
2. Aràndiga F., Donat R., Romani L., Rossini M. (2020). On the reconstruction of discontinuous functions using multiquadric RBF-WENO local interpolation techniques. *Mathematics and Computers in Simulation*, 176, pp. 4-24.
3. De Marchi S., Erb W., Marchetti F., Perracchione E., Rossini M. (2020). Shape-driven interpolation with discontinuous kernels: Error analysis, edge extraction, and applications in magnetic particle imaging. *SIAM Journal on Scientific Computing*, 42 (2), pp. B472-B491.
4. De Marchi S., Martínez A., Perracchione E., Rossini M. (2019). RBF-Based Partition of Unity Methods for Elliptic PDEs: Adaptivity and Stability Issues Via Variably Scaled Kernels. *Journal of Scientific Computing*, 79 (1), pp. 321-344.

5. Romani L., Rossini M., Schenone D. (2019). Edge detection methods based on RBF interpolation. *Journal of Computational and Applied Mathematics*, 349, pp. 532-547.
6. Cotronei, M., Rossini, M., Sauer, T., Volontè, E. (2019). Filters for anisotropic wavelet decompositions. *Journal of Computational and Applied Mathematics*, 349, pp. 316-330.
7. Rossini M., Volontè E. (2018). On directional scaling matrices in dimension  $d=2$ . *Mathematics and Computers in Simulation*, 147, pp. 237-249.
8. Bozzini M., Rabut C., Rossini M. (2018). Decomposition and reconstruction of multidimensional signals by radial functions with tension parameters. *Advances in Computational Mathematics*, 44 (4), pp. 1003-1040.
9. Rossini M. (2018). Interpolating functions with gradient discontinuities via variably scaled kernels. *Dolomites Research Notes on Approximation*, 11 (Special Issue), pp. 3-14.
10. Rossini M., Volontè E., Quasi-interpolation operators on hexagonal grids with high approximation orders in spaces of polyharmonic splines (2016). *Applied Mathematics and Computation*, 272, pp. 223-234.
11. Bozzini M., Lenarduzzi L., Rossini M., Schaback R. (2015). Interpolation with variably scaled kernels. *IMA Journal of Numerical Analysis*, 35 (1), pp. 199-219.
12. Cotronei M., Ghisi D., Rossini M., Sauer, T. (2015). An anisotropic directional subdivision and multiresolution scheme. *Advances in Computational Mathematics*, 41 (3), pp. 709-726.
13. Bozzini M., Rossini M. (2014). Properties of generators of quasi-interpolation operators of high approximation orders in spaces of polyharmonic splines. *Journal of Computational and Applied Mathematics*, 267, pp. 96-106.
14. Bozzini M., Rossini M., Schaback R., Volontè, E. (2014). Radial kernels via scale derivatives. *Advances in Computational Mathematics*, 41 (2), pp. 277-291.
15. Bozzini M., Lenarduzzi L., Rossini M. (2014). Non-regular surface approximation. *Lecture Notes in Computer Science*, 8177 LNCS, pp. 68-87.
16. Bozzini M., Rossini M., Schaback R. (2013). Generalized Whittle-Matérn and polyharmonic kernels. *Advances in Computational Mathematics*, 39 (1), pp. 129-141.
17. Bozzini M., Rossini M. (2013). The detection and recovery of discontinuity curves from scattered data. *Journal of Computational and Applied Mathematics*, 240, pp. 148-162.
18. Bozzini M., Dyn N., Rossini M. (2011). Construction of generators of quasi-interpolation operators of high approximation orders in spaces of polyharmonic splines. *Journal of Computational and Applied Mathematics*, 236 (4), pp. 557-564.
19. Bozzini M., Lenarduzzi L., Rossini M. (2010). Polyharmonic splines: An approximation method for noisy scattered data of extra-large size. *Applied Mathematics and Computation*, 216 (1), pp. 317-331.
20. Bozzini M., Lenarduzzi L., Rossini M. (2010). Kernel B-splines on general lattices. *Journal of Computational and Applied Mathematics*, 233 (7), pp. 1620-1630.
21. Rossini M. Detecting discontinuities in two-dimensional signals sampled on a grid (2009). *Journal of Numerical Analysis, Industrial and Applied Mathematics*, 4 (3-4), pp. 203-215.
22. Rossini M. (2008). On the construction of polyharmonic B-splines. *Journal of Computational and Applied Mathematics*, 221 (2), pp. 437-446.
23. Rabut C., Rossini M. (2008). Polyharmonic multiresolution analysis: An overview and some new results. *Numerical Algorithms*, 48 (1-3), pp. 135-160.
24. Bozzini M., Rossini M. (2007). Recovering trivariate functions by data on tracks. In *Applied and Industrial Mathematics in Italy II*, V. Cutello, G. Fotia, L. Puccio (eds.), World Scientific, pp. 208-219.

25. Bacchelli B., Bozzini M., Rossini M. (2006). On the errors of multidimensional MRA based on non-separable scaling functions. *International Journal of Wavelets, Multiresolution and Information Processing*, 4(3), pp. 475-488.
26. Bozzini M., Lenarduzzi L., Rossini M., Schaback R. (2004). Interpolation by basis functions of different scales and shapes. *Calcolo*, 41 (2), pp. 77-87.
27. Rossini M. (2003). Detecting objects hidden in the subsoil by a mathematical method. *Computers and Mathematics with Applications*, 45 (1-3), pp. 299-307.
28. Bozzini M., Rossini M. (2003). Numerical differentiation of 2D functions from noisy data (2003) *Computers and Mathematics with Applications*, 45 (1-3), pp. 309-327.
29. Bozzini M., Rossini M. (2000). Approximating surfaces with discontinuities. *Mathematical and Computer Modelling*, 31 (6-7), pp. 193-213.
30. Rossini M. (1998). 2D-Discontinuity Detection from Scattered Data. *Computing*, 61 (3), pp. 215-234.
31. Rossini M. (1997). Irregularity detection from noisy data in one and two dimensions. *Numerical Algorithms*, 16 (3-4), pp. 283-301.
32. De Tisi F., Rossini, M. (1992). Behavior of the beta-splines with values of the parameters  $\beta_2$  negative. *Computer Aided Geometric Design*, 9 (6), pp. 419-423.

#### ARTICLES IN BOOKS/ CONFERENCE PROCEEDINGS

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1. Bozzini M., Ghisi D., Rossini M., Sauer T. (2016). Directional transforms and pseudo-commuting properties. In *Thirteenth International Conference Zaragoza-Pau on Mathematics and its Applications*, Monogr. Mat. García Galdeano, 40, Prensas Univ. Zaragoza, pp. 29-41.
2. Bozzini M., Rossini M. (2009). Detection of faults and gradient faults from scattered data with noise. *Proceedings of the 2009 International Conference on Computational and Mathematical Methods in Science and Engineering*, J. Vigo-Aguiar, P. Alonso, S. Oharu, E. Venturino, B. Wade (eds.), pp. 189-200.
3. Bozzini M., Rabut C., Rossini M. (2007). A multiresolution analysis with a new family of polyharmonic B-splines. In *Curve and Surface Fitting: Avignon 2006*, A. Cohen, J. L. Merrien and L. L. Schumaker (eds.), Nashboro Press, pp. 51-60.
4. Rossini M. (2005). Detecting discontinuities in two dimensional sampled signals by polyharmonic pre-wavelets. In *ICNAAM 2005*, T.E. Simos, G. Psihoyios and Ch. Tsitouras (eds.), Wiley-VCH, pp. 635-638.
5. Bozzini M., Rossini M. (2002). Testing methods for 3D scattered data interpolation. In *Multivariate Approximation and Interpolation with Applications* (Almuñécar, 2001), Monogr. Real Acad. Ci. Exact. Fís.-Quím. Nat. Zaragoza, 20, pp. 111-135.
6. Bozzini M., Rossini M. (2000). On a method of numerical differentiation. In *Curve and Surface Fitting: Saint-Malò 1999*. Albert Cohen, Christophe Rabut, and Larry L. Schumaker (eds.) Vanderbilt University Press, Nashville, TN, pp. 85-94.
7. Bozzini M., Rossini M. (1998). Approximating surfaces with discontinuities. *Proceedings of the International Conference on Imaging Science, System and Technology*, H. Arabnia (ed.) CSREA Press, pp. 351-357.
8. Rossini M., Tirani R. (1995). On a method for plotting the solution of an ODE which mimics its graph (1995). *Journal of Physical Science* 6, pp. 15-27.
9. Bozzini M., De Tisi F., Rossini M. (1994). Irregularity detection from noisy data with wavelets. In *Wavelets, Images, and Surface Fitting*. P. J. Laurent, A. Le Mehaute, L. L. Schumaker (eds.), AK Peters Ltd., Wellesley, pp. 59-66.

10. Bozzini M., Rossini M. (1994). An approximation method based on the second kind Chebyshev polynomials. In *Non Linear Numerical Methods and Rational Approximation, II*, Math. Appl., 296, Kluwer Acad. Publ., Dordrecht, pp. 201-216.

#### TECHNICAL REPORTS/PREPRINTS

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- On the expression and the evaluation of cardinal GB-splines, with L. Romani and A. Viscardi. In preparation.
- Adaptive and accurate approximation of discontinuous functions with variably scaled kernels, with R. Cavoretto, A. De Rossi and W. Erb. In preparation.
- M. Bozzini, M. Rossini, T. Sauer, E. Volontè (2019). Anisotropic scaling matrices and subdivision schemes (<http://hdl.handle.net/10281/190382>).

#### TEACHING (UNIVERSITÀ DI MILANO - BICOCCA)

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- Splines: basics and CAGD applications (Joint PhD Program in Mathematics Milano-Bicocca Pavia INdAM) November - December 2020.
- Approximation models and methods (Master Degree in Mathematics) A.Y. 2014/2015, 2016/2017, 2018/2019, 2020/2021.
- Geometric Modeling and Computational Graphics (Master Degree in Mathematics) A. Y. 2017/2018.
- Calculus (Degree in Computer Sciences) A. Y. 2017/2018.
- Numerical Calculus (Degree in Mathematics) A. Y. 2012/2013, 2010/2011.
- Computer Aided Design (Degree in Mathematics) A. Y. 2011/2012.
- Scientific Calculus (Master Degree in Mathematics) A. Y. 2009/2010.
- Computational Geometry (Degree in Mathematics) A. Y. 2004/2005 - A. Y. 2008/2009.
- Numerical Analysis (Master Degree in Computer science) A. Y. 2002/2003.
- Numerical Analysis (Degree in Computer Science) A. Y. 2000/2001.
- 2 weeks University introductory warm-up Math course (Precorsi di Matematica) 2017 -2019, 2021.

#### SUPERVISOR, CO-SUPERVISOR ACTIVITY

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##### DEGREE IN MATHEMATICS

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1. Francesca Maria Daverio, tentative title: Forma baricentrica delle curve di Bézier razionali. A. Y. 2021-2022 (supervisor).
2. Iulia Andreea Ilban, tentative title: Schemi di suddivisione per dati con rumore. A. Y. 2021-2022 (supervisor)
3. Marta Gritti: Curve Beta-Spline. A. Y. 2020-2021 (supervisor).
4. Eleonora Maiocchi: Spline generalizzate. A. Y. 2020-2021 (supervisor).
5. Michele Bartesaghi: Interpolazione polinomiale via fake nodes: mitigare i fenomeni di Runge e di Gibbs. A. Y. 2020-2021 (supervisor).
6. Giulia Tancredi: Curve di Bezier e B-spline razionali. A. Y. 2018-2019 (supervisor).
7. Elisa Torriani: Interpolazione razionale baricentrica. A. Y. 2018-2019 (supervisor).
8. Damiano Mazzucchelli: Metodi ENO/WENO e applicazioni. A. Y. 2018-2019 (supervisor).



9. Alessia Azzolina: Curve spline per la grafica. A. Y. 2017-2018 (supervisor).
10. Tresa de Marta: Edge detection and segmentation for digital images. A. Y. 2017-2018 (supervisor).
11. Anna Perego: Schemi di suddivisione univariati. A. Y. 2014-2015 (supervisor).
12. Giulia Pelizzoli: Schemi di suddivisione geometrici. A. Y. 2013-2014 (supervisor).
13. Caterina Colombo: Ricostruzione di Superfici con singolarità in schemi di suddivisione. A. Y. 2012-2013 (co-supervisor).
14. Christian Colombo: Teoria e applicazioni delle B-spline esponenziali. A. Y. 2009-2010 (co-supervisor).
15. Elena Volontè: Sulla costruzione di curve quaternioniche. A. Y. 2009-2010 (supervisor).
16. Silvia Trezzi: Interpolazione shape-preserving. A. Y. 2003-2004 (supervisor).

#### MASTER DEGREE IN MATHEMATICS

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1. Giulia Tancredi, tentative title: Data-dependent greedy kernel algorithms. A. Y. 2021-2022 (supervisor).
2. Matteo Caoduro: On the problem of recovering discontinuous functions from scattered data. A. Y. 2019-2020 (supervisor).
3. Gianluca Audone: Machine Learning: a kernel perspective. A. Y. 2018-2019 (supervisor).
4. Lidia Raffa: Interpolazione con basi radiali razionali. A. Y. 2016-2017 (supervisor).
5. Federica Figlia: Il metodo di partizione dell'unità con basi radiali. A. Y. 2015-2016 (supervisor).
6. Morena Manco: Le basi radiali nella registrazione di immagini. A. Y. 2015-2016 (supervisor).
7. Fabio Carnevali: Interpolazione con basi radiali a scala variabile. A. Y. 2013-2014 (supervisor).
8. Federica Origgi: Soluzione particolare dell'equazione di Poisson con spline poliarmoniche. A. Y. 2013-2014 (supervisor).
9. Daniele Ghisi: Alcune considerazioni sulle suddivisioni multiple anisotrope. A. Y. 2012-2013 (co-supervisor).
10. Elena Volontè: Kernels via scaling. A. Y. 2011-2012 (co-supervisor).
11. Alessandro Buccini: Schemi di suddivisione bivariati con basi non separabili. A. Y. 2011-2012 (co-supervisor).
12. Silvia Ros: Sulle spline generalizzate. A.A. 2009-2010 (supervisor).
13. Silvia Trezzi: Sulla costruzione di B-spline poliarmoniche. A. Y. 2005-2006 (supervisor).

#### PH. D. IN PURE AND APPLIED MATHEMATICS

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Elena Volontè: Subdivision Schemes for Curve Design and Image Analysis. 2014-2018, co-supervisor with Prof. Kai Hormann.

#### ACADEMIC AND SCIENTIFIC SERVICES

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2015 - 2018	Member of the board of Dipartimento di Matematica e Applicazioni.
2013 -	Member of the student guidance committee of Dipartimento di Matematica e Applicazioni.
2014, 2017-2022	Member of the Dipartimento di Matematica e Applicazioni committee for the evaluation and allocation of Academic funds among the research groups of the department.

- 2021 - Coordinator of the Italian Approximation Network RITA (Rete ITaliana di Approssimazione) <https://sites.google.com/site/italianapproximationnetwork/>.
- July 2021 Member of the Ph.D. selection committee for the Joint PhD Program in Mathematics Milano - Bicocca Pavia INdAM.
- Oct. 2021- Member of Joint committee of teachers and students (commissione paritetica docenti e studenti) for the Degree and Master Degree in Mathematics.
- 2010 - Journal Referee: Advances in Computational Mathematics, Applied Mathematics and Computation, Applied Mathematics Letters, BIT Numerical Mathematics, Journal of Approximation Theory, Journal of Computational and Applied Mathematics, Mathematics and Computers in Simulation, Numerical Algorithms, Siam Journal on Numerical Analysis.

### PROFESSIONAL MEMBERSHIPS

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- 1996 - Istituto Nazionale di Alta Matematica (IndAM) - GNCS.
- 2020 - Unione Matematica Italiana (UMI).

Milano, December 28, 2021

Milvia Rossini