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CURRICULUM VITAE

STEFANO DE MARCHI

Date of Birth:	December 17, 1962
Place of Birth:	Candiana (Padova), Italy
Current Address:	Dipartimento di Informatica S.da Le Grazie, 15 University of Verona Verona, ITALY I-37134
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Degrees

Degree	(Mathematics)	1987	University of Padua;
M.Sc.	(Applied Mathematics)	1991	University of Padua;
Ph.D.	(Computational and Applied Math.)	1994	University of Padua.

Positions Held

- Assistant Professor of *Numerical Analysis* - Department of Mathematics and Computer Science, University of Udine, 1995-2001.
- Assistant Professor of *Numerical Analysis* - Department of Computer Science, University of Verona, 2001-2005.

- Associate Professor of *Numerical Analysis* - Department of Computer Science, University of Verona, 2005-.

Scholarships/Grants

1. IBM of Italy, Scholarship for 2 years at the University of Padua, 1990-1991.
2. ERASMUS Scholarship for 6 months University of Sunderland (England), 1991.
3. CNR of Italy, Grant within the project "Sistema Lagunare Veneziano", 1994.
4. Post-Doctorate Grant for 2 years, 1995. stopped in December 1995 when became Assistant Professor.
5. CNR of Italy, Grant within the program "Short-term mobility", October 1998 and June 1999 (see below).
6. DAAD (Deutscher Akademisher Austauschdienst), Grant within the program "Studientaufenthalte ausländischer Wissenschaftler", year 1999 (see below).

Visiting Professorships

- Visiting Professor at the Department of Mathematics and Statistics, University of Calgary (Canada), October 8-31, 1997 and November 5-12, 1999.
- Visiting Professor at the "Fachbereich Mathematik, Universität Dortmund (Germany)", October 2-23, 1998 (within the program *Short term mobility* year 1998) and May 31 - June 23, 1999 (within the program *Short term mobility* year 1999).
- Visiting Professor at the "Fachbereich Mathematik, Universität Giessen (Germany)", November 29 - December 19, 1999 within the DAAD program "Studient

- Visiting Professor at the Numerical Analysis chair, Universität Göttingen (Germany)", June 29 - July 10, 2001 and August 23-30, 2001, October 1-15, 2006

Scholarly Addresses

1. S. De Marchi, F. Angrilli, A. Doria, "3-Variate Approximating Splines Applied to Robot Calibration", *Innovative Methods in Numerical Analysis* , Bressanone (Italy), September 1992.

2. M. Morandi Cecchi, S. De Marchi, "Fractal interpolation functions for a class of finite elements", *Curves and Sufaces*, Chamonix-Mont-Blanc, France, June 1993.

3. M. Morandi Cecchi, S. De Marchi, "Unstructured grids of triangles for the solution of systems of hyperbolic equations", *Third SIAM Conference on Geometric Design*, Tempe, Arizona, November 1993.

4. S. De Marchi, M. Morandi Cecchi, "Interpolazioni ed Approssimazioni su Simplices", Italian National Conference on Numerical Analysis, Montecatini Terme, April 1994.

5. S. De Marchi, M. Morandi Cecchi, "Can irregular subdivisions preserve convexity? ", NATO-ASI School on *Approximation Theory, Wavelets and Applications*, Acquafredda di Maratea, Italy, May 1994.

6. S. De Marchi, M. Morandi Cecchi, "Towards an interpolating surface to scattered data", *Fourth SIAM Conference on Geometric Design*, Nashville, Tennesee, November 1995.

7. M. Morandi Cecchi, S. De Marchi, E. Secco, "Un modello idrodinamico per lo studio del moto della Laguna di Venezia", *Sistema Lagunare Veneziano*, Venezia, Italy, May 1996.

8. M. Vianello, S. De Marchi, "A vector-valued version of Peano's Kernel Theorem", Third International Conference on *Functional Analysis and Approximation Theory*, Acquafredda di Maratea, Italy, Sep. 1996.

9. L. Bos, S. De Marchi: "Limiting Values Under Scaling of Lebesgue Functions for Polynomial Interpolation on Spheres", Third Inter. Conference on *Mathematical Methods for Curves and Surfaces*, Lillehammer, Norway, July 1997.

10. S. De Marchi, L. Bos: "Punti di Interpolazione Ottimali e Determinanti di Vandermonde Generalizzati",*Calcolo Scientifico e Didattica*, Roma, Italy, Feb. 1998.

11. S. De Marchi, L. Bos: "Limiting Values Under Scaling for Polynomial Interpolation on Spheres and Manifolds", Third Inter. Conference on *Multivariate Approximation 1998*, Bommerholz, Germany, Sept.-Oct. 1998.

12. S. De Marchi: "Determinanti di Vandermonde generalizzati e punti d'interpolazione di Fekete", *XVI Convegno UMI*, Napoli, Sept. 1999.

13. S. De Marchi, L. Bos: "Fekete's Points for Generalized Vandermonde Determinants", *Sixth SIAM Conference on Geometric Design*, Albuquerque, Nov. 1999.

14. S. De Marchi, D. Fasoli: "LABSUP: a package for C^1 interpolating surfaces of scattered data", Fifth Int. Conference on*"Mathematical methods for curves and surfaces"*, Oslo, 29 June - 4 July 2000.

15. S. De Marchi, L. Bos, "Limiting Values under Scaling of the Lebesgue function for polynomial interpolation on analytic manifolds", Forth International Conference on *Functional Analysis and Approximation Theory*, Acquafredda di Maratea, Italy, Sep. 2000.

16. S. De Marchi, Seminars at the Universities of Padua, Udine, Giessen, München (1999-2000).

17. S. De Marchi: "On computing the factors of generalized Vandermonde determinants", WSES Int. Conference on *Applied and Theoretical Mathematics*, Vravrona, Dec. 2000.

18. S. De Marchi, *A. Sommariva* e M. Vianello: "A fast Chebyshev solver for nonlinear integral equations", *Algorithms for Approximations IV*, University of Huddersfield, West Yorkshire, 15-20 July 2001.

19. S. De Marchi, *A. Pica*: "Some applications of data-dependent triangulations", *SIMAI 2002*, Chia Laguna, 26-31 May 2002.

20. S. De Marchi, M. Vianello: "Fast evaluation of discrete integral transforms by Chebyshev and Leja polynomial approximation", *Constructive Function Theory*, Varna (Bulgaria), 19-23 June 2002.

21. S. De Marchi (**Invited speaker**): "Some results and applications of Leja sequences", "Teoria Aproksymacji", Kraków 23-29/9/2002.

22. S. De Marchi, R. Schaback e H. Wendland: "Sulla ricerca di punti ottimali indipendenti dai dati per interpolazioni con RBF", Giornate di Studio su funzioni spline e funzioni radiali, Torino 6-7 Feb. 2003.

23. S. De Marchi, M. Caliari e M. Vianello: "Numerical experiments on bivariate polynomial interpolaition at new nodal sets", Splines and Wavelets, S. Petersburg 3-8 July 2003.

24. S. De Marchi (**Invited speaker**): "Optimal Point Locations for Radial Basis Functions Interpolation", "Teoria Operatorow", Kraków 22-27/9/2003.

25. S. De Marchi, *M. Morandi Cecchi*: "Generalized Vandermonde determinants, Schur functions and blossoming", *Classical and New approximation spaces: theory and applications*, Roma, Feb. 2004.

26. S. De Marchi: "Insiemi di nodi quasi-ottimali per interpolazioni su domini bidimensionali", *SIMAI 2004*, Venezia, Sept. 2004.

27. S. De Marchi, "On Xu polynomial interpolation formula in two variables "**Constructive Functions Tech-04** , Atlanta (Usa), 7-9 Nov. 2004.

28. S. De Marchi, "Interpolation points and interpolation formulae on the square", Workshop 7 *Approximation Theory*, at the conference **Foundations of Computational Mathematics**, Santander (Spain), 7- 9 July 2005.

29. S. De Marchi(**Invited speaker**), "On optimal interpolation points for radial basis functions interpolatioon", conferenza in onore dei 60 anni di Robert Schaback, Göttingen, 25-26 novembre 2005.

30. *S. De Marchi*, M. Caliari e M. Vianello, "Bivariate Lagrange interpolation at the Padua points: computational aspects", Recent Progress in Splines and Wavelets approximations, Roma 14-16/6/06.

31. S. De Marchi, "Opening remarks", First Dolomites Workshop on Constructive Approximation and Applications, Alba di Canazei 8/9/2006

32. S. De Marchi, "Mathematics and wine", Italian Sommelier Association, Padua delegation, Abano Terme 23/11/06.

33. S. De Marchi, "Stability bounds for multivariate kernel-based recovery processes", Biennal meeting of the "Gruppo Nazionale di Calcolo Scientifico", Montecatini Terme 6/2/2008.

Organization of Conferences

- *Innovative Methods in Numerical Analysis* , Bressanone, Sept. 1992..
- *Approximation of Curves and Surfaces* , Minisymposium in Firenze, 8-9 giugno 2000.
- *First Dolomites Workshop on Constructive Approximation*, in honour of 50 years of professional activity of Prof. Walter Gautschi, Alba di Canazei, 2-8 settembre 2006: organizator and member of the scientific committee.
- *Dolomites Research Week on Approximation*, Alba di Canazei, 3-7 settembre 2007: organizator.
- *Dolomites Research Week on Approximation*, Alba di Canazei, 8-11 settembre 2008: organizator.

Papers in Refereed Journals

1. Doria, A., Angrilli, F. and De Marchi, S., *Inverse kinematics robot calibration by splines functions*. Appl. Math. Modelling, Vol. 17(1993), 492–498.

2. De Marchi, S., Morandi Cecchi, M., *The polynomial approximation in the finite element method*. Jour. Comp. Appl. Math., Vol. 57(1995), 99–114.

3. De Marchi, S., Morandi Cecchi, M., *Reference Functional and Characateristic Space for Lagrange and Bernstein Operators*. Approx. Theory & its Appl., Vol. 11(4)(1995), 6–14.

4. De Marchi S. , Vianello, M. *Peano's Kernel Theorem for vector-valued functions and some applications.* Numer. Func. Anal. Optim., 17 (1&2) (1996), 57–64.

5. De Marchi S. , Vianello, M. *Peano's Kernel Theorem for Vector-Valued Functions II: A weak version in Normed Spaces.* Numer. Func. Anal. Optim., 18(1&2)(1997), 65–74.

6. De Marchi, S., *On Computing derivatives for C^1 interpolation schemes: an optimization.* Computing, 60(1)(1998), 29–53.

7. Bos, L., De Marchi, S. *Limiting Values Under Scaling of Lebesgue Function for Polynomial Interpolation on Spheres.* J. Approx. Theory, 96(2)(1999), 366–377.

8. Morandi Cecchi, M., De Marchi, S., Fasoli, D.. *A Package for Representing $\mathcal{C}^1$ interpolating surfaces: Application to the Lagoon of Venice's bed*, Numer. Algorithms, 20(2-3) (1999), 197–215.

9. Bos, L., De Marchi, S. *Fekete points for bivariate polynomials restricted to $y = x^m$.* East J. Approx., 5(1)(2000), 1–12.

10. De Marchi, S. *Polynomials arasing in factoring generalized Vandermonde determinants: an algorithm for computing their coefficients.* Math. Comput. Modelling, 34 (2001), 271–281.

11. De Marchi, S., Vianello, M. *Approximating the approximant: a numerical code for polynomial compression of discrete integral operators.* Numer. Algorithms, 28(1) (2001), 101–116.

12. De Marchi, S. *Polynomials arasing in factoring generalized Vandermonde determinants II: a condition for monicity.* Appl. Math. Lett., 15(5) (2002), 627–632.

13. Ligun, A., Timchenko, S., Schumeiko, A. and De Marchi, S. *An interpolant defined by subdivision: analysis of the error* J. Comput. Applied Math. 145 (2002), 71–88.

14. Bos, L., De Marchi, S. *On the Limit Under Scaling of Polynomial Lagrange Interpolation on Analytic Manifolds.* Supp. *Rend. Circolo Matematico di Palermo* serie II, n. 68 (2002), 303–314.

15. S. De Marchi *On optimal point locations for radial basis interpolation: computational aspects*, Rend. Sem. Mat. Torino, Vol. 61(3), 343-358 (2003).

16. De Marchi, S. e Roveredo C. *On blossoming in integer Müntz spaces*, Int. Math. J. Vol. 5(1), 61–66 (2004).

17. De Marchi, S. *On Leja sequences: some results and applications*, Appl. Math. Comput. 152(3), 621–647 (2004).

18. S. De Marchi, R. Schaback and H. Wendland *Near-Optimal Data-independent Point Locations for Radial Basis Function Interpolation*, Adv. Comput. Math., Vol.23(3), pp. 317-330 (2005).

19. M. Caliari, S. De Marchi and M. Vianello *Bivariate polynomial interpolation on the square at new nodal sets*, Applied Math. Comput. vol. 165/2, pp. 261-274 (2005).

20. L. Bos, M. Caliari, S. De Marchi e M. Vianello *A numerical study of the Xu polynomial interpolation formula in two variables*, Computing, vol. 76(3-4), pp. 311-324 (2006).

21. L. Bos, M. Caliari, S. De Marchi and M. Vianello *Bivariate interpolation at Xu points: results, extensions and applications*, Elec. Trans. Numer. Anal. (ETNA), vol. 25, pp. 1-16 (2006).

22. L. Bos, S. De Marchi e M. Vianello *The Lebesgue constant for the Xu interpolation points*, J. Approx. Theory, Vol. 141(2), pp. 134-141 (2006).

23. S. De Marchi e M. Morandi Cecchi *Polynomials arising in factoring generalized Vandermonde determinants III :computation of their roots*, Neural, Parallel and Sci. Comput., Vol. 14, pp. 25-38 (2006).

24. L. Bos, M. Caliari, S. De Marchi, M. Vianello e Y. Xu *Bivariate Lagrange interpolation at Padua points: the generating curve approach*, J. Approx. Theory, Vol. 143(1), pp. 15-25 (2006).

25. S. De Marchi e I. Raykov *Parametric method for global optimization in Hilbert Spaces*, J. Optim. Theory Appl. (JOTA), Vol. 130(3), pp. 411-430 (2006).

26. M. Caliari, S. De Marchi, R. Montagna e M. Vianello *HYPER2D: a numerical code for hyperinterpolation at Xu points on rectangles*, Appl. Math. Comput., Vol. 183(1), pp. 1138-1147 (2006).

27. L. Bos, S. De Marchi, M. Vianello *Bivariate Lagrange interpolation at Padua points: the ideal theory approach*, Num. Math. 108(1), pp. 43-57 (2007).

28. De Marchi, S., *Matematics and Wine*. Appl. Math. Comput. 192, pp. 180-190 (2007).

29. M. Caliari, S. De Marchi e M. Vianello, *Hyperinterpolation on the square* J. Comput. Appl. Math. 210(1-2) pp 78-83, (2007).

30. S. De Marchi, M. Redivo-Zaglia e M. Vianello *Guest-Editor Preface* "1st Dolomites Workshop on Approximation Theory and Applications" Numer. Algorithms 45 (1-4),pp. 1–9 (2007).

Papers in Conference Proceedings

31. De Marchi S. , Vianello, M. and Zanovello, R. *Splitting Functions and Numerical Analysis of WR-type Methods and Stationary Problems*, in Mathematics of Computation 1943-1993: a half-century of computational mathematics, W. Gautschi (Ed.), AMS serie in *Symposia in Applied Mathematics*, (1994), 281–285.

32. De Marchi, S., Morandi Cecchi, M., *Fractal interpolation functions for a class of finite elements*. In Wavelets, Images and Suface Fitting, edited by P.-J. Laurent, A. Le Méhauté and L. L. Schumaker, A. K. Peters, (1994), 189–196.

33. De Marchi, S., Morandi Cecchi, M. *Can irregular subdivisions preserve convexity ?* , in Approximation Theory, Wavelets and Applications, S.P. Singh (Ed.), Kluwer, (1995), 325–334.

34. Morandi Cecchi, M., De Marchi, S., Secco, E. *Un modello Idrodinamico per lo studio della Laguna di Venezia* , Proocedings of the Conference "Sistema Lagunare Veneziano", Vol. 2, pp. 1530–1555, 2000.

35. De Marchi, S., *On computing the factors of generalized Vandermonde determinants*, in Recent Advances in Applied and Theorethical Mathematics, N. Mastronakis (Ed.), (2000), 140–144.

36. De Marchi, S., Pica A. *Some applications of data-dependent triangulations*, Convegno SIMAI, Chia Laguna (2002).

37. De Marchi, S. and Vianello M. *Fast evaluation of descrete integral operators by Chebyshev and Leja polynomial approximation* , "Constructive Function Theory", Varna 2002 (B. Bojanov, Ed.), DARBA, Sofia, pp.347-353 (2003).

38. De Marchi, S., *Some recent results on Leja sequences*, in Teoria Aproksymacji, Kolo Matematyków Studentów UJ (Ed.), 25-51 (2003).

39. De Marchi, S., *Radial basis functions interpolation and optimal center locations*, in Teoria Operatorów, Kolo Matematyków Studentów UJ (Ed.), 55-67 (2004).

40. De Marchi, S., *Sets of near-optimal points for interpolation on the square*, in *APPLIED AND INDUSTRIAL MATHEMATICS IN ITALY* Proceedings of the 7th Conference Venice, Italy 20 - 24 September 2004 Ed. M. Primicerio et al., pp. 45-55 (2005)

Papers Accepted and in Press

41. L. Bos e S. De Marchi, *Univariate Radial Basis Functions with Compact Support Cardinal Functions* East J. Approx (2008), in press.

42. M. Caliari, S. De Marchi e M. Vianello *Bivariate Lagrange interpolation at the Padua points: computational aspects* J. Comput. Appl. Math., available on line (2007).

43. M. Caliari, S. De Marchi e M. Vianello *Hyperinterpolation in the cube* Comput. Math. Appl. (2007), in press

Papers Submitted

44. M. Caliari, S. De Marchi e M. Vianello *Padua2D: Lagrange Interpolation at Padua Points on Bivariate Domains* , submitted to ACM Trans. Math. Soft. (2007).

45. S. De Marchi e R. Schaback *Stability of Kernel-Based Interpolation*, submitted to Adv. Comput. Math. (2007).

Relevant Technical Reports

46. De Marchi, S., *Frattali: Scienza ed Arte Insieme. INGENIUM*, (VI), 1988 (In Italian).

47. De Marchi, S. *A Short Survey of Fractal Interpolation Curves and Surfaces*, Department of Pure and Applied Mathematics, University of Padua, TR 2/1994.

48. De Marchi, S., Morandi Cecchi M. *The Dyadic Iterative Interpolation Method and Some Extensions*, Department of Pure and Applied Mathematics, University of Padua, TR 10/1994.

49. De Marchi, S., Fasoli, D. and Morandi Cecchi, M.. **LABSUP**. *A* **LA***boratory for* **B***ivariate* $\mathcal{C}^1$ **SU***rfaces and* **P***atches*, Mathematical Background and User's Guide. Department of Pure and Applied Mathematics, University of Padua, TR 9/1996.

50. De Marchi, S. *Generalized Vandermonde determinants, Toeplitz matrices and the Polynomial Division Algorithm*, Universität Dortmund, Ergebnisberichte Angewandte Mathematik, nr. 176, June 1999.

51. De Marchi, S. *Generalized Vandermonde determinants, Toeplitz matrices and Schur functions.* Rapporto di Ricerca nr. 2/2000, Dipartimento di Matematica e Informatica, Università di Udine.

Monographs

52. De Marchi, S. *Funzioni Spline Univariate.* Editrice Universitaria *FORUM*, Udine, 1999.