Roberto Cavoretto

List of Publications by Year
in descending order

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64 papers	852 citations	394421 19 h-index	526287 27 g-index
66 all docs	66 docs citations	66 times ranked	395 citing authors

#	Article	IF	Citations
1	On the search of the shape parameter in radial basis functions using univariate global optimization methods. Journal of Global Optimization, 2021, 79, 305-327.	1.8	51
2	Efficient computation of partition of unity interpolants through a block-based searching technique. Computers and Mathematics With Applications, 2016, 71, 2568-2584.	2.7	45
3	Optimal Selection of Local Approximants in RBF-PU Interpolation. Journal of Scientific Computing, 2018, 74, 1-22.	2.3	41
4	An introduction to the Hilbert-Schmidt SVD using iterated Brownian bridge kernels. Numerical Algorithms, 2015, 68, 393-422.	1.9	39
5	Adaptive meshless refinement schemes for RBF-PUM collocation. Applied Mathematics Letters, 2019, 90, 131-138.	2.7	33
6	A Trivariate Interpolation Algorithm Using a Cube-Partition Searching Procedure. SIAM Journal of Scientific Computing, 2015, 37, A1891-A1908.	2.8	32
7	A RBF partition of unity collocation method based on finite difference for initialâ€“boundary value problems. Computers and Mathematics With Applications, 2018, 75, 4066-4090.	2.7	31
8	Spherical interpolation using the partition of unity method: An efficient and flexible algorithm. Applied Mathematics Letters, 2012, 25, 1251-1256.	2.7	28
9	OpenCL Based Parallel Algorithm for RBF-PUM Interpolation. Journal of Scientific Computing, 2018, 74, 267-289.	2.3	28
10	Fast and accurate interpolation of large scattered data sets on the sphere. Journal of Computational and Applied Mathematics, 2010, 234, 1505-1521.	2.0	27
11	Partition of unity interpolation using stable kernel-based techniques. Applied Numerical Mathematics, 2017, 116, 95-107.	2.1	27
12	A two-stage adaptive scheme based on RBF collocation for solving elliptic PDEs. Computers and Mathematics With Applications, 2020, 79, 3206-3222.	2.7	26
13	A class of spline functions for landmarkâ€based image registration. Mathematical Methods in the Applied Sciences, 2012, 35, 923-934.	2.3	25
14	An adaptive LOOCV-based refinement scheme for RBF collocation methods over irregular domains. Applied Mathematics Letters, 2020, 103, 106178.	2.7	25
15	A meshless interpolation algorithm using a cell-based searching procedure. Computers and Mathematics With Applications, 2014, 67, 1024-1038.	2.7	24
16	Robust Approximation Algorithms for the Detection of Attraction Basins in Dynamical Systems. Journal of Scientific Computing, 2016, 68, 395-415.	2.3	24
17	Fast computation of triangular Shepard interpolants. Journal of Computational and Applied Mathematics, 2019, 354, 457-470.	2.0	24
18	Lobachevsky spline functions and interpolation to scattered data. Computational and Applied Mathematics, 2013, 32, 71-87.	1.3	21

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19	Scattered and track data interpolation using an efficient strip searching procedure. Applied Mathematics and Computation, 2011, 217, 5949-5966.	2.2	19
20	Reliable approximation of separatrix manifolds in competition models with safety niches. International Journal of Computer Mathematics, 2015, 92, 1826-1837.	1.8	19
21	Adaptive Radial Basis Function Partition of Unity Interpolation: A Bivariate Algorithm for Unstructured Data. Journal of Scientific Computing, 2021, 87, 1.	2.3	19
22	A numerical algorithm for multidimensional modeling of scattered data points. Computational and Applied Mathematics, 2015, 34, 65-80.	1.3	18
23	Error indicators and refinement strategies for solving Poisson problems through a RBF partition of unity collocation scheme. Applied Mathematics and Computation, 2020, 369, 124824.	2.2	18
24	Partition of unity interpolation on multivariate convex domains. International Journal of Modeling, Simulation, and Scientific Computing, 2015, 06, 1550034.	1.4	17
25	Hermiteâ€“Birkhoff interpolation on scattered data on the sphere and other manifolds. Applied Mathematics and Computation, 2018, 318, 35-50.	2.2	17
26	Numerical integration on multivariate scattered data by Lobachevsky splines. International Journal of Computer Mathematics, 2013, 90, 2003-2018.	1.8	14
27	Adaptive detection and approximation of unknown surface discontinuities from scattered data. Simulation Modelling Practice and Theory, 2009, 17, 1059-1070.	3.8	12
28	An Efficient Trivariate Algorithm for Tetrahedral Shepard Interpolation. Journal of Scientific Computing, 2020, 82, 1.	2.3	12
29	Two and Three Dimensional Partition of Unity Interpolation by Product-Type Functions. Applied Mathematics and Information Sciences, 2015, 9, 1-8.	0.5	12
30	Partition of Unity Methods for Signal Processing on Graphs. Journal of Fourier Analysis and Applications, 2021, 27, 1.	1.0	11
31	Graphical Representation of Separatrices of Attraction Basins in Two and Three-Dimensional Dynamical Systems. International Journal of Computational Methods, 2017, 14, 1750008.	1.3	10
32	Comparing disease-control policies for interacting wild populations. Nonlinear Dynamics, 2015, 79, 1881-1900.	5.2	9
33	A numerical technique based on Bâ€spline for a class of timeâ€fractional diffusion equation. Numerical Methods for Partial Differential Equations, 2023, 39, 45-64.	3.6	9
34	Approximation of Dynamical Systemâ€™s Separatrix Curves. , 2011, , .		7
35	Spectral analysis and preconditioning techniques for radial basis function collocation matrices. Numerical Linear Algebra With Applications, 2012, 19, 31-52.	1.6	7
36	RBFCUB: A numerical package for near-optimal meshless cubature on general polygons. Applied Mathematics Letters, 2022, 125, 107704.	2.7	7

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37	Geometric modeling and motion analysis of the epicardial surface of the heart. Mathematics and Computers in Simulation, 2010, 81, 608-622.	4.4	6
38	Local interpolation schemes for landmark-based image registration: A comparison. Mathematics and Computers in Simulation, 2014, 106, 1-25.	4.4	6
39	Analysis of Compactly Supported Transformations for Landmark-based Image Registration. Applied Mathematics and Information Sciences, 2013, 7, 2113-2121.	0.5	6
40	Achieving accuracy and efficiency in spherical modelling of real data. Mathematical Methods in the Applied Sciences, 2014, 37, 1449-1459.	2.3	5
41	An Experimental Study of Univariate Global Optimization Algorithms for Finding the Shape Parameter in Radial Basis Functions. Communications in Computer and Information Science, 2020, , 326-339.	0.5	5
42	Multidimensional Lobachevsky Spline Integration on Scattered Data. Applied Mathematics and Information Sciences, 2014, 8, 145-151.	0.5	5
43	Radial Basis Functions and Splines for Landmark-Based Registration of Medical Images. , 2010, , .		4
44	Adaptive procedures for meshfree RBF unsymmetric and symmetric collocation methods. Applied Mathematics and Computation, 2020, 382, 125354.	2.2	4
45	A Local IDW Transformation Algorithm for Medical Image Registration. , 2008, , .		3
46	RBF-PU interpolation with variable subdomain sizes and shape parameters. AIP Conference Proceedings, 2016, , .	0.4	3
47	A unified version of efficient partition of unity algorithms for meshless interpolation. , 2012, , .		2
48	Landmark-based image registration using Gneiting's compactly supported functions. , 2012, , .		2
49	A two-strain ecoepidemic competition model. Theoretical Ecology, 2015, 8, 37-52.	1.0	2
50	Computing Topology Preservation of RBF Transformations for Landmark-Based Image Registration. Lecture Notes in Computer Science, 2015, , 96-108.	1.3	2
51	Development of an Accurate Method for Motion Analyses of the Heart Wall Based on Medical Imagery. Lecture Notes in Computer Science, 2012, , 248-255.	1.3	2
52	Lung assist devices influence cardio-energetic parameters: Numerical simulation study. , 2015, 2015, 4515-9.		1
53	Approximating basins of attraction for dynamical systems via stable radial bases. AIP Conference Proceedings, 2016, , .	0.4	1
54	Hermite-Birkhoff interpolation on arbitrarily distributed data on the sphere and other manifolds. AIP Conference Proceedings, 2016, , .	0.4	1

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55	On the topology preservation of Gneitingâ€™s functions in image registration. Signal, Image and Video Processing, 2017, 11, 953-960.	2.7	1
56	Topology analysis of global and local RBF transformations for image registration. Mathematics and Computers in Simulation, 2018, 147, 52-72.	4.4	1
57	An Adaptive LOOCV-Based Algorithm for Solving Elliptic PDEs via RBF Collocation. Lecture Notes in Computer Science, 2020, , 76-83.	1.3	1
58	Visualization Aspects of Motion Tracking and Analysis of the Outer Surface of the Left Ventricle. Biomedizinische Technik, 2013, 58 Suppl 1, .	0.8	0
59	Fast and flexible interpolation via PUM with applications in population dynamics. AIP Conference Proceedings, 2016, , .	0.4	0
60	Mathematical models and numerical methods in life sciences. AIP Conference Proceedings, 2016, , .	0.4	0
61	Anisotropic Weights for RBF-PU Interpolation with Subdomains of Variable Shapes. Lecture Notes in Computational Science and Engineering, 2019, , 93-101.	0.3	0
62	Adaptive Refinement Techniques for RBF-PU Collocation. Lecture Notes in Computer Science, 2020, , 84-91.	1.3	0
63	A 3D Efficient Procedure for Shepard Interpolants on Tetrahedra. Lecture Notes in Computer Science, 2020, , 27-34.	1.3	0
64	Adaptive LOOCV-based kernel methods for solving time-dependent BVPs. Applied Mathematics and Computation, 2022, 429, 127228.	2.2	0