Siddhartha Mishra

List of Publications by Year
in descending order

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72 papers	2,224 citations	201674 27 h-index	233421 45 g-index
72 all docs	72 docs citations	72 times ranked	990 citing authors

#	Article	IF	Citations
1	Arbitrarily High-order Accurate Entropy Stable Essentially Nonoscillatory Schemes for Systems of Conservation Laws. SIAM Journal on Numerical Analysis, 2012, 50, 544-573.	2.3	204
2	Well-balanced and energy stable schemes for the shallow water equations with discontinuous topography. Journal of Computational Physics, 2011, 230, 5587-5609.	3.8	121
3	OPTIMAL ENTROPY SOLUTIONS FOR CONSERVATION LAWS WITH DISCONTINUOUS FLUX-FUNCTIONS. Journal of Hyperbolic Differential Equations, 2005, 02, 783-837.	0.5	119
4	Estimates on the generalization error of physics-informed neural networks for approximating a class of inverse problems for PDEs. IMA Journal of Numerical Analysis, 2022, 42, 981-1022.	2.9	113
5	Sparse tensor multi-level Monte Carlo finite volume methods for hyperbolic conservation laws with random initial data. Mathematics of Computation, 2012, 81, 1979-2018.	2.1	102
6	Tunneling Time and Weak Measurement in Strong Field Ionization. Physical Review Letters, 2016, 116, 233603.	7.8	87
7	Deep learning observables in computational fluid dynamics. Journal of Computational Physics, 2020, 410, 109339.	3.8	86
8	Multi-level Monte Carlo finite volume methods for nonlinear systems of conservation laws in multi-dimensions. Journal of Computational Physics, 2012, 231, 3365-3388.	3.8	78
9	Entropy stable shock capturing spaceâ€“time discontinuous Galerkin schemes for systems of conservation laws. Numerische Mathematik, 2014, 126, 103-151.	1.9	78
10	Construction of Approximate Entropy Measure-Valued Solutions for Hyperbolic Systems of Conservation Laws. Foundations of Computational Mathematics, 2017, 17, 763-827.	2.5	65
11	On the computation of measure-valued solutions. Acta Numerica, 2016, 25, 567-679.	10.7	63
12	A well-balanced finite volume scheme for the Euler equations with gravitation. Astronomy and Astrophysics, 2016, 587, A94.	5.1	59
13	Physics informed neural networks for simulating radiative transfer. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 270, 107705.	2.3	56
14	ENO Reconstruction and ENO Interpolation Are Stable. Foundations of Computational Mathematics, 2013, 13, 139-159.	2.5	48
15	On the approximation of functions by tanh neural networks. Neural Networks, 2021, 143, 732-750.	5.9	46
16	Numerics and subgridâ€scale modeling in large eddy simulations of stratocumulus clouds. Journal of Advances in Modeling Earth Systems, 2017, 9, 1342-1365.	3.8	43
17	Largeâ€eddy simulation in an anelastic framework with closed water and entropy balances. Journal of Advances in Modeling Earth Systems, 2015, 7, 1425-1456.	3.8	38
18	A machine learning framework for data driven acceleration of computations of di erential equations. Mathematics in Engineering, 2018, 1, 118-146.	0.9	38

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19	Entropy Stable Scheme on Two-Dimensional Unstructured Grids for Euler Equations. Communications in Computational Physics, 2016, 19, 1111-1140.	1.7	36
20	Iterative surrogate model optimization (ISMO): An active learning algorithm for PDE constrained optimization with deep neural networks. Computer Methods in Applied Mechanics and Engineering, 2021, 374, 113575.	6.6	35
21	Entropy Conservative and Entropy Stable Schemes for Nonconservative Hyperbolic Systems. SIAM Journal on Numerical Analysis, 2013, 51, 1371-1391.	2.3	34
22	Error estimates for DeepONets: a deep learning framework in infinite dimensions. Transactions of Mathematics and Its Applications, 2022, 6, .	3.3	32
23	On stability of numerical schemes via frozen coefficients and the magnetic induction equations. BIT Numerical Mathematics, 2010, 50, 85-108.	2.0	31
24	Entropy Stable Numerical Schemes for Two-Fluid Plasma Equations. Journal of Scientific Computing, 2012, 52, 401-425.	2.3	31
25	Approximate Riemann Solvers and Robust High-Order Finite Volume Schemes for Multi-Dimensional Ideal MHD Equations. Communications in Computational Physics, 2011, 9, 324-362.	1.7	29
26	Multilevel Monte Carlo Finite Volume Methods for Shallow Water Equations with Uncertain Topography in Multi-dimensions. SIAM Journal of Scientific Computing, 2012, 34, B761-B784.	2.8	29
27	Numerical methods with controlled dissipation for small-scale dependent shocks. Acta Numerica, 2014, 23, 743-816.	10.7	29
28	Multi-level Monte Carlo finite volume methods for uncertainty quantification of acoustic wave propagation in random heterogeneous layered medium. Journal of Computational Physics, 2016, 312, 192-217.	3.8	28
29	Numerical Solution of Scalar Conservation Laws with Random Flux Functions. SIAM-ASA Journal on Uncertainty Quantification, 2016, 4, 552-591.	2.0	28
30	Estimates on the generalization error of physics-informed neural networks for approximating PDEs. IMA Journal of Numerical Analysis, 2023, 43, 1-43.	2.9	26
31	Energy Preserving and Energy Stable Schemes for the Shallow Water Equations. , 2009, , 93-139.		25
32	Accurate numerical discretizations of non-conservative hyperbolic systems. ESAIM: Mathematical Modelling and Numerical Analysis, 2012, 46, 187-206.	1.9	25
33	Statistical Solutions of Hyperbolic Conservation Laws: Foundations. Archive for Rational Mechanics and Analysis, 2017, 226, 809-849.	2.4	23
34	On the upstream mobility scheme for two-phase flow in porous media. Computational Geosciences, 2010, 14, 105-124.	2.4	21
35	Convergence of vanishing capillarity approximations for scalar conservation laws with discontinuous fluxes. Networks and Heterogeneous Media, 2013, 8, 969-984.	1.1	21
36	Convergence of an Engquist-Osher scheme for a multi-dimensional triangular system of conservation laws. Mathematics of Computation, 2010, 79, 71-71.	2.1	16

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37	Entropy stable schemes for initial-boundary-value conservation laws. Zeitschrift Fur Angewandte Mathematik Und Physik, 2012, 63, 985-1003.	1.4	16
38	Analysis and numerical approximation of Brinkman regularization of two-phase flows in porous media. Computational Geosciences, 2014, 18, 637-659.	2.4	16
39	Well-balanced schemes for conservation laws with source terms based on a local discontinuous flux formulation. Mathematics of Computation, 2009, 78, 55-55.	2.1	15
40	A multi-level procedure for enhancing accuracy of machine learning algorithms. European Journal of Applied Mathematics, 2021, 32, 436-469.	2.9	15
41	Convergence of finite volume schemes for triangular systems of conservation laws. Numerische Mathematik, 2009, 111, 559-589.	1.9	14
42	Higher order finite difference schemes for the magnetic induction equations. BIT Numerical Mathematics, 2009, 49, 375-395.	2.0	13
43	Statistical solutions of hyperbolic systems of conservation laws: Numerical approximation. Mathematical Models and Methods in Applied Sciences, 2020, 30, 539-609.	3.3	13
44	Shock Capturing Artificial Dissipation for High-Order Finite DifferenceÂSchemes. Journal of Scientific Computing, 2009, 39, 454-484.	2.3	12
45	SIMULATING WAVES IN THE UPPER SOLAR ATMOSPHERE WITH SURYA: A WELL-BALANCED HIGH-ORDER FINITE-VOLUME CODE. Astrophysical Journal, 2011, 732, 75.	4.5	12
46	Computation of measure-valued solutions for the incompressible Euler equations. Mathematical Models and Methods in Applied Sciences, 2015, 25, 2043-2088.	3.3	12
47	Uncertainty Quantification for Hyperbolic Systems of Conservation Laws. Handbook of Numerical Analysis, 2017, 18, 507-544.	1.8	12
48	Constraint Preserving Schemes Using Potential-Based Fluxes I. Multidimensional Transport Equations. Communications in Computational Physics, 2011, 9, 688-710.	1.7	11
49	Higher-order finite difference schemes for the magnetic induction equations with resistivity. IMA Journal of Numerical Analysis, 2012, 32, 1173-1193.	2.9	11
50	Schemes with Well-Controlled Dissipation. Hyperbolic Systems in Nonconservative Form. Communications in Computational Physics, 2017, 21, 913-946.	1.7	11
51	Multi-level Monte Carlo Finite Volume Methods for Uncertainty Quantification in Nonlinear Systems of Balance Laws. Lecture Notes in Computational Science and Engineering, 2013, , 225-294.	0.3	11
52	Entropy-stable spaceâ€“time DG schemes for non-conservative hyperbolic systems. ESAIM: Mathematical Modelling and Numerical Analysis, 2018, 52, 995-1022.	1.9	8
53	Accurate numerical schemes for approximating initial-boundary value problems for systems of conservation laws. Journal of Hyperbolic Differential Equations, 2015, 12, 61-86.	0.5	7
54	Statistical solutions of the incompressible Euler equations. Mathematical Models and Methods in Applied Sciences, 2021, 31, 223-292.	3.3	7

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55	Static Load Balancing for Multi-level Monte Carlo Finite Volume Solvers. Lecture Notes in Computer Science, 2012, , 245-254.	1.3	7
56	Schemes with Well-Controlled Dissipation. SIAM Journal on Numerical Analysis, 2015, 53, 674-699.	2.3	6
57	Numerical Approximation of Statistical Solutions of Scalar Conservation Laws. SIAM Journal on Numerical Analysis, 2018, 56, 2989-3009.	2.3	6
58	Entropy stability and well-balancedness of space-time DG for the shallow water equations with bottom topography. Networks and Heterogeneous Media, 2016, 11, 145-162.	1.1	6
59	Semi-Godunov schemes for general triangular systems of conservation laws. Journal of Engineering Mathematics, 2008, 60, 337-349.	1.2	5
60	Numerical Methods for Conservation Laws With Discontinuous Coefficients. Handbook of Numerical Analysis, 2017, 18, 479-506.	1.8	5
61	On the Convergence of the Spectral Viscosity Method for the Two-Dimensional Incompressible Euler Equations with Rough Initial Data. Foundations of Computational Mathematics, 2020, 20, 1309-1362.	2.5	5
62	On the conservation of energy in two-dimensional incompressible flows. Nonlinearity, 2021, 34, 1084-1135.	1.4	5
63	A large-time-stepping scheme for balance equations. Journal of Engineering Mathematics, 2008, 60, 351-363.	1.2	4
64	Kinetic functions in magnetohydrodynamics with resistivity and Hall effect. Acta Mathematica Scientia, 2009, 29, 1684-1702.	1.0	4
65	Efficient Preconditioners for a Shock Capturing Space-Time Discontinuous Galerkin Method for Systems of Conservation Laws. Communications in Computational Physics, 2015, 17, 1320-1359.	1.7	3
66	Entropy Stable ENO Scheme. Series in Contemporary Applied Mathematics, 2012, , 12-27.	0.8	2
67	Monte-Carlo Finite-Volume Methods in Uncertainty Quantification for Hyperbolic Conservation Laws. SEMA SIMAI Springer Series, 2017, , 231-277.	0.7	2
68	ON THE CONVERGENCE OF NUMERICAL SCHEMES FOR HYPERBOLIC SYSTEMS OF CONSERVATION LAWS. , 2019, , .		2
69	Stable finite difference schemes for the magnetic induction equation with Hall effect. BIT Numerical Mathematics, 2012, 52, 905-932.	2.0	1
70	On the approximation of rough functions with deep neural networks. SeMA Journal, 0, , .	2.0	1
71	On Bayesian data assimilation for PDEs with ill-posed forward problems. Inverse Problems, 2022, 38, 085012.	2.0	1
72	Robust Finite Volume Schemes for Simulating Waves in the Solar Atmosphere. Series in Contemporary Applied Mathematics, 2012, , 215-226.	0.8	0