Houman Owhadi

List of Publications by Year
in descending order

79	2,254	257450	214800
papers	citations	24	47
		h-index	g-index

95	95	95	955
all docs	docs citations	times ranked	citing authors

#	ARTICLE	IF	CITATIONS
1	Computational graph completion. Research in Mathematical Sciences, 2022, 9, 1.	1.0	3
2	Consistency of empirical Bayes and kernel flow for hierarchical parameter estimation. Mathematics of Computation, 2021, 90, 2527-2578.	2.1	12
3	Learning dynamical systems from data: A simple cross-validation perspective, part I: Parametric kernel flows. Physica D: Nonlinear Phenomena, 2021, 421, 132817.	2.8	44
4	Deep regularization and direct training of the inner layers of Neural Networks with Kernel Flows. Physica D: Nonlinear Phenomena, 2021, 426, 132952.	2.8	8
5	Solving and learning nonlinear PDEs with Gaussian processes. Journal of Computational Physics, 2021, 447, 110668.	3.8	46
6	Compression, Inversion, and Approximate PCA of Dense Kernel Matrices at Near-Linear Computational Complexity. Multiscale Modeling and Simulation, 2021, 19, 688-730.	1.6	21
7	Sparse Cholesky Factorization by Kullback--Leibler Minimization. SIAM Journal of Scientific Computing, 2021, 43, A2019-A2046.	2.8	33
8	Non-trigonometric Waveform and Iterated KMD. Sureys and Tutorials in the Applied Mathematical Sciences, 2021, , 57-68.	0.4	0
9	Unknown Base Waveforms. Sureys and Tutorials in the Applied Mathematical Sciences, 2021, , 69-74.	0.4	0
10	Kernel Mode Decomposition and the Programming of Kernels. Sureys and Tutorials in the Applied Mathematical Sciences, 2021, , .	0.4	4
11	Crossing Frequencies, Vanishing Modes, and Noise. Sureys and Tutorials in the Applied Mathematical Sciences, 2021, , 75-86.	0.4	0
12	Sobolev Space Basics. , 2019, , 25-33.		0
13	Optimal Recovery Splines. , 2019, , 34-37.		0
14	Numerical Homogenization. , 2019, , 38-62.		0
15	Operator-Adapted Wavelets. , 2019, , 63-89.		0
16	Fast Solvers. , 2019, , 90-102.		0
17	Gaussian Fields. , 2019, , 105-118.		0
18	Optimal Recovery Games on Hs0($Î©$). , 2019, , 119-130.		0

#	Article	IF	Citations
19	Gamblets. , 2019, , 131-136.		0
20	Hierarchical Games. , 2019, , 137-148.		0
21	Banach Space Basics. , 2019, , 151-153.		0
22	Optimal Recovery Splines. , 2019, , 154-159.		0
23	Gamblets. , 2019, , 160-194.		0
24	Bounded Condition Numbers. , 2019, , 195-251.		0
25	Exponential Decay. , 2019, , 252-296.		0
26	Fast Gamblet Transform. , 2019, , 297-344.		0
27	Gaussian Measures, Cylinder Measures, and Fields on B. , 2019, , 347-359.		0
28	Optimal Recovery Games on B. , 2019, , 360-369.		0
29	Game Theoretic Interpretation of Gamblets. , 2019, , 370-377.		0
30	Survey of Statistical Numerical Approximation. , 2019, , 378-386.		0
31	Positive Definite Matrices. , 2019, , 389-405.		0
32	Nonsymmetric Operators. , 2019, , 406-409.		0
33	Time-Dependent Operators. , 2019, , 410-420.		0
34	Dense Kernel Matrices. , 2019, , 421-426.		0
35	Fast Eigenpairs Computation with Operator Adapted Wavelets and Hierarchical Subspace Correction. SIAM Journal on Numerical Analysis, 2019, 57, 2519-2550.	2.3	12
36	De-noising by thresholding operator adapted wavelets. Statistics and Computing, 2019, 29, 1185-1201.	1.5	5

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37	Operator-adapted wavelets for finite-element differential forms. Journal of Computational Physics, 2019, 388, 144-177.	3.8	42
38	Kernel Flows: From learning kernels from data into the abyss. Journal of Computational Physics, 2019, 389, 22-47.	3.8	48
39	Material-adapted refinable basis functions for elasticity simulation. ACM Transactions on Graphics, 2019, 38, 1-15.	7.2	13
40	Multiresolution operator decomposition for flow simulation in fractured porous media. Journal of Computational Physics, 2019, 391, 381-396.	3.8	6
41	Statistical Numerical Approximation. Notices of the American Mathematical Society, 2019, 66, 1.	0.2	8
42	Multigrid with Rough Coefficients and Multiresolution Operator Decomposition from Hierarchical Information Games. SIAM Review, 2017, 59, 99-149.	9.5	138
43	Gamblets for opening the complexity-bottleneck of implicit schemes for hyperbolic and parabolic ODEs/PDEs with rough coefficients. Journal of Computational Physics, 2017, 347, 99-128.	3.8	63
44	Qualitative Robustness in Bayesian Inference. ESAIM - Probability and Statistics, 2017, 21, 251-274.	0.5	8
45	Extreme points of a ball about a measure with finite support. Communications in Mathematical Sciences, 2017, 15, 77-96.	1.0	3
46	Temporal Homogenization of Linear ODEs, with Applications to Parametric Super-Resonance and Energy Harvest. Archive for Rational Mechanics and Analysis, 2016, 220, 261-296.	2.4	5
47	Brittleness of Bayesian inference and new Selberg formulas. Communications in Mathematical Sciences, 2016, 14, 83-145.	1.0	10
48	Bayesian Numerical Homogenization. Multiscale Modeling and Simulation, 2015, 13, 812-828.	1.6	149
49	Brittleness of Bayesian inference under finite information in a continuous world. Electronic Journal of Statistics, 2015, 9, .	0.7	34
50	On the Brittleness of Bayesian Inference. SIAM Review, 2015, 57, 566-582.	9.5	36
51	Convex Optimal Uncertainty Quantification. SIAM Journal on Optimization, 2015, 25, 1368-1387.	2.0	12
52	Polyharmonic homogenization, rough polyharmonic splines and sparse super-localization. ESAIM: Mathematical Modelling and Numerical Analysis, 2014, 48, 517-552.	1.9	118
53	Variational integrators for electric circuits. Journal of Computational Physics, 2013, 242, 498-530.	3.8	23
54	Control of a model of DNA division via parametric resonance. Chaos, 2013, 23, 013117.	2.5	10

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55	Interplay of Theory and Numerics for Deterministic and Stochastic Homogenization. Oberwolfach Reports, 2013, 10, 801-865.	0.0	0
56	From Efficient Symplectic Exponentiation of Matrices to Symplectic Integration of High-dimensional Hamiltonian Systems with Slowly Varying Quadratic Stiff Potentials. Applied Mathematics Research EXpress, 2011, 2011, 242-280.	1.0	9
57	Variational integrators for electric circuits. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 783-784.	0.2	0
58	A non-adapted sparse approximation of PDEs with stochastic inputs. Journal of Computational Physics, 2011, 230, 3015-3034.	3.8	356
59	Localized Bases for Finite-Dimensional Homogenization Approximations with Nonseparated Scales and High Contrast. Multiscale Modeling and Simulation, 2011, 9, 1373-1398.	1.6	91
60	Space-time FLAVORS: finite difference, multisymlectic, and pseudospectral integrators for multiscale PDEs. Dynamics of Partial Differential Equations, 2011, 8, 21-45.	0.9	3
61	Optimal Control Strategies for Robust Certification. Journal of Computational and Nonlinear Dynamics, 2010, 5, .	1.2	5
62	Flux Norm Approach to Finite Dimensional Homogenization Approximations with Non-Separated Scales and High Contrast. Archive for Rational Mechanics and Analysis, 2010, 198, 677-721.	2.4	80
63	Certification with optimal control strategies. Proceedings in Applied Mathematics and Mechanics, 2010, 10, 621-622.	0.2	0
64	A cutoff phenomenon in accelerated stochastic simulations of chemical kinetics via flow averaging (FLAVOR-SSA). Journal of Chemical Physics, 2010, 133, 244117.	3.0	6
65	Long-Run Accuracy of Variational Integrators in the Stochastic Context. SIAM Journal on Numerical Analysis, 2010, 48, 278-297.	2.3	84
66	Global Energy Matching Method for Atomistic-to-Continuum Modeling of Self-Assembling Biopolymer Aggregates. Multiscale Modeling and Simulation, 2010, 8, 1958-1980.	1.6	4
67	Nonintrusive and Structure Preserving Multiscale Integration of Stiff ODEs, SDEs, and Hamiltonian Systems with Hidden Slow Dynamics via Flow Averaging. Multiscale Modeling and Simulation, 2010, 8, 1269-1324.	1.6	66
68	Numerical coarsening of inhomogeneous elastic materials. ACM Transactions on Graphics, 2009, 28, 1-8.	7.2	88
69	Numerical homogenization of the acoustic wave equations with a continuum of scales. Computer Methods in Applied Mechanics and Engineering, 2008, 198, 397-406.	6.6	83
70	Homogenization of Parabolic Equations with a Continuum of Space and Time Scales. SIAM Journal on Numerical Analysis, 2008, 46, 1-36.	2.3	59
71	BISTABLE EQUILIBRIUM POINTS OF MERCURY BODY BURDEN. Journal of Biological Systems, 2008, 16, 139-150.	1.4	0
72	Metric-based upscaling. Communications on Pure and Applied Mathematics, 2007, 60, 675-723.	3.1	156

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73	Averaging Versus Chaos in Turbulent Transport?. Communications in Mathematical Physics, 2004, 247, 553-599.	2.2	40
74	From a market of dreamers to economical shocks. Physica A: Statistical Mechanics and Its Applications, 2004, 343, 583-602.	2.6	1
75	Approximation of the effective conductivity of ergodic media by periodization. Probability Theory and Related Fields, 2003, 125, 225-258.	1.8	65
76	Multiscale homogenization with bounded ratios and anomalous slow diffusion. Communications on Pure and Applied Mathematics, 2003, 56, 80-113.	3.1	52
77	Anomalous slow diffusion from perpetual homogenization. Annals of Probability, 2003, 31, 1935.	1.8	49
78	Super-Diffusivity in a Shear Flow ModelÂ¶from Perpetual Homogenization. Communications in Mathematical Physics, 2002, 227, 281-302.	2.2	13
79	One-Shot Learning of Stochastic Differential Equations with Computational Graph Completion. SSRN Electronic Journal, 0, , .	0.4	1