Daniel Nico Wilke

List of Publications by Year
in descending order

70 papers	1,200 citations	430754 18 h-index	395590 33 g-index
73 all docs	73 docs citations	73 times ranked	833 citing authors

#	Article	IF	Citations
1	Deep digital twins for detection, diagnostics and prognostics. Mechanical Systems and Signal Processing, 2020, 140, 106612.	4.4	131
2	Development of a convex polyhedral discrete element simulation framework for NVIDIA Kepler based GPUs. Journal of Computational and Applied Mathematics, 2014, 270, 386-400.	1.1	98
3	Practical Mathematical Optimization. Springer Optimization and Its Applications, 2018, , .	0.6	71
4	Blaze-DEMGPU: Modular high performance DEM framework for the GPU architecture. SoftwareX, 2016, 5, 62-66.	1.2	70
5	A study of shape non-uniformity and poly-dispersity in hopper discharge of spherical and polyhedral particle systems using the Blaze-DEM GPU code. Applied Mathematics and Computation, 2018, 319, 318-336.	1.4	66
6	Discrete element simulation of mill charge in 3D using the BLAZE-DEM GPU framework. Minerals Engineering, 2015, 79, 152-168.	1.8	64
7	Large-scale GPU based DEM modeling of mixing using irregularly shaped particles. Advanced Powder Technology, 2018, 29, 2476-2490.	2.0	64
8	Comparison of linear and classical velocity update rules in particle swarm optimization: notes on diversity. International Journal for Numerical Methods in Engineering, 2007, 70, 962-984.	1.5	54
9	Collision detection of convex polyhedra on the NVIDIA GPU architecture for the discrete element method. Applied Mathematics and Computation, 2015, 267, 810-829.	1.4	54
10	Comparison of linear and classical velocity update rules in particle swarm optimization: notes on scale and frame invariance. International Journal for Numerical Methods in Engineering, 2007, 70, 985-1008.	1.5	42
11	Hopper flow of irregularly shaped particles (non-convex polyhedra): GPU-based DEM simulation and experimental validation. Chemical Engineering Science, 2018, 188, 34-51.	1.9	42
12	A numerical investigation into the effect of angular particle shape on blast furnace burden topography and percolation using a GPU solved discrete element model. Chemical Engineering Science, 2019, 204, 9-26.	1.9	37
13	The effect of particle shape on the packed bed effective thermal conductivity based on DEM with polyhedral particles on the GPU. Chemical Engineering Science, 2020, 219, 115584.	1.9	29
14	Effect of particle shape in grinding mills using a GPU based DEM code. Minerals Engineering, 2018, 129, 71-84.	1.8	28
15	Estimation of rail properties using semi-analytical finite element models and guided wave ultrasound measurements. Ultrasonics, 2019, 96, 240-252.	2.1	25
16	A cohesive fracture model for discrete element method based on polyhedral blocks. Powder Technology, 2020, 359, 190-204.	2.1	25
17	Development of an optimal piezoelectric transducer to excite guided waves in a rail web. NDT and E International, 2018, 95, 72-81.	1.7	23
18	A quadratically convergent unstructured remeshing strategy for shape optimization. International Journal for Numerical Methods in Engineering, 2006, 65, 1-17.	1.5	20

#	Article	IF	Citations
19	A modelling framework for simulation of ultrasonic guided wave-based inspection of welded rail tracks. Ultrasonics, 2020, 108, 106215.	2.1	20
20	Analysis of parallel spatial partitioning algorithms for GPU based DEM. Computers and Geotechnics, 2020, 125, 103708.	2.3	18
21	Simulation of rock fracture process based on GPU-accelerated discrete element method. Powder Technology, 2021, 377, 640-656.	2.1	18
22	The application of gradient-only optimization methods for problems discretized using non-constant methods. Structural and Multidisciplinary Optimization, 2010, 40, 433-451.	1.7	14
23	3D gradient corrected SPH for fully resolved particle–fluid interactions. Applied Mathematical Modelling, 2020, 78, 816-840.	2.2	14
24	Physics-based modelling and simulation of reverberating reflections in ultrasonic guided wave inspections applied to welded rail tracks. Journal of Sound and Vibration, 2022, 530, 116914.	2.1	14
25	Benefits of virtual calibration for discrete element parameter estimation from bulk experiments. Granular Matter, 2019, 21, 1.	1.1	13
26	The influence of faceted particle shapes on material dynamics in screw conveying. Chemical Engineering Science, 2021, 243, 116654.	1.9	13
27	On rotationally invariant continuous-parameter genetic algorithms. Advances in Engineering Software, 2014, 78, 52-59.	1.8	10
28	The use of direct inverse maps to solve material identification problems: pitfalls and solutions. Structural and Multidisciplinary Optimization, 2017, 55, 613-632.	1.7	8
29	Human skull shape and masticatory induced stress: Objective comparison through the use of non‐rigid registration. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 170-185.	1.0	7
30	SOME BASIC OPTIMIZATION THEOREMS. Springer Optimization and Its Applications, 2018, , 169-193.	0.6	7
31	Parametric Circuit Fault Diagnosis Through Oscillation-Based Testing in Analogue Circuits: Statistical and Deep Learning Approaches. IEEE Access, 2022, 10, 15671-15680.	2.6	7
32	Gradient-only approaches to avoid spurious local minima in unconstrained optimization. Optimization and Engineering, 2013, 14, 275-304.	1.3	6
33	Numerical Strategies to Reduce the Effect of Ill-Conditioned Correlation Matrices and Underflow Errors in Kriging. Journal of Mechanical Design, Transactions of the ASME, 2013, 135, .	1.7	6
34	DEM GPU studies of industrial scale particle simulations for granular flow civil engineering applications. EPJ Web of Conferences, 2017, 140, 03071.	0.1	6
35	Discrete element model study into effects of particle shape on backfill response to cyclic loading behind an integral bridge abutment. Granular Matter, 2018, 20, 1.	1.1	6
36	Relaxed error control in shape optimization that utilizes remeshing. International Journal for Numerical Methods in Engineering, 2013, 94, 273-289.	1.5	5

#	Article	IF	Citations
37	SAFE-3D analysis of a piezoelectric transducer to excite guided waves in a rail web. AIP Conference Proceedings, 2016, , .	0.3	5
38	Heuristic linear algebraic rank-variance formulation and solution approach for efficient sensor placement. Engineering Structures, 2017, 153, 717-731.	2.6	5
39	How We Solve the Weights in Our Surrogate Models Matters. Journal of Mechanical Design, Transactions of the ASME, 2019, 141, .	1.7	5
40	Purposeful cross-validation: a novel cross-validation strategy for improved surrogate optimizability. Engineering Optimization, 2021, 53, 1558-1573.	1.5	5
41	Resolving learning rates adaptively by locating stochastic non-negative associated gradient projection points using line searches. Journal of Global Optimization, 2021, 79, 111-152.	1.1	4
42	Computing with Non-convex Polyhedra on the GPU. Springer Proceedings in Physics, 2017, , 1371-1377.	0.1	4
43	Industrial Scale Particle Simulations on the GPU Using the Blaze-DEM Code. Springer Proceedings in Physics, 2017, , 1379-1388.	0.1	4
44	Importance of temporal preserving latent analysis for latent variable models in fault diagnostics of rotating machinery. Mechanical Systems and Signal Processing, 2022, 168, 108663.	4.4	4
45	GPU DEM Simulations and Experimental Studies of Ball Milling Process for Various Particle Shapes. Springer Proceedings in Physics, 2017, , 1345-1352.	0.1	3
46	Traction chain networks: Insights beyond force chain networks for non-spherical particle systems. Powder Technology, 2022, 402, 117362.	2.1	3
47	Towards reproducible experimental studies for non-convex polyhedral shaped particles. EPJ Web of Conferences, 2017, 140, 06028.	0.1	2
48	Modelling multiple cycles of static and dynamic recrystallisation using a fully implicit isotropic material model based on dislocation density. Computational Mechanics, 2018, 62, 1343-1367.	2.2	2
49	PRACTICAL COMPUTATIONAL OPTIMIZATION USING PYTHON. Springer Optimization and Its Applications, 2018, , 311-340.	0.6	2
50	Spatially distributed statistical significance approach for real parameter tuning with restricted budgets. Applied Soft Computing Journal, 2018, 70, 648-664.	4.1	2
51	On the rotational variance of the differential evolution algorithm. Advances in Engineering Software, 2019, 136, 102691.	1.8	2
52	Boundary condition enforcement for renormalised weakly compressible meshless Lagrangian methods. Engineering Analysis With Boundary Elements, 2021, 130, 332-351.	2.0	2
53	Simultaneous estimation of boundary conditions and material model parameters. Structural and Multidisciplinary Optimization, 2018, 58, 701-717.	1.7	1
54	Modelling realistic ballast shape to study the lateral pull behaviour using GPU computing. EPJ Web of Conferences, 2021, 249, 06003.	0.1	1

#	Article	IF	Citations
55	Challenges and solutions to arc-length controlled structural shape design problems. Mechanics Based Design of Structures and Machines, 0, , 1-32.	3.4	1
56	The Role of Untangled Latent Spaces in Unsupervised Learning Applied to Condition-Based Maintenance. Applied Condition Monitoring, 2022, , 38-49.	0.4	1
57	NEW GRADIENT-BASED TRAJECTORY AND APPROXIMATION METHODS. Springer Optimization and Its Applications, 2018, , 197-250.	0.6	1
58	LINE SEARCH DESCENT METHODS FOR UNCONSTRAINED MINIMIZATION. Springer Optimization and Its Applications, 2018, , 41-69.	0.6	1
59	A meshless Lagrangian particle-based porosity formulation for under-resolved generalised finite difference-DEM coupling in fluidised beds. Powder Technology, 2022, 398, 117079.	2.1	1
60	Reference frame and scale invariant real-parameter genetic and differential evolution algorithms. , 2007, , .		0
61	Shape and Composite Lay up Design of Multilayer Composite Structures Using the Snyman-Fatti Algorithm. , 2008, , 35-42.		0
62	Optimal design of a piezoelectric transducer for exciting guided wave ultrasound in rails. AIP Conference Proceedings, 2017, , .	0.3	0
63	Application of Anti-Diagonal Averaging in Response Reconstruction. Symmetry, 2021, 13, 1165.	1.1	0
64	A generic strategy to obtain semi‐analytical mesh sensitivities/velocities for tetrahedral mesh generators. International Journal for Numerical Methods in Engineering, 2021, 122, 4944-4965.	1.5	0
65	Learning-Based Methods for Vibration-Based Condition Monitoring. Applied Condition Monitoring, 2022, , 75-86.	0.4	0
66	Identifiability Considerations for Rotating Machine Fault Diagnosis and Prognosis. Applied Condition Monitoring, 2022, , 8-20.	0.4	0
67	Geometric Design of Tumbling Mill Lifter Bars Utilizing the Discrete Element Method. , 2018, , 878-888.		0
68	GRADIENT-ONLY SOLUTION STRATEGIES. Springer Optimization and Its Applications, 2018, , 273-310.	0.6	0
69	BASIC EXAMPLE PROBLEMS. Springer Optimization and Its Applications, 2018, , 113-167.	0.6	0
70	Sparse Identification of Conditional relationships in Structural Causal Models (SICrSCM) for counterfactual inference. Probabilistic Engineering Mechanics, 2022, , 103295.	1.3	0