Carlos A Coello Coello

List of Publications by Citations

463 papers	22,117 citations	58 h-index	141 g-index
508 ext. papers	26,091 ext. citations	4.2 avg, IF	7.58 L-index

#	Paper	IF	Citations
463	Handling multiple objectives with particle swarm optimization. *IEEE Transactions on Evolutionary Computation*, **2004**, 8, 256-279	15.6	2572
462	Theoretical and numerical constraint-handling techniques used with evolutionary algorithms: a survey of the state of the art. *Computer Methods in Applied Mechanics and Engineering*, **2002**, 191, 1245-1287	5.7	1493
461	Evolutionary Algorithms for Solving Multi-Objective Problems. *Genetic Algorithms and Evolutionary Computation*, **2002**,		1308
460	A Comprehensive Survey of Evolutionary-Based Multiobjective Optimization Techniques. *Knowledge and Information Systems*, **1999**, 1, 269-308	2.4	780
459	Use of a self-adaptive penalty approach for engineering optimization problems. *Computers in Industry*, **2000**, 41, 113-127	11.6	778
458	Evolutionary multi-objective optimization: a historical view of the field. *IEEE Computational Intelligence Magazine*, **2006**, 1, 28-36	5.6	672
457	Constraint-handling in nature-inspired numerical optimization: Past, present and future. *Swarm and Evolutionary Computation*, **2011**, 1, 173-194	9.8	637
456	Constraint-handling in genetic algorithms through the use of dominance-based tournament selection. *Advanced Engineering Informatics*, **2002**, 16, 193-203	7.4	570
455	MOPSO: a proposal for multiple objective particle swarm optimization		514
454	Solving Multiobjective Optimization Problems Using an Artificial Immune System. *Genetic Programming and Evolvable Machines*, **2005**, 6, 163-190	2	487
453	An updated survey of GA-based multiobjective optimization techniques. *ACM Computing Surveys*, **2000**, 32, 109-143	13.4	447
452	A simple multimembered evolution strategy to solve constrained optimization problems. *IEEE Transactions on Evolutionary Computation*, **2005**, 9, 1-17	15.6	406
451	Using the Averaged Hausdorff Distance as a Performance Measure in Evolutionary Multiobjective Optimization. *IEEE Transactions on Evolutionary Computation*, **2012**, 16, 504-522	15.6	360
450	Improving PSO-Based Multi-objective Optimization Using Crowding, Mutation and ?-Dominance. *Lecture Notes in Computer Science*, **2005**, 505-519	0.9	355
449	A comparative study of differential evolution variants for global optimization **2006**,		307
448	An empirical study about the usefulness of evolution strategies to solve constrained optimization problems. *International Journal of General Systems*, **2008**, 37, 443-473	2.1	284
447	SMPSO: A new PSO-based metaheuristic for multi-objective optimization **2009**,		276

446	Bio-inspired computation: Where we stand and what's next. *Swarm and Evolutionary Computation*, **2019**, 48, 220-250	9.8	264
445	CONSTRAINT-HANDLING USING AN EVOLUTIONARY MULTIOBJECTIVE OPTIMIZATION TECHNIQUE. *Civil Engineering and Environmental Systems*, **2000**, 17, 319-346	2.1	259
444	A Survey of Multiobjective Evolutionary Algorithms for Data Mining: Part I. *IEEE Transactions on Evolutionary Computation*, **2014**, 18, 4-19	15.6	244
443	Applications of Multi-Objective Evolutionary Algorithms. *Advances in Natural Computation*, **2004**,		230
442	Cultured differential evolution for constrained optimization. *Computer Methods in Applied Mechanics and Engineering*, **2006**, 195, 4303-4322	5.7	189
441	TREATING CONSTRAINTS AS OBJECTIVES FOR SINGLE-OBJECTIVE EVOLUTIONARY OPTIMIZATION. *Engineering Optimization*, **2000**, 32, 275-308	2	182
440	A Survey on Multiobjective Evolutionary Algorithms for the Solution of the Portfolio Optimization Problem and Other Finance and Economics Applications. *IEEE Transactions on Evolutionary Computation*, **2013**, 17, 321-344	15.6	181
439	g-dominance: Reference point based dominance for multiobjective metaheuristics. *European Journal of Operational Research*, **2009**, 197, 685-692	5.6	174
438	Efficient evolutionary optimization through the use of a cultural algorithm. *Engineering Optimization*, **2004**, 36, 219-236	2	157
437	Multiobjective optimization of trusses using genetic algorithms. *Computers and Structures*, **2000**, 75, 647-660	4.5	157
436	On the Influence of the Number of Objectives on the Hardness of a Multiobjective Optimization Problem. *IEEE Transactions on Evolutionary Computation*, **2011**, 15, 444-455	15.6	141
435	Survey of Multiobjective Evolutionary Algorithms for Data Mining: Part II. *IEEE Transactions on Evolutionary Computation*, **2014**, 18, 20-35	15.6	138
434	HCS: A New Local Search Strategy for Memetic Multiobjective Evolutionary Algorithms. *IEEE Transactions on Evolutionary Computation*, **2010**, 14, 112-132	15.6	136
433	Pareto-adaptive epsilon-dominance. *Evolutionary Computation*, **2007**, 15, 493-517	4.3	134
432	A survey of multi-objective metaheuristics applied to structural optimization. *Structural and Multidisciplinary Optimization*, **2014**, 49, 537-558	3.6	124
431	Handling constraints using multiobjective optimization concepts. *International Journal for Numerical Methods in Engineering*, **2004**, 59, 1989-2017	2.4	121
430	Particle Swarm Optimization With a Balanceable Fitness Estimation for Many-Objective Optimization Problems. *IEEE Transactions on Evolutionary Computation*, **2018**, 22, 32-46	15.6	116
429	Optimal Power Flow Subject to Security Constraints Solved With a Particle Swarm Optimizer. *IEEE Transactions on Power Systems*, **2008**, 23, 33-40	7	99

428	A Study of the Parallelization of a Coevolutionary Multi-objective Evolutionary Algorithm. *Lecture Notes in Computer Science*, **2004**, 688-697	0.9	98
427	Handling preferences in evolutionary multiobjective optimization: a survey		98
426	Multiobjective Evolutionary Algorithms in Aeronautical and Aerospace Engineering. *IEEE Transactions on Evolutionary Computation*, **2012**, 16, 662-694	15.6	95
425	Hybridizing a genetic algorithm with an artificial immune system for global optimization. *Engineering Optimization*, **2004**, 36, 607-634	2	93
424	Multiobjective structural optimization using a microgenetic algorithm. *Structural and Multidisciplinary Optimization*, **2005**, 30, 388-403	3.6	91
423	MOSES: A MULTIOBJECTIVE OPTIMIZATION TOOL FOR ENGINEERING DESIGN. *Engineering Optimization*, **1999**, 31, 337-368	2	91
422	Evolutionary multi-objective optimization: some current research trends and topics that remain to be explored. *Frontiers of Computer Science*, **2009**, 3, 18-30		90
421	Evolutionary Multiobjective Optimization in Materials Science and Engineering. *Materials and Manufacturing Processes*, **2009**, 24, 119-129	4.1	90
420	Use of cooperative coevolution for solving large scale multiobjective optimization problems **2013**,		89
419	Coevolutionary Multiobjective Evolutionary Algorithms: Survey of the State-of-the-Art. *IEEE Transactions on Evolutionary Computation*, **2018**, 22, 851-865	15.6	87
418	Microgenetic multiobjective reconfiguration algorithm considering power losses and reliability indices for medium voltage distribution network. *IET Generation, Transmission and Distribution*, **2009**, 3, 825-840	2.5	84
417	Multiple trial vectors in differential evolution for engineering design. *Engineering Optimization*, **2007**, 39, 567-589	2	84
416	. *IEEE Transactions on Evolutionary Computation*, **2010**, 14, 618-635	15.6	83
415	Multi-objective Optimization Using Differential Evolution: A Survey of the State-of-the-Art. *Studies in Computational Intelligence*, **2008**, 173-196	0.8	81
414	Multi-Objective Particle Swarm Optimizers: An Experimental Comparison. *Lecture Notes in Computer Science*, **2009**, 495-509	0.9	73
413	Improved Metaheuristic Based on the R2 Indicator for Many-Objective Optimization **2015**,		71
412	An updated survey of evolutionary multiobjective optimization techniques: state of the art and future trends		71
411	A hybrid Differential Evolution–Tabu Search algorithm for the solution of Job-Shop Scheduling Problems. *Applied Soft Computing Journal*, **2013**, 13, 462-474	7.5	66

410	Using Clustering Techniques to Improve the Performance of a Multi-objective Particle Swarm Optimizer. *Lecture Notes in Computer Science*, **2004**, 225-237	0.9	66
409	A simple genetic algorithm for the design of reinforced concrete beams. *Engineering With Computers*, **1997**, 13, 185-196	4.5	64
408	Recent Trends in Evolutionary Multiobjective Optimization **2005**, 7-32		62
407	MOMBI: A new metaheuristic for many-objective optimization based on the R2 indicator **2013**,		61
406	Useful Infeasible Solutions in Engineering Optimization with Evolutionary Algorithms. *Lecture Notes in Computer Science*, **2005**, 652-662	0.9	61
405	An External Archive-Guided Multiobjective Particle Swarm Optimization Algorithm. *IEEE Transactions on Cybernetics*, **2017**, 47, 2794-2808	10.2	58
404	Evolutionary multiobjective optimization: open research areas and some challenges lying ahead. *Complex & Intelligent Systems*, **2020**, 6, 221-236	7.1	57
403	Computing gap free Pareto front approximations with stochastic search algorithms. *Evolutionary Computation*, **2010**, 18, 65-96	4.3	54
402	Ranking Methods for Many-Objective Optimization. *Lecture Notes in Computer Science*, **2009**, 633-645	0.9	54
401	Multiobjective Location of Automatic Voltage Regulators in a Radial Distribution Network Using a Micro Genetic Algorithm. *IEEE Transactions on Power Systems*, **2007**, 22, 404-412	7	54
400	DEMORS: A hybrid multi-objective optimization algorithm using differential evolution and rough set theory for constrained problems. *Computers and Operations Research*, **2010**, 37, 470-480	4.6	52
399	Increasing selective pressure towards the best compromise in evolutionary multiobjective optimization: The extended NOSGA method. *Information Sciences*, **2011**, 181, 44-56	7.7	51
398	A multi-objective particle swarm optimizer based on decomposition **2011**,		50
397	Design of combinational logic circuits through an evolutionary multiobjective optimization approach. *Artificial Intelligence for Engineering Design, Analysis and Manufacturing: AIEDAM*, **2002**, 16, 39-53	1.3	50
396	Adaptive composite operator selection and parameter control for multiobjective evolutionary algorithm. *Information Sciences*, **2016**, 339, 332-352	7.7	49
395	Evolutionary multiobjective optimization using an outranking-based dominance generalization. *Computers and Operations Research*, **2010**, 37, 390-395	4.6	48
394	Optimal design of reinforced concrete beams using genetic algorithms. *Expert Systems With Applications*, **1997**, 12, 101-108	7.8	48
393	A Clustering-Based Evolutionary Algorithm for Many-Objective Optimization Problems. *IEEE Transactions on Evolutionary Computation*, **2019**, 23, 391-405	15.6	45

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391	A Review of Techniques for Handling Expensive Functions in Evolutionary Multi-Objective Optimization. *Adaptation, Learning, and Optimization*, **2010**, 29-59	0.7	45
390	On the use of particle swarm optimization with multimodal functions		45
389	Solving constrained optimization problems with a hybrid particle swarm optimization algorithm. *Engineering Optimization*, **2011**, 43, 843-866	2	44
388	An Algorithm Based on Differential Evolution for Multi-Objective Problems. *International Journal of Computational Intelligence Research*, **2005**, 1,	0	44
387	Using multi-objective evolutionary algorithms for single-objective constrained and unconstrained optimization. *Annals of Operations Research*, **2016**, 240, 217-250	3.2	43
386	Consolidated optimization algorithm for resource-constrained project scheduling problems. *Information Sciences*, **2017**, 418-419, 346-362	7.7	43
385	Convergence of stochastic search algorithms to finite size pareto set approximations. *Journal of Global Optimization*, **2008**, 41, 559-577	1.5	43
384	Use of an Artificial Immune System for Job Shop Scheduling. *Lecture Notes in Computer Science*, **2003**, 1-10	0.9	43
383	Parallel Approaches for Multiobjective Optimization. *Lecture Notes in Computer Science*, **2008**, 349-372	0.9	43
382	Computing the Set of Epsilon-Efficient Solutions in Multiobjective Space Mission Design. *Journal of Aerospace Computing, Information, and Communication*, **2011**, 8, 53-70		42
381	Constrained Optimization via Multiobjective Evolutionary Algorithms **2008**, 53-75		41
380	Online Objective Reduction to Deal with Many-Objective Problems. *Lecture Notes in Computer Science*, **2009**, 423-437	0.9	40
379	An adaptive immune-inspired multi-objective algorithm with multiple differential evolution strategies. *Information Sciences*, **2018**, 430-431, 46-64	7.7	40
378	Differential Evolution performances for the solution of mixed-integer constrained process engineering problems. *Applied Soft Computing Journal*, **2011**, 11, 399-409	7.5	39
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375	Using multi-objective evolutionary algorithms for single-objective optimization. *4or*, **2013**, 11, 201-228	1.4	38

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372	Indicator-based Multi-objective Evolutionary Algorithms. *ACM Computing Surveys*, **2020**, 53, 1-35	13.4	37
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370	Hybridizing evolutionary strategies with continuation methods for solving multi-objective problems. *Engineering Optimization*, **2008**, 40, 383-402	2	35
369	Simple Feasibility Rules and Differential Evolution for Constrained Optimization. *Lecture Notes in Computer Science*, **2004**, 707-716	0.9	34
368	Using a new GA-based multiobjective optimization technique for the design of robot arms. *Robotica* , **1998**, 16, 401-414	2.1	34
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366	A Tutorial On the design, experimentation and application of metaheuristic algorithms to real-World optimization problems. *Swarm and Evolutionary Computation*, **2021**, 64, 100888	9.8	33
365	Improving the vector generation strategy of Differential Evolution for large-scale optimization. *Information Sciences*, **2015**, 323, 106-129	7.7	32
364	Use of Particle Swarm Optimization to Design Combinational Logic Circuits. *Lecture Notes in Computer Science*, **2003**, 398-409	0.9	32
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359	Towards automated evolutionary design of combinational circuits. *Computers and Electrical Engineering*, **2000**, 27, 1-28	4.3	30
358	A Novel Diversity-Based Replacement Strategy for Evolutionary Algorithms. *IEEE Transactions on Cybernetics*, **2016**, 46, 3233-3246	10.2	29
357	Multi-Objective Combinatorial Optimization: Problematic and Context. *Studies in Computational Intelligence*, **2010**, 1-21	0.8	29

356	Handling Constraints in Genetic Algorithms Using Dominance-based Tournaments **2002**, 273-284		29
355	Dynamic Constrained Optimization with offspring repair based Gravitational Search Algorithm **2013**,		26
354	MRMOGA: a new parallel multi-objective evolutionary algorithm based on the use of multiple resolutions. *Concurrency Computation Practice and Experience*, **2007**, 19, 397-441	1.4	26
353	TWO NEW GA-BASED METHODS FOR MULTIOBJECTIVE OPTIMIZATION. *Civil Engineering and Environmental Systems*, **1998**, 15, 207-243	2.1	26
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351	A Diversity-Enhanced Resource Allocation Strategy for Decomposition-Based Multiobjective Evolutionary Algorithm. *IEEE Transactions on Cybernetics*, **2018**, 48, 2388-2401	10.2	25
350	A ranking method based on the R2 indicator for many-objective optimization **2013**,		25
349	A coevolutionary multi-objective evolutionary algorithm		25
348	Evolutionary multiobjective optimization using a cultural algorithm		25
347	Convergence speed in multi-objective metaheuristics: Efficiency criteria and empirical study. *International Journal for Numerical Methods in Engineering*, **2010**, 84, 1344-1375	2.4	24
346	A new proposal for multi-objective optimization using differential evolution and rough sets theory **2006**,		24
345	Asymptotic convergence of metaheuristics for multiobjective optimization problems. *Soft Computing*, **2006**, 10, 1001-1005	3.5	24
344	IGD+-EMOA: A multi-objective evolutionary algorithm based on IGD+ **2016**,		24
343	Handling Constraints in Global Optimization Using an Artificial Immune System. *Lecture Notes in Computer Science*, **2005**, 234-247	0.9	24
342	A new indicator-based many-objective ant colony optimizer for continuous search spaces. *Swarm Intelligence*, **2017**, 11, 71-100	3	23
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340	Evolutionary hidden information detection by granulation-based fitness approximation. *Applied Soft Computing Journal*, **2010**, 10, 719-729	7.5	23
339	An Artificial Immune System Heuristic for Generating Short Addition Chains. *IEEE Transactions on Evolutionary Computation*, **2008**, 12, 1-24	15.6	23

338	A Review of Features and Limitations of Existing Scalable Multiobjective Test Suites. *IEEE Transactions on Evolutionary Computation*, **2019**, 23, 130-142	15.6	22
337	Reactive Power Handling by a Multi-Objective Teaching Learning Optimizer Based on Decomposition. *IEEE Transactions on Power Systems*, **2013**, 28, 3629-3637	7	22
336	MOEA/D assisted by rbf networks for expensive multi-objective optimization problems **2013**,		22
335	Applications of multi-objective evolutionary algorithms in economics and finance: A survey **2007**,		22
334	Optimization with constraints using a cultured differential evolution approach **2005**,		22
333	Self-adaptive penalties for GA-based optimization		22
332	Multimodal Multiobjective Evolutionary Optimization With Dual Clustering in Decision and Objective Spaces. *IEEE Transactions on Evolutionary Computation*, **2021**, 25, 130-144	15.6	22
331	Incorporation of implicit decision-maker preferences in multi-objective evolutionary optimization using a multi-criteria classification method. *Applied Soft Computing Journal*, **2017**, 50, 48-57	7.5	21
330	Study of preference relations in many-objective optimization **2009**,		21
329	A proposal to use stripes to maintain diversity in a multi-objective particle swarm optimizer		21
328	Convergence Analysis of a Multiobjective Artificial Immune System Algorithm. *Lecture Notes in Computer Science*, **2004**, 226-235	0.9	21
327	Evolutionary multiobjective design of combinational logic circuits		21
326	Surrogate-assisted multi-objective model selection for support vector machines. *Neurocomputing*, **2015**, 150, 163-172	5.4	20
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323	Solving Hard Multiobjective Optimization Problems Using ε-Constraint with Cultured Differential Evolution. *Lecture Notes in Computer Science*, **2006**, 543-552	0.9	20
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317	Analysis of leader selection strategies in a multi-objective Particle Swarm Optimizer **2013**,		18
316	Parametric reconfiguration improvement in non-iterative concurrent mechatronic design using an evolutionary-based approach. *Engineering Applications of Artificial Intelligence*, **2011**, 24, 757-771	7.2	18
315	Adding a diversity mechanism to a simple evolution strategy to solve constrained optimization problems		18
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313	A novel approach to select the best portfolio considering the preferences of the decision maker. *Swarm and Evolutionary Computation*, **2019**, 46, 140-153	9.8	17
312	Multi-objective model type selection. *Neurocomputing*, **2014**, 146, 83-94	5.4	17
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309	Preference incorporation to solve many-objective airfoil design problems **2011**,		17
308	A direct local search mechanism for decomposition-based multi-objective evolutionary algorithms **2012**,		17
307	A hybrid surrogate-based approach for evolutionary multi-objective optimization **2013**,		16
306	MOPSOhv: A new hypervolume-based multi-objective particle swarm optimizer **2014**,		16
305	EMOPSO: A Multi-Objective Particle Swarm Optimizer with Emphasis on Efficiency **2007**, 272-285		16
304	A Proposal to Hybridize Multi-Objective Evolutionary Algorithms with Non-gradient Mathematical Programming Techniques. *Lecture Notes in Computer Science*, **2008**, 837-846	0.9	16
303	Guest Editorial Special Issue on Differential Evolution. *IEEE Transactions on Evolutionary Computation*, **2011**, 15, 1-3	15.6	15

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137	Operational decomposition for large scale multi-objective optimization problems **2019**,		4
136	Constraint-handling techniques used with evolutionary algorithms **2017**,		4
135	Improving the integration of the IGD+ indicator into the selection mechanism of a Multi-objective Evolutionary Algorithm **2017**,		4
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