

# Roberto Santana

## List of Publications by Year in descending order

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146  
papers

2,335  
citations

361413

20  
h-index

265206

42  
g-index

152  
all docs

152  
docs citations

152  
times ranked

2394  
citing authors

#	ARTICLE	IF	CITATIONS
1	Machine learning in bioinformatics. Briefings in Bioinformatics, 2006, 7, 86-112.	6.5	674
2	Protein Folding in Simplified Models With Estimation of Distribution Algorithms. IEEE Transactions on Evolutionary Computation, 2008, 12, 418-438.	10.0	110
3	A review on evolutionary algorithms in Bayesian network learning and inference tasks. Information Sciences, 2013, 233, 109-125.	6.9	110
4	Multiobjective Estimation of Distribution Algorithm Based on Joint Modeling of Objectives and Variables. IEEE Transactions on Evolutionary Computation, 2014, 18, 519-542.	10.0	80
5	An extensive analysis of the interaction between missing data types, imputation methods, and supervised classifiers. Expert Systems With Applications, 2017, 89, 52-65.	7.6	78
6	Estimation of Distribution Algorithms with Kikuchi Approximations. Evolutionary Computation, 2005, 13, 67-97.	3.0	73
7	A review on probabilistic graphical models in evolutionary computation. Journal of Heuristics, 2012, 18, 795-819.	1.4	70
8	A review of estimation of distribution algorithms in bioinformatics. BioData Mining, 2008, 1, 6.	4.0	61
9	<b>Mateda-2.0</b>: A<i>MATLAB</i>Package for the Implementation and Analysis of Estimation of Distribution Algorithms. Journal of Statistical Software, 2010, 35, .	3.7	37
10	A Markov Network Based Factorized Distribution Algorithm for Optimization. Lecture Notes in Computer Science, 2003, , 337-348.	1.3	34
11	Side chain placement using estimation of distribution algorithms. Artificial Intelligence in Medicine, 2007, 39, 49-63.	6.5	34
12	Combining variable neighborhood search and estimation of distribution algorithms in the protein side chain placement problem. Journal of Heuristics, 2008, 14, 519-547.	1.4	34
13	Multiobjective decomposition-based Mallows Models estimation of distribution algorithm. A case of study for permutation flowshop scheduling problem. Information Sciences, 2017, 397-398, 137-154.	6.9	29
14	Research topics in discrete estimation of distribution algorithms based on factorizations. Memetic Computing, 2009, 1, 35-54.	4.0	28
15	A Markovianity based optimisation algorithm. Genetic Programming and Evolvable Machines, 2012, 13, 159-195.	2.2	28
16	Classification of neocortical interneurons using affinity propagation. Frontiers in Neural Circuits, 2013, 7, 185.	2.8	28
17	Exact Bayesian network learning in estimation of distribution algorithms. , 2007, , .		26
18	Evolved GANs for generating pareto set approximations. , 2018, , .		24

#	ARTICLE	IF	CITATIONS
19	Regularized continuous estimation of distribution algorithms. Applied Soft Computing Journal, 2013, 13, 2412-2432.	7.2	23
20	A novel in-silico approach for QSAR Studies of Anabolic and Androgenic Activities in the 17 $\beta$ -hydroxy-5 $\alpha$ -androstane Steroid Family. QSAR and Combinatorial Science, 2005, 24, 218-226.	1.4	22
21	Learning Factorizations in Estimation of Distribution Algorithms Using Affinity Propagation. Evolutionary Computation, 2010, 18, 515-546.	3.0	22
22	A Dialogue-Act Taxonomy for a Virtual Coach Designed to Improve the Life of Elderly. Multimodal Technologies and Interaction, 2019, 3, 52.	2.5	22
23	Structural transfer using EDAs: An application to multi-marker tagging SNP selection. , 2012, , .		18
24	Toward Understanding EDAs Based on Bayesian Networks Through a Quantitative Analysis. IEEE Transactions on Evolutionary Computation, 2012, 16, 173-189.	10.0	18
25	Univariate marginal distribution algorithm dynamics for a class of parametric functions with unitation constraints. Information Sciences, 2011, 181, 2340-2355.	6.9	17
26	Mining probabilistic models learned by EDAs in the optimization of multi-objective problems. , 2009, , .		16
27	A decomposition-based binary ACO algorithm for the multiobjective UBQP. Neurocomputing, 2017, 246, 58-68.	5.9	16
28	A parallel framework for loopy belief propagation. , 2007, , .		15
29	An EDA based on local markov property and gibbs sampling. , 2008, , .		15
30	Bivariate empirical and n-variate Archimedean copulas in estimation of distribution algorithms. , 2010, , .		14
31	Detection of sand dunes on Mars using a regular vine-based classification approach. Knowledge-Based Systems, 2019, 163, 858-874.	7.1	14
32	Protein Folding in 2-Dimensional Lattices with Estimation of Distribution Algorithms. Lecture Notes in Computer Science, 2004, , 388-398.	1.3	13
33	On the limits of effectiveness in estimation of distribution algorithms. , 2011, , .		13
34	On the Taxonomy of Optimization Problems Under Estimation of Distribution Algorithms. Evolutionary Computation, 2013, 21, 471-495.	3.0	13
35	Network measures for information extraction in evolutionary algorithms. International Journal of Computational Intelligence Systems, 2013, 6, 1163-1188.	2.7	13
36	Evolutionary Optimization of Compiler Flag Selection by Learning and Exploiting Flags Interactions. , 2016, , .		13

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37	C-Multi: A competent multi-swarm approach for many-objective problems. <i>Neurocomputing</i> , 2016, 180, 68-78.	5.9	13
38	The Role of a Priori Information in the Minimization of Contact Potentials by Means of Estimation of Distribution Algorithms. , 2007, , 247-257.		13
39	The Impact of Exact Probabilistic Learning Algorithms in EDAs Based on Bayesian Networks. <i>Studies in Computational Intelligence</i> , 2008, , 109-139.	0.9	13
40	Optimizing Brain Networks Topologies Using Multi-objective Evolutionary Computation. <i>Neuroinformatics</i> , 2011, 9, 3-19.	2.8	12
41	In-depth analysis of SVM kernel learning and its components. <i>Neural Computing and Applications</i> , 2021, 33, 6575-6594.	5.6	12
42	Multi-marker tagging single nucleotide polymorphism selection using estimation of distribution algorithms. <i>Artificial Intelligence in Medicine</i> , 2010, 50, 193-201.	6.5	11
43	Fighting the Symmetries. , 2015, , .		11
44	An investigation of clustering strategies in many-objective optimization: the I-Multi algorithm as a case study. <i>Swarm Intelligence</i> , 2017, 11, 101-130.	2.2	11
45	Analysis of the Complexity of the Automatic Pipeline Generation Problem. , 2018, , .		11
46	Mixtures of Kikuchi Approximations. <i>Lecture Notes in Computer Science</i> , 2006, , 365-376.	1.3	11
47	Adaptive Estimation of Distribution Algorithms. <i>Studies in Computational Intelligence</i> , 2008, , 177-197.	0.9	11
48	Maximal nonlinearity in balanced boolean functions with even number of inputs, revisited. , 2016, , .		10
49	Analyzing the probability of the optimum in EDAs based on Bayesian networks. , 2009, , .		9
50	Estimation of distribution algorithms. , 2011, , .		9
51	User Adapted Motor-Imaginary Brain-Computer Interface by means of EEG Channel Selection Based on Estimation of Distributed Algorithms. <i>Mathematical Problems in Engineering</i> , 2016, 2016, 1-12.	1.1	9
52	Combining CMA-ES and MOEA/DD for many-objective optimization. , 2017, , .		9
53	Feature extraction-based prediction of tool wear of Inconel 718 in face turning. <i>Insight: Non-Destructive Testing and Condition Monitoring</i> , 2018, 60, 443-450.	0.6	9
54	Regularized logistic regression and multiobjective variable selection for classifying MEG data. <i>Biological Cybernetics</i> , 2012, 106, 389-405.	1.3	8

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55	Not all PBILs are the same: Unveiling the different learning mechanisms of PBIL variants. Applied Soft Computing Journal, 2017, 53, 88-96.	7.2	8
56	Hybrid multi-objective Bayesian estimation of distribution algorithm: a comparative analysis for the multi-objective knapsack problem. Journal of Heuristics, 2018, 24, 25-47.	1.4	8
57	On the Performance of Multi-Objective Estimation of Distribution Algorithms for Combinatorial Problems. , 2018, , .		8
58	Expanding variational autoencoders for learning and exploiting latent representations in search distributions. , 2018, , .		8
59	An Experimental Study in Adaptive Kernel Selection for Bayesian Optimization. IEEE Access, 2019, 7, 184294-184302.	4.2	8
60	Decoding and encoding models reveal the role of mental simulation in the brain representation of meaning. Royal Society Open Science, 2020, 7, 192043.	2.4	8
61	Analysis of Bayesian Network Learning Techniques for a Hybrid Multi-objective Bayesian Estimation of Distribution Algorithm: a case study on MNK Landscape. Journal of Heuristics, 2021, 27, 549-573.	1.4	8
62	Multi-objective Optimization with Joint Probabilistic Modeling of Objectives and Variables. Lecture Notes in Computer Science, 2011, , 298-312.	1.3	8
63	On the human evaluation of universal audio adversarial perturbations. Computers and Security, 2022, 112, 102495.	6.0	8
64	An investigation of the selection strategies impact on MOEDAs: CMA-ES and UMDA. Applied Soft Computing Journal, 2018, 62, 963-973.	7.2	7
65	Algorithm 989. ACM Transactions on Mathematical Software, 2018, 44, 1-13.	2.9	7
66	Analysis of the transferability and robustness of GANs evolved for Pareto set approximations. Neural Networks, 2020, 132, 281-296.	5.9	7
67	Informative neural representations of unseen contents during higher-order processing in human brains and deep artificial networks. Nature Human Behaviour, 2022, 6, 720-731.	12.0	7
68	A Review of Estimation of Distribution Algorithms and Markov Networks. Adaptation, Learning, and Optimization, 2012, , 21-37.	0.6	6
69	Comprehensive characterization of the behaviors of estimation of distribution algorithms. Theoretical Computer Science, 2015, 598, 64-86.	0.9	6
70	Evolving MNK-landscapes with structural constraints. , 2015, , .		6
71	HMOBEDA. , 2016, , .		6
72	Vine copula classifiers for the mind reading problem. Progress in Artificial Intelligence, 2016, 5, 289-305.	2.4	6

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73	Affinity propagation enhanced by estimation of distribution algorithms. , 2011, , .		5
74	Exploring the probabilistic graphic model of a hybrid multi-objective Bayesian estimation of distribution algorithm. Applied Soft Computing Journal, 2018, 73, 328-343.	7.2	5
75	Tool-Path Problem in Direct Energy Deposition Metal-Additive Manufacturing: Sequence Strategy Generation. IEEE Access, 2020, 8, 91574-91585.	4.2	5
76	Analysis of the sensitivity of the End-Of-Turn Detection task to errors generated by the Automatic Speech Recognition process. Engineering Applications of Artificial Intelligence, 2021, 100, 104189.	8.1	5
77	Estimation of distribution algorithms for the computation of innovation estimators of diffusion processes. Mathematics and Computers in Simulation, 2021, 187, 449-467.	4.4	5
78	Continuous Estimation of Distribution Algorithms Based on Factorized Gaussian Markov Networks. Adaptation, Learning, and Optimization, 2012, , 157-173.	0.6	5
79	Automated design of hyper-heuristics components to solve the PSP problem with HP model. , 2017, , .		4
80	GP-based methods for domain adaptation: using brain decoding across subjects as a test-case. Genetic Programming and Evolvable Machines, 2019, 20, 385-411.	2.2	4
81	Fast Fitness Improvements in Estimation of Distribution Algorithms Using Belief Propagation. Adaptation, Learning, and Optimization, 2012, , 141-155.	0.6	4
82	Component weighting functions for adaptive search with EDAs. , 2008, , .		3
83	Capturing Relationships in Multi-objective Optimization. , 2015, , .		3
84	A review of message passing algorithms in estimation of distribution algorithms. Natural Computing, 2016, 15, 165-180.	3.0	3
85	A comparison of probabilistic-based optimization approaches for vehicle routing problems. , 2017, , .		3
86	Transfer weight functions for injecting problem information in the multi-objective CMA-ES. Memetic Computing, 2017, 9, 153-180.	4.0	3
87	Probabilistic Analysis of Pareto Front Approximation for a Hybrid Multi-objective Bayesian Estimation of Distribution Algorithm. , 2017, , .		3
88	Sentiment analysis with genetically evolved gaussian kernels. , 2019, , .		3
89	Automatic Design of Convolutional Neural Networks using Grammatical Evolution. , 2019, , .		3
90	A Symmetric grammar approach for designing segmentation models. , 2020, , .		3

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91	Automatic Design of Deep Neural Networks Applied to Image Segmentation Problems. Lecture Notes in Computer Science, 2021, , 98-113.	1.3	3
92	Evolution of Gaussian Process kernels for machine translation post-editing effort estimation. Annals of Mathematics and Artificial Intelligence, 2021, 89, 835-856.	1.3	3
93	On the exploitation of neuroevolutionary information. , 2021, , .		3
94	Evolving Gaussian process kernels from elementary mathematical expressions for time series extrapolation. Neurocomputing, 2021, 462, 426-439.	5.9	3
95	Evolving Gaussian Process Kernels for Translation Editing Effort Estimation. Lecture Notes in Computer Science, 2020, , 304-318.	1.3	3
96	Adding Probabilistic Dependencies to the Search of Protein Side Chain Configurations Using EDAs. Lecture Notes in Computer Science, 2008, , 1120-1129.	1.3	3
97	Evaluation of the Temperature and Time in Centrifugation-Assisted Freeze Concentration. Applied Sciences (Switzerland), 2020, 10, 9130.	2.5	3
98	Investigating RNNs for vehicle volume forecasting in service stations. , 2020, , .		3
99	EvoFlow: A Python library for evolving deep neural network architectures in tensorflow. , 2020, , .		3
100	A grammar-based GP approach applied to the design of deep neural networks. Genetic Programming and Evolvable Machines, 2022, 23, 427-452.	2.2	3
101	Estimation of Bayesian networks algorithms in a class of complex networks. , 2010, , .		2
102	Regularized k-order markov models in EDAs. , 2011, , .		2
103	A direct optimization approach to the P300 speller. , 2011, , .		2
104	Introducing the use of model-based evolutionary algorithms for EEG-based motor imagery classification. , 2012, , .		2
105	Evolving NK-complexity for evolutionary solvers. , 2012, , .		2
106	Symmetry in evolutionary and estimation of distribution algorithms. , 2013, , .		2
107	Multi-objective NM-Landscapes. , 2015, , .		2
108	Multi-view classification of psychiatric conditions based on saccades. Applied Soft Computing Journal, 2015, 31, 308-316.	7.2	2

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109	Modeling dependencies between decision variables and objectives with copula models. , 2018, , .		2
110	Optimizing permutation-based problems with a discrete vine-copula as a model for EDA. , 2019, , .		2
111	Message Passing Methods for Estimation of Distribution Algorithms Based on Markov Networks. Lecture Notes in Computer Science, 2013, , 419-430.	1.3	2
112	Analyzing the k Most Probable Solutions in EDAs Based on Bayesian Networks. Adaptation, Learning, and Optimization, 2010, , 163-189.	0.6	2
113	Critical Issues in Model-Based Surrogate Functions in Estimation of Distribution Algorithms. Lecture Notes in Computer Science, 2013, , 1-13.	1.3	2
114	An empirical comparison of distance/similarity measures for Natural Language Processing. , 0, , .		2
115	Bayesian Optimization Approaches for Massively Multi-modal Problems. Lecture Notes in Computer Science, 2020, , 383-397.	1.3	2
116	Automatic Structural Search for Multi-task Learning VALPs. Communications in Computer and Information Science, 2020, , 25-36.	0.5	2
117	Quantitative genetics in multi-objective optimization algorithms. , 2011, , .		1
118	A differential evolution algorithm for the detection of synaptic vesicles. , 2011, , .		1
119	Probabilistic Graphical Models and Markov Networks. Adaptation, Learning, and Optimization, 2012, , 3-19.	0.6	1
120	MOA - Markovian Optimisation Algorithm. Adaptation, Learning, and Optimization, 2012, , 39-53.	0.6	1
121	MN-EDA and the Use of Clique-Based Factorisations in EDAs. Adaptation, Learning, and Optimization, 2012, , 73-87.	0.6	1
122	Conductance interaction identification by means of Boltzmann distribution and mutual information analysis in conductance-based neuron models. BMC Neuroscience, 2012, 13, .	1.9	1
123	Model-based template-recombination in Markov network estimation of distribution algorithms for problems with discrete representation. , 2013, , .		1
124	Mixtures of Generalized Mallows models for solving the quadratic assignment problem. , 2015, , .		1
125	Envisioning the Benefits of Back-Drive in Evolutionary Algorithms. , 2020, , .		1
126	Towards Automatic Construction of Multi-Network Models for Heterogeneous Multi-Task Learning. ACM Transactions on Knowledge Discovery From Data, 2021, 15, 1-23.	3.5	1



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127	A Probabilistic Evolutionary Optimization Approach to Compute Quasiparticle Braids. Lecture Notes in Computer Science, 2014, , 13-24.	1.3	1
128	Using Probabilistic Dependencies Improves the Search of Conductance-Based Compartmental Neuron Models. Lecture Notes in Computer Science, 2010, , 170-181.	1.3	1
129	Synergies between Network-Based Representation and Probabilistic Graphical Models for Classification, Inference and Optimization Problems in Neuroscience. Lecture Notes in Computer Science, 2010, , 149-158.	1.3	1
130	Exploring Gaps in DeepFool in Search of More Effective Adversarial Perturbations. Lecture Notes in Computer Science, 2020, , 215-227.	1.3	1
131	Analysis of dominant classes in universal adversarial perturbations. Knowledge-Based Systems, 2022, 236, 107719.	7.1	1
132	Adversarial Perturbations for Evolutionary Optimization. Lecture Notes in Computer Science, 2022, , 408-422.	1.3	1
133	On the use of Factorized Distribution Algorithms for problems defined on graphs. Electronic Notes in Discrete Mathematics, 2001, 8, 84.	0.4	0
134	Maximizing the number of polychronous groups in spiking networks. , 2012, , .		0
135	An analysis of the use of probabilistic modeling for synaptic connectivity prediction from genomic data. , 2012, , .		0
136	Multi-objective optimization approach to detecting extremal patterns in social networks. , 2013, , .		0
137	Investigating Selection Strategies in Multi-objective Probabilistic Model Based Algorithms. , 2016, , .		0
138	On the Design of Hard mUBQP Instances. , 2016, , .		0
139	Evolutionary Approaches to Optimization Problems in Chimera Topologies. , 2016, , .		0
140	Different scenarios for survival analysis of evolutionary algorithms. , 2017, , .		0
141	Dynamic programming operators for the bi-objective Traveling Thief Problem. , 2020, , .		0
142	Transfer learning in hierarchical dialogue topic classification with neural networks*. , 2020, , .		0
143	The Relationship Between Graphical Representations of Regular Vine Copulas and Polytrees. Communications in Computer and Information Science, 2018, , 678-690.	0.5	0
144	How the brain encodes meaning: Comparing word embedding and computer vision models to predict fMRI data during visual word recognition. , 2019, , .		0

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145	Adaptation of a Branching Algorithm to Solve the Multi-Objective Hamiltonian Cycle Problem. Operations Research Proceedings: Papers of the Annual Meeting = Vorträge Der Jahrestagung / DGOR, 2020, , 231-237.	0.1	0
146	Multi-objective Approach to the Protein Structure Prediction Problem. , 2020, , 151-169.		0