

# Christian Igel

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

99  
papers

4,296  
citations

28  
h-index

65  
g-index

116  
ext. papers

5,351  
ext. citations

4.3  
avg, IF

5.84  
L-index

#	Paper	IF	Citations
99	U-Sleep: resilient high-frequency sleep staging. <i>Npj Digital Medicine</i> , <b>2021</b> , 4, 72	15.7	20
98	The International Workshop on Osteoarthritis Imaging Knee MRI Segmentation Challenge: A Multi-Institute Evaluation and Analysis Framework on a Standardized Dataset. <i>Radiology: Artificial Intelligence</i> , <b>2021</b> , 3, e200078	8.7	16
97	Developing and validating COVID-19 adverse outcome risk prediction models from a bi-national European cohort of 5594 patients. <i>Scientific Reports</i> , <b>2021</b> , 11, 3246	4.9	26
96	Using machine learning for predicting intensive care unit resource use during the COVID-19 pandemic in Denmark. <i>Scientific Reports</i> , <b>2021</b> , 11, 18959	4.9	2
95	Algorithms for estimating the partition function of restricted Boltzmann machines. <i>Artificial Intelligence</i> , <b>2020</b> , 278, 103195	3.6	2
94	An unexpectedly large count of trees in the West African Sahara and Sahel. <i>Nature</i> , <b>2020</b> , 587, 78-82	50.4	77
93	On PAC-Bayesian bounds for random forests. <i>Machine Learning</i> , <b>2019</b> , 108, 1503-1522	4	1
92	Accurate Segmentation of Dental Panoramic Radiographs with U-NETS <b>2019</b> ,		18
91	Impact of device programming on the success of the first anti-tachycardia pacing therapy: An anonymized large-scale study. <i>PLoS ONE</i> , <b>2019</b> , 14, e0219533	3.7	2
90	One Network to Segment Them All: A General, Lightweight System for Accurate 3D Medical Image Segmentation. <i>Lecture Notes in Computer Science</i> , <b>2019</b> , 30-38	0.9	25
89	Predicting electrical storms by remote monitoring of implantable cardioverter-defibrillator patients using machine learning. <i>Europace</i> , <b>2019</b> , 21, 268-274	3.9	13
88	Population-Contrastive-Divergence: Does consistency help with RBM training?. <i>Pattern Recognition Letters</i> , <b>2018</b> , 102, 1-7	4.7	3
87	Sparse Incomplete LU-Decomposition for Wave Farm Designs Under Realistic Conditions. <i>Lecture Notes in Computer Science</i> , <b>2018</b> , 512-524	0.9	1
86	Training Big Random Forests with Little Resources <b>2018</b> ,		2
85	Sacrificing information for the greater good: how to select photometric bands for optimal accuracy. <i>Monthly Notices of the Royal Astronomical Society</i> , <b>2017</b> , 464, 2577-2596	4.3	12
84	Differential diagnosis of mild cognitive impairment and Alzheimer's disease using structural MRI cortical thickness, hippocampal shape, hippocampal texture, and volumetry. <i>NeuroImage: Clinical</i> , <b>2017</b> , 13, 470-482	5.3	85
83	Qualitative and Quantitative Assessment of Step Size Adaptation Rules <b>2017</b> ,		5

82	Adaptive pattern recognition in real-time video-based soccer analysis. <i>Journal of Real-Time Image Processing</i> , <b>2017</b> , 13, 345-361	1.9	8
81	Early detection of Alzheimer's disease using MRI hippocampal texture. <i>Human Brain Mapping</i> , <b>2016</b> , 37, 1148-61	5.9	108
80	Separating Timing, Movement Conditions and Individual Differences in the Analysis of Human Movement. <i>PLoS Computational Biology</i> , <b>2016</b> , 12, e1005092	5	10
79	Integrated Optimization of Long-Range Underwater Signal Detection, Feature Extraction, and Classification for Nuclear Treaty Monitoring. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , <b>2016</b> , 54, 3649-3659	8.1	10
78	Unbounded Population MO-CMA-ES for the Bi-Objective BBOB Test Suite <b>2016</b> ,		10
77	A More Efficient Rank-one Covariance Matrix Update for Evolution Strategies <b>2015</b> ,		9
76	A bound for the convergence rate of parallel tempering for sampling restricted Boltzmann machines. <i>Theoretical Computer Science</i> , <b>2015</b> , 598, 102-117	1.1	5
75	Active learning with support vector machines. <i>Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery</i> , <b>2014</b> , 4, 313-326	6.9	59
74	Training restricted Boltzmann machines: An introduction. <i>Pattern Recognition</i> , <b>2014</b> , 47, 25-39	7.7	263
73	No Free Lunch Theorems: Limitations and Perspectives of Metaheuristics. <i>Natural Computing Series</i> , <b>2014</b> , 1-23	2.5	7
72	Echtzeit-Videoanalyse im Fußball. <i>KI - Kunstliche Intelligenz</i> , <b>2013</b> , 27, 235-240	1.8	1
71	Linear feature selection in texture analysis - A PLS based method. <i>Machine Vision and Applications</i> , <b>2013</b> , 24, 1435-1444	2.8	1
70	The flip-the-state transition operator for restricted Boltzmann machines. <i>Machine Learning</i> , <b>2013</b> , 93, 53-69	4	15
69	Deep feature learning for knee cartilage segmentation using a triplanar convolutional neural network. <i>Lecture Notes in Computer Science</i> , <b>2013</b> , 16, 246-53	0.9	243
68	Detection of traffic signs in real-world images: The German traffic sign detection benchmark <b>2013</b> ,		272
67	Speeding up many-objective optimization by Monte Carlo approximations. <i>Artificial Intelligence</i> , <b>2013</b> , 204, 22-29	3.6	25
66	A Note on Generalization Loss When Evolving Adaptive Pattern Recognition Systems. <i>IEEE Transactions on Evolutionary Computation</i> , <b>2013</b> , 17, 345-352	15.6	3
65	Shape Index Descriptors Applied to Texture-Based Galaxy Analysis <b>2013</b> ,		8

64	Femoral cartilage segmentation in knee MRI scans using two stage voxel classification. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference, 2013, 2013, 5469-72</i>	0.9	6
63	Nearest neighbour regression outperforms model-based prediction of specific star formation rate <b>2013,</b>		6
62	Introduction to the Special Issue on Machine Learning for Traffic Sign Recognition. <i>IEEE Transactions on Intelligent Transportation Systems, 2012, 13, 1481-1483</i>	6.1	2
61	Cascaded classifier for large-scale data applied to automatic segmentation of articular cartilage <b>2012,</b>		2
60	An Introduction to Restricted Boltzmann Machines. <i>Lecture Notes in Computer Science, 2012, 14-36</i>	0.9	214
59	The German Traffic Sign Recognition Benchmark: A multi-class classification competition <b>2011,</b>		344
58	The logarithmic hypervolume indicator <b>2011,</b>		7
57	Bounding the bias of contrastive divergence learning. <i>Neural Computation, 2011, 23, 664-73</i>	2.9	31
56	Huge Music Archives on Mobile Devices. <i>IEEE Signal Processing Magazine, 2011, 28, 24-39</i>	9.4	6
55	Real-Time Estimation of Optical Flow Based on Optimized Haar Wavelet Features. <i>Lecture Notes in Computer Science, 2011, 448-461</i>	0.9	6
54	Improved Working Set Selection for LaRank. <i>Lecture Notes in Computer Science, 2011, 327-334</i>	0.9	
53	New Uncertainty Handling Strategies in Multi-objective Evolutionary Optimization <b>2010, 260-269</b>		5
52	Hydroacoustic Signal Classification Using Kernel Functions for Variable Feature Sets <b>2010,</b>		1
51	A dynamic neural field model of mesoscopic cortical activity captured with voltage-sensitive dye imaging. <i>PLoS Computational Biology, 2010, 6, e1000919</i>	5	38
50	Scaling up indicator-based MOEAs by approximating the least hypervolume contributor <b>2010,</b>		3
49	Improved step size adaptation for the MO-CMA-ES <b>2010,</b>		26
48	Maximum likelihood model selection for 1-norm soft margin SVMs with multiple parameters. <i>IEEE Transactions on Pattern Analysis and Machine Intelligence, 2010, 32, 1522-8</i>	13.3	19
47	Efficient update of the covariance matrix inverse in iterated linear discriminant analysis. <i>Pattern Recognition Letters, 2010, 31, 1903-1907</i>	4.7	5

46	Empirical Analysis of the Divergence of Gibbs Sampling Based Learning Algorithms for Restricted Boltzmann Machines. <i>Lecture Notes in Computer Science</i> , <b>2010</b> , 208-217	0.9	21
45	Uncertainty handling CMA-ES for reinforcement learning <b>2009</b> ,		6
44	Hoeffding and Bernstein races for selecting policies in evolutionary direct policy search <b>2009</b> ,		37
43	Efficient covariance matrix update for variable metric evolution strategies. <i>Machine Learning</i> , <b>2009</b> , 75, 167-197	4	79
42	Toward registration of 3D ultrasound and CT images of the spine in clinical praxis: design and evaluation of a data acquisition protocol. <i>Ultrasound in Medicine and Biology</i> , <b>2009</b> , 35, 1773-82	3.5	18
41	Neuroevolution strategies for episodic reinforcement learning. <i>Journal of Algorithms</i> , <b>2009</b> , 64, 152-168		42
40	Genesis of Organic Computing Systems: Coupling Evolution and Learning. <i>Understanding Complex Systems</i> , <b>2009</b> , 141-166	0.4	1
39	Recombination for Learning Strategy Parameters in the MO-CMA-ES. <i>Lecture Notes in Computer Science</i> , <b>2009</b> , 155-168	0.9	9
38	Registration of CT and Intraoperative 3-D Ultrasound Images of the Spine Using Evolutionary and Gradient-Based Methods. <i>IEEE Transactions on Evolutionary Computation</i> , <b>2008</b> , 12, 284-296	15.6	57
37	Scalarization versus indicator-based selection in multi-objective CMA evolution strategies <b>2008</b> ,		14
36	Second-order SMO improves SVM online and active learning. <i>Neural Computation</i> , <b>2008</b> , 20, 374-82	2.9	19
35	Uncertainty Handling in Model Selection for Support Vector Machines. <i>Lecture Notes in Computer Science</i> , <b>2008</b> , 185-194	0.9	4
34	Evolution Strategies for Direct Policy Search. <i>Lecture Notes in Computer Science</i> , <b>2008</b> , 428-437	0.9	22
33	Variable Metric Reinforcement Learning Methods Applied to the Noisy Mountain Car Problem. <i>Lecture Notes in Computer Science</i> , <b>2008</b> , 136-150	0.9	9
32	Steady-State Selection and Efficient Covariance Matrix Update in the Multi-objective CMA-ES <b>2007</b> , 171-185		21
31	Covariance matrix adaptation for multi-objective optimization. <i>Evolutionary Computation</i> , <b>2007</b> , 15, 1-28	4.3	55
30	Evolutionary optimization of sequence kernels for detection of bacterial gene starts. <i>International Journal of Neural Systems</i> , <b>2007</b> , 17, 369-81	6.2	19
29	Reducing the number of fitness evaluations in graph genetic programming using a canonical graph indexed database. <i>Evolutionary Computation</i> , <b>2007</b> , 15, 199-221	4.3	13

28	Gradient-based optimization of kernel-target alignment for sequence kernels applied to bacterial gene start detection. <i>IEEE/ACM Transactions on Computational Biology and Bioinformatics</i> , <b>2007</b> , 4, 216-226	3	35
27	Resilient Approximation of Kernel Classifiers. <i>Lecture Notes in Computer Science</i> , <b>2007</b> , 139-148	0.9	1
26	A computational efficient covariance matrix update and a (1+1)-CMA for evolution strategies <b>2006</b> ,		85
25	Multi-Objective Optimization of Support Vector Machines <b>2006</b> , 199-220		29
24	Multi-Objective Optimization of Support Vector Machines <b>2006</b> , 199-220		1
23	Evolutionary Optimization of Sequence Kernels for Detection of Bacterial Gene Starts. <i>Lecture Notes in Computer Science</i> , <b>2006</b> , 827-836	0.9	3
22	Multi-Objective Neural Network Optimization for Visual Object Detection <b>2006</b> , 629-655		9
21	Multi-Objective Neural Network Optimization for Visual Object Detection <b>2006</b> , 629-655		
20	Registration of bone structures in 3D ultrasound and CT data: Comparison of different optimization strategies. <i>International Congress Series</i> , <b>2005</b> , 1281, 242-247		6
19	Evolutionary tuning of multiple SVM parameters. <i>Neurocomputing</i> , <b>2005</b> , 64, 107-117	5.4	293
18	A No-Free-Lunch theorem for non-uniform distributions of target functions. <i>Mathematical Modelling and Algorithms</i> , <b>2005</b> , 3, 313-322		19
17	Registrierung von Knochen in 3D-Ultraschall- und CT-Daten: Vergleich verschiedener Optimierungsverfahren <b>2005</b> , 345-349		3
16	Gradient-based adaptation of general gaussian kernels. <i>Neural Computation</i> , <b>2005</b> , 17, 2099-105	2.9	40
15	Multi-objective Model Selection for Support Vector Machines. <i>Lecture Notes in Computer Science</i> , <b>2005</b> , 534-546	0.9	34
14	Rprop Using the Natural Gradient <b>2005</b> , 259-272		20
13	Evolutionary Optimization of Neural Systems: The Use of Strategy Adaptation <b>2005</b> , 103-123		13
12	EVOLUTIONARY MULTI-OBJECTIVE OPTIMISATION OF NEURAL NETWORKS FOR FACE DETECTION. <i>International Journal of Computational Intelligence and Applications</i> , <b>2004</b> , 04, 237-253	1.2	30
11	Evolutionary Adaptation of Nonlinear Dynamical Systems in Computational Neuroscience. <i>Genetic Programming and Evolvable Machines</i> , <b>2004</b> , 5, 215-227	2	4

10	A No-Free-Lunch Theorem for Non-Uniform Distributions of Target Functions. <i>Mathematical Modelling and Algorithms</i> , <b>2004</b> , 3, 313-322		70
9	Neutrality and self-adaptation. <i>Natural Computing</i> , <b>2003</b> , 2, 117-132	1.3	16
8	Empirical evaluation of the improved Rprop learning algorithms. <i>Neurocomputing</i> , <b>2003</b> , 50, 105-123	5.4	315
7	Operator adaptation in evolutionary computation and its application to structure optimization of neural networks. <i>Neurocomputing</i> , <b>2003</b> , 55, 347-361	5.4	30
6	On classes of functions for which No Free Lunch results hold. <i>Information Processing Letters</i> , <b>2003</b> , 86, 317-321	0.8	69
5	Cross-reactive metal ion sensor array in a micro titer plate format. <i>Analytical Chemistry</i> , <b>2003</b> , 75, 4389-96.8		99
4	Evolving field models for inhibition effects in early vision. <i>Neurocomputing</i> , <b>2002</b> , 44-46, 467-472	5.4	2
3	Task-dependent evolution of modularity in neural networks. <i>Connection Science</i> , <b>2002</b> , 14, 219-229	2.8	14
2	Optimization of dynamic neural fields. <i>Neurocomputing</i> , <b>2001</b> , 36, 225-233	5.4	22
1	Chaining syllogism applied to fuzzy IF-THEN rules and rule bases. <i>Lecture Notes in Computer Science</i> , <b>1997</b> , 179-188	0.9	1