

# Perceptron Learning in Engineering Design

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Citation Report

#	ARTICLE	IF	CITATIONS
1	Neural Networks in Structural Engineering. Computer-Aided Civil and Infrastructure Engineering, 1990, 5, 207-215.	9.8	106
2	A model of perceptron learning with a hidden layer for engineering design. Neurocomputing, 1991, 3, 3-14.	5.9	23
3	A Support System for Fuzzy Optimum Aseismic Structural Design of Reinforced Concrete Buildings Using Graphical Representation. Computer-Aided Civil and Infrastructure Engineering, 1992, 7, 29-42.	9.8	2
4	Parallel backpropagation learning algorithms on CRAY Y-MP8/864 supercomputer. Neurocomputing, 1993, 5, 287-302.	5.9	114
5	Fuzzy Neural Network Learning Model for Image Recognition. Integrated Computer-Aided Engineering, 1993, 1, 43-55.	4.6	21
6	Machine Learning of Design Rules: Methodology and Case Study. Journal of Computing in Civil Engineering, 1994, 8, 286-308.	4.7	13
7	Application of Neural Networks in Vibrational Signature Analysis. Journal of Engineering Mechanics - ASCE, 1994, 120, 250-265.	2.9	20
8	An adaptive conjugate gradient learning algorithm for efficient training of neural networks. Applied Mathematics and Computation, 1994, 62, 81-102.	2.2	134
9	Object-oriented backpropagation and its application to structural design. Neurocomputing, 1994, 6, 45-55.	5.9	67
10	A Structural Damage Neural Network Monitoring System. Computer-Aided Civil and Infrastructure Engineering, 1994, 9, 83-96.	9.8	46
11	Effect of Representation on the Performance of Neural Networks in Structural Engineering Applications. Computer-Aided Civil and Infrastructure Engineering, 1994, 9, 97-108.	9.8	44
12	Machine Learning User Preferences for Structural Design. Computer-Aided Civil and Infrastructure Engineering, 1994, 9, 185-197.	9.8	5
13	A parallel genetic/neural network learning algorithm for MIMD shared memory machines. IEEE Transactions on Neural Networks, 1994, 5, 900-909.	4.2	118
14	A Backpropagation Neural Network Model for Semi-rigid Steel Connections. Computer-Aided Civil and Infrastructure Engineering, 1995, 10, 77-87.	9.8	39
15	A Pavement Condition Rating Model Using Backpropagation Neural Networks. Computer-Aided Civil and Infrastructure Engineering, 1995, 10, 433-441.	9.8	43
16	A neural dynamics model for structural optimization Theory. Computers and Structures, 1995, 57, 383-390.	4.4	135
17	Knowledge engineering. Archives of Computational Methods in Engineering, 1995, 2, 51-68.	10.2	5
18	Counterpropagation Neural Networks in Structural Engineering. Journal of Structural Engineering, 1995, 121, 1205-1212.	3.4	94

#	ARTICLE	IF	CITATIONS
19	A Fuzzy Expert System for Damage Assessment Using Genetic Algorithms and Neural Networks. Computer-Aided Civil and Infrastructure Engineering, 1996, 11, 37-45.	9.8	29
20	A Fuzzy Neural Network Approach to Evaluation of Slope Failure Potential. Computer-Aided Civil and Infrastructure Engineering, 1996, 11, 59-66.	9.8	65
21	Constructability Analysis: Machine Learning Approach. Journal of Computing in Civil Engineering, 1997, 11, 8-16.	4.7	25
22	Scheduling/Cost Optimization and Neural Dynamics Model for Construction. Journal of Construction Engineering and Management - ASCE, 1997, 123, 450-458.	3.8	183
23	A neural network approach to the modelling, calculation and identification of semi-rigid connections in steel structures. Journal of Constructional Steel Research, 1997, 44, 91-105.	3.9	22
24	Fundamentals of Artificial Neural Networks. CISM International Centre for Mechanical Sciences, Courses and Lectures, 1999, , 1-51.	0.6	11
25	Recurrent Neural Networks for Structural Optimization. Computer-Aided Civil and Infrastructure Engineering, 1999, 14, 445-451.	9.8	6
26	Adaptive neural networks for model updating of structures. Smart Materials and Structures, 2000, 9, 59-68.	3.5	30
27	Neural networks in mechanics of structures and materials – new results and prospects of applications. Computers and Structures, 2001, 79, 2261-2276.	4.4	197
28	Neural Networks in Civil Engineering: 1989–2000. Computer-Aided Civil and Infrastructure Engineering, 2001, 16, 126-142.	9.8	600
29	Fatigue control of thin-walled structures. International Journal for Numerical Methods in Engineering, 2003, 57, 653-667.	2.8	0
30	Behaviour control of modern composite structures. International Journal for Numerical Methods in Engineering, 2004, 61, 2389-2401.	2.8	1
31	Bionics and fractal configurations in structural engineering. International Journal for Numerical Methods in Engineering, 2006, 68, 790-807.	2.8	3
32	Improved spiking neural networks for EEG classification and epilepsy and seizure detection. Integrated Computer-Aided Engineering, 2007, 14, 187-212.	4.6	339
33	Dynamic identification of fractal structures. International Journal for Numerical Methods in Engineering, 2007, 71, 1321-1341.	2.8	3
34	A parametric study for distortional buckling stress on cold-formed steel using a neural network. Journal of Constructional Steel Research, 2007, 63, 686-691.	3.9	26
35	A new tool based on artificial neural networks for the design of lightweight ceramic–metal armour against high-velocity impact of solids. International Journal of Solids and Structures, 2008, 45, 6369-6383.	2.7	18
36	Research on Structural Optimization Arithmetic of Uplift Device of a Sugarcane Harvester Based on Hopfield Neural Network. , 2009, , .		0

#	ARTICLE	IF	CITATIONS
37	Neural networks model and adaptive neuro-fuzzy inference system for predicting the moment capacity of ferrocement members. <i>Engineering Structures</i> , 2010, 32, 1723-1734.	5.3	33
38	Ballistic Impacts on Polymer Matrix Composites, <i>Composite Armor, Personal Armor. CISM International Centre for Mechanical Sciences, Courses and Lectures</i> , 2011, , 305-403.	0.6	27
39	Dealing with limited data in ballistic impact scenarios: an empirical comparison of different neural network approaches. <i>Applied Intelligence</i> , 2011, 35, 89-109.	5.3	22
40	Analysis of experimental data sets for local scour depth around bridge abutments using artificial neural networks. <i>Water S A</i> , 2011, 37, .	0.4	4
41	The parametric s-functions and the perceptron in gastric cancer surgery decision making. , 2012, , .		1
42	Three-dimensional responses of buried corrugated pipes and ANN-based method for predicting pipe deflections. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2012, 36, 1-16.	3.3	4
43	A neural network-based methodology for the recreation of high-speed impacts on metal armours. <i>Neural Computing and Applications</i> , 2012, 21, 91-107.	5.6	3
44	Fragility functions of blockwork wharves using artificial neural networks. <i>Soil Dynamics and Earthquake Engineering</i> , 2013, 52, 88-102.	3.8	33
45	SENSOR (GROUP FEATURE) SELECTION WITH CONTROLLED REDUNDANCY IN A CONNECTIONIST FRAMEWORK. <i>International Journal of Neural Systems</i> , 2014, 24, 1450021.	5.2	10
46	Spiral Dynamics Algorithm. <i>International Journal on Artificial Intelligence Tools</i> , 2014, 23, 1430001.	1.0	44
47	Nonlinear Identification of a Magneto-rheological Damper Based on Dynamic Neural Networks. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2014, 29, 221-233.	9.8	57
48	Water Drop Algorithms. <i>International Journal on Artificial Intelligence Tools</i> , 2014, 23, 1430002.	1.0	46
49	Fuzzy logic model for the prediction failure analysis of composite plates under various cure temperatures. <i>Journal of the Brazilian Society of Mechanical Sciences and Engineering</i> , 2014, 36, 443-448.	1.6	3
50	Modeling of Compressive Strength for Self-Consolidating High-Strength Concrete Incorporating Palm Oil Fuel Ash. <i>Materials</i> , 2016, 9, 396.	2.9	33
51	Using artificial neural networks in the design of orthotropic bridge decks. <i>AEJ - Alexandria Engineering Journal</i> , 2016, 55, 3195-3203.	6.4	15
52	Kinematic accuracy analysis of planar mechanisms with clearance involving random and epistemic uncertainty. <i>European Journal of Mechanics, A/Solids</i> , 2016, 58, 256-261.	3.7	41
53	Seismic parameters™ combinations for the optimum prediction of the damage state of R/C buildings using neural networks. <i>Advances in Engineering Software</i> , 2017, 106, 1-16.	3.8	77
54	Modeling Self-Healing of Concrete Using Hybrid Genetic Algorithm Artificial Neural Network. <i>Materials</i> , 2017, 10, 135.	2.9	62

#	ARTICLE	IF	CITATIONS
55	Approaches to the rapid seismic damage prediction of r/c buildings using artificial neural networks. Engineering Structures, 2018, 165, 120-141.	5.3	111
56	A Fast Detection Method via Region-Based Fully Convolutional Neural Networks for Shield Tunnel Lining Defects. Computer-Aided Civil and Infrastructure Engineering, 2018, 33, 638-654.	9.8	234
57	A Pulse Width Modulation based Power-elastic and Robust Mixed-signal Perceptron Design. , 2019, , .		2
58	Comparative evaluation of MFP and RBF neural networks' ability for instant estimation of r/c buildings' seismic damage level. Engineering Structures, 2019, 197, 109436.	5.3	24
59	Comparative Study of Predictive Analysis Methods to Estimate Bridge Response. Transportation Research Record, 2019, 2673, 365-376.	1.9	3
60	Abrasion resistance behaviour of fly ash based geopolymer using nanoindentation and artificial neural network. Construction and Building Materials, 2019, 212, 635-644.	7.2	26
61	Autonomous damage segmentation and measurement of glazed tiles in historic buildings via deep learning. Computer-Aided Civil and Infrastructure Engineering, 2020, 35, 277-291.	9.8	58
62	Cost estimation in road construction using artificial neural network. Neural Computing and Applications, 2020, 32, 9343-9355.	5.6	37
63	Neural network design for energy-autonomous artificial intelligence applications using temporal encoding. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190166.	3.4	6
64	Optimum Prediction of the Transfer Length of Strands Based on Artificial Neural Networks. Procedia Manufacturing, 2020, 44, 505-512.	1.9	6
65	Data Processing Using Artificial Neural Networks. , 0, , .		17
66	Improving the Results of the Earned Value Management Technique Using Artificial Neural Networks in Construction Projects. Symmetry, 2020, 12, 1745.	2.2	12
67	Analysis of rheological properties of MWCNT/SiO <sub>2</sub> hydraulic oil nanolubricants using regression and artificial neural network. International Communications in Heat and Mass Transfer, 2020, 116, 104723.	5.6	17
68	Automatic Crack Detection on Road Pavements Using Encoder-Decoder Architecture. Materials, 2020, 13, 2960.	2.9	75
69	A variational Bayesian neural network for structural health monitoring and cost-informed decision-making in miter gates. Structural Health Monitoring, 2022, 21, 4-18.	7.5	35
70	A Sensitivity and Robustness Analysis of GPR and ANN for High-Performance Concrete Compressive Strength Prediction Using a Monte Carlo Simulation. Sustainability, 2020, 12, 830.	3.2	124
71	Earthquake Hazard Safety Assessment of Existing Buildings Using Optimized Multi-Layer Perceptron Neural Network. Energies, 2020, 13, 2060.	3.1	31
72	Transdisciplinary, expediency, and rigor of CACAIE. Computer-Aided Civil and Infrastructure Engineering, 2020, 35, 646-648.	9.8	2

#	ARTICLE	IF	CITATIONS
73	Machine learning applications for building structural design and performance assessment: State-of-the-art review. Journal of Building Engineering, 2021, 33, 101816.	3.4	150
74	Review on the new development of vibration-based damage identification for civil engineering structures: 2010â€“2019. Journal of Sound and Vibration, 2021, 491, 115741.	3.9	248
75	Efficient machine learning models for prediction of concrete strengths. Construction and Building Materials, 2021, 266, 120950.	7.2	196
76	Seismic Ground Response Analysis Based on Multilayer Perceptron and Convolution Neural Networks. Korean Society of Hazard Mitigation, 2021, 21, 231-238.	0.2	1
77	Seismic Ground Response Prediction Based on Multilayer Perceptron. Applied Sciences (Switzerland), 2021, 11, 2088.	2.5	5
78	Neural Networksâ€”Deflection Prediction of Continuous Beams with GFRP Reinforcement. Applied Sciences (Switzerland), 2021, 11, 3429.	2.5	2
79	Hybrid deep learning architecture for rail surface segmentation and surface defect detection. Computer-Aided Civil and Infrastructure Engineering, 2022, 37, 227-244.	9.8	62
80	Crossâ€“scene pavement distress detection by a novel transfer learning framework. Computer-Aided Civil and Infrastructure Engineering, 2021, 36, 1398-1415.	9.8	73
81	Improvement in Estimating Durations for Building Projects Using Artificial Neural Network and Sensitivity Analysis. Journal of Construction Engineering and Management - ASCE, 2021, 147, .	3.8	11
82	A New Formulation to Estimate the Elastic Modulus of Recycled Concrete Based on Regression and ANN. Sustainability, 2021, 13, 8561.	3.2	9
83	Machine learning and structural health monitoring overview with emerging technology and high-dimensional data source highlights. Structural Health Monitoring, 2022, 21, 1906-1955.	7.5	142
84	Progress in Artificial Intelligence-based Prediction of Concrete Performance. Journal of Advanced Concrete Technology, 2021, 19, 924-936.	1.8	13
85	Prediction of seismic drift responses of planar steel moment frames using artificial neural network and extreme gradient boosting. Engineering Structures, 2021, 242, 112518.	5.3	30
86	Using committees of artificial neural networks with finite element modeling for steel girder bridge load rating estimation. Structures, 2021, 33, 533-553.	3.6	15
87	Artificial Intelligence Applied in the Concrete Durability Study. Building Pathology and Rehabilitation, 2021, , 99-121.	0.2	2
88	Four Decades of Computing in Civil Engineering. Lecture Notes in Civil Engineering, 2020, , 3-11.	0.4	16
90	Neural Network, Machine Learning, and Evolutionary Approaches for Concrete Material Characterization. ACI Materials Journal, 2016, 113, .	0.2	42
91	Collapse of I-section tapered beam-columns in medium-span steel frames: Finite element model validation and parameters influence evaluation. Latin American Journal of Solids and Structures, 2020, 17, .	1.0	1

#	ARTICLE	IF	CITATIONS
92	Application of ANN in Pavement Engineering: State-of-Art. SSRN Electronic Journal, 0, , .	0.4	9
94	A Neural Network Based Approach for Reliability Analysis of UAV Flapping Wing. , 2021, , .		0
95	AvaliaÃ§Ã£o da influÃªncia das tensÃµes de barra na previsÃ£o de cargas via redes neurais. Research, Society and Development, 2021, 10, e600101220917.	0.1	0
96	Damage detection of nonlinear structures using probability density ratio estimation. Computer-Aided Civil and Infrastructure Engineering, 2022, 37, 878-893.	9.8	9
97	Approach of artificial intelligence for analysing properties of concrete. Materials Today: Proceedings, 2022, 48, 1713-1717.	1.8	2
100	Reliable Neural Networks for Proportioning of Concrete Mixes Containing Cement Replacement Materials. Advances in Civil Engineering Materials, 2018, 7, 633-650.	0.6	1
101	A deterministic algorithm for nonlinear, fatigue-based structural health monitoring. Computer-Aided Civil and Infrastructure Engineering, 2022, 37, 809-831.	9.8	22
102	Radically Simplifying Game Engines: AI Emotions & Game Self-Evolution. , 2020, , .		1
103	Fatigue of steel specimens at low temperatures. GraÄevinski Materijali I Konstrukcije, 2020, 63, 3-11.	0.4	0
104	Seismic Ground Response Estimation Based on Convolutional Neural Networks (CNN). Applied Sciences (Switzerland), 2021, 11, 10760.	2.5	3
105	A novel GPR-based prediction model for cyclic backbone curves of reinforced concrete shear walls. Engineering Structures, 2022, 255, 113874.	5.3	7
106	Predicting the Pore-Pressure and Temperature of Fire-Loaded Concrete by a Hybrid Neural Network. International Journal of Computational Methods, 2022, 19, .	1.3	18
107	Applications of Machine Learning to Wind Engineering. Frontiers in Built Environment, 2022, 8, .	2.3	22
108	Moment and shear estimations in steel girder highway bridges using committees of artificial neural networks and finite element models. Innovative Infrastructure Solutions, 2022, 7, 1.	2.2	1
109	Machine learning for structural engineering: A state-of-the-art review. Structures, 2022, 38, 448-491.	3.6	173
110	Machine Learning Algorithms Used in PSE Environments: A Didactic Approach and Critical Perspective. Industrial & Engineering Chemistry Research, 2022, 61, 8932-8962.	3.7	12
111	Hybrid Analytic Hierarchy Process Artificial Neural Network Model for Predicting the Major Risks and Quality of Taiwanese Construction Projects. Applied Sciences (Switzerland), 2022, 12, 7790.	2.5	9
112	Development of FWD based hybrid back-analysis technique for railway track condition assessment. Transportation Geotechnics, 2023, 38, 100894.	4.5	4

#	ARTICLE	IF	CITATIONS
113	Review on the Developments of Structure, Construction Automation, and Monitoring of Intelligent Construction. Buildings, 2022, 12, 1890.	3.1	2
114	Artificial-Neural-Network-Based Surrogate Models for Structural Health Monitoring of Civil Structures: A Literature Review. Buildings, 2022, 12, 2067.	3.1	9
115	The application of deep learning in bridge health monitoring: a literature review. Advances in Bridge Engineering, 2022, 3, .	1.9	10
116	Selected AI optimization techniques and applications in geotechnical engineering. Cogent Engineering, 2023, 10, .	2.2	15
117	Probabilistic performance assessment of eccentric braced frames using artificial neural networks combined with correlation latin hypercube sampling. Structures, 2023, 48, 226-240.	3.6	8
118	Machine learning in coastal bridge hydrodynamics: A state-of-the-art review. Applied Ocean Research, 2023, 134, 103511.	4.1	8
119	Automatic pixel-level crack detection with multi-scale feature fusion for slab tracks. Computer-Aided Civil and Infrastructure Engineering, 2023, 38, 2648-2665.	9.8	17
120	Novel Physics-Informed Artificial Neural Network Architectures for System and Input Identification of Structural Dynamics PDEs. Buildings, 2023, 13, 650.	3.1	7
121	Estimator for generalization performance of machine learning model trained by biased data collected from multiple references. Computer-Aided Civil and Infrastructure Engineering, 2023, 38, 2145-2162.	9.8	2
122	Evaluation of compressive strength of the HPC produced with admixtures by a novel hybrid SVR model. Multiscale and Multidisciplinary Modeling, Experiments and Design, 2023, 6, 357-370.	2.1	3
123	A probabilistic deep reinforcement learning approach for optimal monitoring of a building adjacent to deep excavation. Computer-Aided Civil and Infrastructure Engineering, 2024, 39, 656-678.	9.8	3
124	Rotation Capacity Prediction of Open Web Steel Beams Using Artificial Neural Networks. International Journal of Steel Structures, 0, , .	1.3	0
125	Comparison of Multilayer Perceptron and Other Methods for Prediction of Sustainable Optimum Design of Reinforced Concrete Columns. Studies in Systems, Decision and Control, 2023, , 235-263.	1.0	0
126	Machine learning-based model for the ultimate strength of circular concrete-filled fiber-reinforced polymer-steel composite tube columns. Construction and Building Materials, 2023, 394, 132134.	7.2	6
127	A deep natural language processing-based method for ontology learning of project-specific properties from building information models. Computer-Aided Civil and Infrastructure Engineering, 2024, 39, 20-45.	9.8	1
128	Finite element method-enhanced neural network for forward and inverse problems. Advanced Modeling and Simulation in Engineering Sciences, 2023, 10, .	1.7	3
129	Critical review on the application of artificial intelligence techniques in the production of geopolymer-concrete. SN Applied Sciences, 2023, 5, .	2.9	5
130	Predictive modelling and latent space exploration of steel profile overstrength factors using multi-head autoencoder regressors. Ce/Papers, 2023, 6, 836-842.	0.3	0



#	ARTICLE	IF	CITATIONS
131	End-to-end generation of structural topology for complex architectural layouts with graph neural networks. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2024, 39, 756-775.	9.8	1
132	Using machine learning to predict the long-term performance of fibre-reinforced polymer structures: A state-of-the-art review. <i>Construction and Building Materials</i> , 2023, 408, 133692.	7.2	2
133	Fine-grained crack segmentation for high-resolution images via a multiscale cascaded network. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2024, 39, 575-594.	9.8	0
134	Dynamic urban traffic rerouting with fog-cloud reinforcement learning. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2024, 39, 793-813.	9.8	2
135	Fundamental period estimation of RC buildings by considering structural and non-structural damage distributions through neural network. <i>Neural Computing and Applications</i> , 0, , .	5.6	0
136	A new epileptic seizure prediction model based on maximal overlap discrete wavelet packet transform, homogeneity index, and machine learning using ECG signals. <i>Biomedical Signal Processing and Control</i> , 2024, 88, 105659.	5.7	1
137	Development of Design Processes for Multi-Spindle Drilling using the Neural Network and Expert System. , 2023, , 30-46.		0
138	Tree-based machine learning approach to modelling tensile strength retention of Fibre Reinforced Polymer composites exposed to elevated temperatures. <i>Composites Part B: Engineering</i> , 2024, 270, 111132.	12.0	5
139	Enhancing seismic vulnerability assessment: a neural network effort for efficient prediction of multi-storey reinforced concrete building displacement. <i>Asian Journal of Civil Engineering</i> , 2024, 25, 2843-2865.	1.6	0
140	Heterogeneity-oriented ensemble learning for rail monitoring based on vehicle-body vibration. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 0, , .	9.8	0
141	Towards vibration-based damage detection of civil engineering structures: overview, challenges, and future prospects. <i>International Journal of Mechanics and Materials in Design</i> , 0, , .	3.0	0
142	Multi-view stereo for weakly textured indoor 3D reconstruction. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2024, 39, 1469-1489.	9.8	1
143	Prediction of the Bond Strength of Externally Bonded FRP Sheets Applied to Concrete via Grooves Technique Using Artificial Neural Networks. <i>Journal of Composites Science</i> , 2024, 8, 30.	3.0	1
144	Application of machine learning in cold-formed steel. , 2024, , 239-269.		0
145	Experimentally and numerically verified behaviour of splice joints under multiple loading conditions and their capacity predictions using artificial neural networks. <i>Structures</i> , 2024, 60, 105917.	3.6	0
146	Autoencoder-based method to assess bridge health monitoring data quality. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 0, , .	9.8	0