

Thomas Villmann

List of Publications by Year in descending order

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Version: 2024-02-01

98
papers

2,295
citations

279487

23
h-index

233125

45
g-index

111
all docs

111
docs citations

111
times ranked

1438
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 1 | Generalized relevance learning vector quantization. <i>Neural Networks</i> , 2002, 15, 1059-1068. | 3.3 | 329 |
| 2 | Neural maps in remote sensing image analysis. <i>Neural Networks</i> , 2003, 16, 389-403. | 3.3 | 138 |
| 3 | Serotonin and dopamine transporter imaging in patients with obsessive-compulsive disorder. <i>Psychiatry Research - Neuroimaging</i> , 2005, 140, 63-72. | 0.9 | 132 |
| 4 | Batch and median neural gas. <i>Neural Networks</i> , 2006, 19, 762-771. | 3.3 | 126 |
| 5 | Supervised Neural Gas with General Similarity Measure. <i>Neural Processing Letters</i> , 2005, 21, 21-44. | 2.0 | 117 |
| 6 | Prototype-based models in machine learning. <i>Wiley Interdisciplinary Reviews: Cognitive Science</i> , 2016, 7, 92-111. | 1.4 | 81 |
| 7 | Stochastic neighbor embedding (SNE) for dimension reduction and visualization using arbitrary divergences. <i>Neurocomputing</i> , 2012, 90, 23-45. | 3.5 | 79 |
| 8 | Limited Rank Matrix Learning, discriminative dimension reduction and visualization. <i>Neural Networks</i> , 2012, 26, 159-173. | 3.3 | 79 |
| 9 | Magnification Control in Self-Organizing Maps and Neural Gas. <i>Neural Computation</i> , 2006, 18, 446-469. | 1.3 | 74 |
| 10 | Divergence-Based Vector Quantization. <i>Neural Computation</i> , 2011, 23, 1343-1392. | 1.3 | 65 |
| 11 | Regularization in Matrix Relevance Learning. <i>IEEE Transactions on Neural Networks</i> , 2010, 21, 831-840. | 4.8 | 59 |
| 12 | Computational aspects of inverse analyses for determining softening curves of concrete. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2006, 195, 7223-7236. | 3.4 | 56 |
| 13 | On the Generalization Ability of GRLVQ Networks. <i>Neural Processing Letters</i> , 2005, 21, 109-120. | 2.0 | 54 |
| 14 | Can Learning Vector Quantization be an Alternative to SVM and Deep Learning? - Recent Trends and Advanced Variants of Learning Vector Quantization for Classification Learning. <i>Journal of Artificial Intelligence and Soft Computing Research</i> , 2017, 7, 65-81. | 3.5 | 46 |
| 15 | Explicit Magnification Control of Self-Organizing Maps for "Forbidden" Data. <i>IEEE Transactions on Neural Networks</i> , 2007, 18, 786-797. | 4.8 | 44 |
| 16 | Neighbor embedding XOM for dimension reduction and visualization. <i>Neurocomputing</i> , 2011, 74, 1340-1350. | 3.5 | 43 |
| 17 | Classification of mass-spectrometric data in clinical proteomics using learning vector quantization methods. <i>Briefings in Bioinformatics</i> , 2007, 9, 129-143. | 3.2 | 38 |
| 18 | Kernelized vector quantization in gradient-descent learning. <i>Neurocomputing</i> , 2015, 147, 83-95. | 3.5 | 32 |

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|----|--|-----|-----------|
| 19 | EFFICIENT KERNELIZED PROTOTYPE BASED CLASSIFICATION. International Journal of Neural Systems, 2011, 21, 443-457. | 3.2 | 31 |
| 20 | Median fuzzy c-means for clustering dissimilarity data. Neurocomputing, 2010, 73, 1109-1116. | 3.5 | 30 |
| 21 | Functional relevance learning in generalized learning vector quantization. Neurocomputing, 2012, 90, 85-95. | 3.5 | 30 |
| 22 | Investigation of psycho-physiological interactions between patient and therapist during a psychodynamic therapy and their relation to speech using in terms of entropy analysis using a neural network approach. New Ideas in Psychology, 2008, 26, 309-325. | 1.2 | 27 |
| 23 | Application of an interpretable classification model on Early Folding Residues during protein folding. BioData Mining, 2019, 12, 1. | 2.2 | 27 |
| 24 | Generalized relevance LVQ (GRLVQ) with correlation measures for gene expression analysis. Neurocomputing, 2006, 69, 651-659. | 3.5 | 23 |
| 25 | Instability and discontinuous change in the experience of therapeutic interaction: An extended single-case study of psychodynamic therapy processes. Psychotherapy Research, 2010, 20, 398-412. | 1.1 | 21 |
| 26 | Border-sensitive learning in generalized learning vector quantization: an alternative to support vector machines. Soft Computing, 2015, 19, 2423-2434. | 2.1 | 20 |
| 27 | Correlation between automated writing movements and striatal dopaminergic innervation in patients with Wilson's disease. Journal of Neurology, 2002, 249, 1082-1087. | 1.8 | 19 |
| 28 | Magnification control for batch neural gas. Neurocomputing, 2007, 70, 1225-1234. | 3.5 | 18 |
| 29 | Distance Measures for Prototype Based Classification. Lecture Notes in Computer Science, 2014, , 100-116. | 1.0 | 18 |
| 30 | Median variants of learning vector quantization for learning of dissimilarity data. Neurocomputing, 2015, 169, 295-305. | 3.5 | 17 |
| 31 | Cancer informatics by prototype networks in mass spectrometry. Artificial Intelligence in Medicine, 2009, 45, 215-228. | 3.8 | 16 |
| 32 | Types of (dis-)similarities and adaptive mixtures thereof for improved classification learning. Neurocomputing, 2017, 268, 42-54. | 3.5 | 16 |
| 33 | Genotype Correlation with Fine Motor Symptoms in Patients with Wilson's Disease. European Neurology, 2002, 48, 97-101. | 0.6 | 13 |
| 34 | Editorial A Successful Change From TNN to TNNLS and a Very Successful Year. IEEE Transactions on Neural Networks and Learning Systems, 2013, 24, 1-7. | 7.2 | 13 |
| 35 | Stationarity of Matrix Relevance LVQ. , 2015, , . | | 12 |
| 36 | Non-Euclidean principal component analysis by Hebbian learning. Neurocomputing, 2015, 147, 107-119. | 3.5 | 12 |

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|----|---|-----|-----------|
| 37 | Large margin linear discriminative visualization by Matrix Relevance Learning. , 2012, , . | | 11 |
| 38 | Variants of DropConnect in Learning vector quantization networks for evaluation of classification stability. Neurocomputing, 2020, 403, 121-132. | 3.5 | 11 |
| 39 | Clustering of Categorical Data in Medicine – Application of Evolutionary Algorithms. Lecture Notes in Computer Science, 2001, , 619-627. | 1.0 | 11 |
| 40 | Generative versus Discriminative Prototype Based Classification. Advances in Intelligent Systems and Computing, 2014, , 123-132. | 0.5 | 11 |
| 41 | Regularization and improved interpretation of linear data mappings and adaptive distance measures. , 2013, , . | | 10 |
| 42 | Precision-Recall-Optimization in Learning Vector Quantization Classifiers for Improved Medical Classification Systems. , 2014, , . | | 10 |
| 43 | Adaptive tangent distances in generalized learning vector quantization for transformation and distortion invariant classification learning. , 2016, , . | | 10 |
| 44 | Robustness of Generalized Learning Vector Quantization Models Against Adversarial Attacks. Advances in Intelligent Systems and Computing, 2020, , 189-199. | 0.5 | 10 |
| 45 | Quantum-inspired learning vector quantizers for prototype-based classification. Neural Computing and Applications, 2020, , 1. | 3.2 | 10 |
| 46 | Magnification control in winner relaxing neural gas. Neurocomputing, 2005, 63, 125-137. | 3.5 | 9 |
| 47 | Evolutionary algorithms using a neural network like migration scheme. Integrated Computer-Aided Engineering, 2002, 9, 25-35. | 2.5 | 8 |
| 48 | Evolutionary algorithms with neighborhood cooperativeness according to neural maps. Neurocomputing, 2004, 57, 151-169. | 3.5 | 8 |
| 49 | Functional vector quantization by neural maps. , 2009, , . | | 8 |
| 50 | Differentiable Kernels in Generalized Matrix Learning Vector Quantization. , 2012, , . | | 8 |
| 51 | Learning vector quantization classifiers for ROC-optimization. Computational Statistics, 2018, 33, 1173-1194. | 0.8 | 8 |
| 52 | Rejection Strategies for Learning Vector Quantization – A Comparison of Probabilistic and Deterministic Approaches. Advances in Intelligent Systems and Computing, 2014, , 109-118. | 0.5 | 8 |
| 53 | Gradient Based Learning in Vector Quantization Using Differentiable Kernels. Advances in Intelligent Systems and Computing, 2013, , 193-204. | 0.5 | 8 |
| 54 | Atherosclerosis, myocardial infarction and primary hemostasis: Impact of platelets, von Willebrand factor and soluble glycoprotein VI. Thrombosis Research, 2019, 180, 98-104. | 0.8 | 7 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 55 | ToF/Radar early feature-based fusion system for human detection and tracking. , 2021, , . | | 7 |
| 56 | Probabilistic Learning Vector Quantization with Cross-Entropy for Probabilistic Class Assignments in Classification Learning. Lecture Notes in Computer Science, 2018, , 724-735. | 1.0 | 7 |
| 57 | Fuzzy classification using information theoretic learning vector quantization. Neurocomputing, 2008, 71, 3070-3076. | 3.5 | 6 |
| 58 | Evolving trees for the retrieval of mass spectrometry-based bacteria fingerprints. Knowledge and Information Systems, 2010, 25, 327-343. | 2.1 | 6 |
| 59 | Building the library of RNA 3D nucleotide conformations using the clustering approach. International Journal of Applied Mathematics and Computer Science, 2015, 25, 689-700. | 1.5 | 6 |
| 60 | Learning vector quantization as an interpretable classifier for the detection of SARS-CoV-2 types based on their RNA sequences. Neural Computing and Applications, 2022, 34, 67-78. | 3.2 | 6 |
| 61 | A Median Variant of Generalized Learning Vector Quantization. Lecture Notes in Computer Science, 2013, , 19-26. | 1.0 | 6 |
| 62 | The Coming of Age of Interpretable and Explainable Machine Learning Models. , 2021, , . | | 6 |
| 63 | Virxicon: a lexicon of viral sequences. Bioinformatics, 2021, 36, 5507-5513. | 1.8 | 6 |
| 64 | Supervised data analysis and reliability estimation with exemplary application for spectral data. Neurocomputing, 2009, 72, 3590-3601. | 3.5 | 5 |
| 65 | Clustering by Fuzzy Neural Gas and Evaluation of Fuzzy Clusters. Computational Intelligence and Neuroscience, 2013, 2013, 1-10. | 1.1 | 5 |
| 66 | ICMLA Face Recognition Challenge – Results of the Team Computational Intelligence Mittweida. , 2012, , . | | 4 |
| 67 | Learning Vector Quantization with Adaptive Cost-Based Outlier-Rejection. Lecture Notes in Computer Science, 2015, , 772-782. | 1.0 | 4 |
| 68 | AI-Based Multi Sensor Fusion for Smart Decision Making: A Bi-Functional System for Single Sensor Evaluation in a Classification Task. Sensors, 2021, 21, 4405. | 2.1 | 4 |
| 69 | Comparison of Cluster Algorithms for the Analysis of Text Data Using Kolmogorov Complexity. Lecture Notes in Computer Science, 2009, , 61-69. | 1.0 | 4 |
| 70 | Fuzzy Neural Gas for Unsupervised Vector Quantization. Lecture Notes in Computer Science, 2012, , 350-358. | 1.0 | 4 |
| 71 | Divergence based vector quantization of spectral data. , 2010, , . | | 3 |
| 72 | Lateral enhancement in adaptive metric learning for functional data. Neurocomputing, 2014, 131, 23-31. | 3.5 | 3 |

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|----|---|-----|-----------|
| 73 | Similarities, Dissimilarities and Types of Inner Products for Data Analysis in the Context of Machine Learning. Lecture Notes in Computer Science, 2016, , 125-133. | 1.0 | 3 |
| 74 | Possibilistic Classification Learning Based on Contrastive Loss in Learning Vector Quantizer Networks. Lecture Notes in Computer Science, 2021, , 156-167. | 1.0 | 3 |
| 75 | The Resolved Mutual Information Function as a Structural Fingerprint of Biomolecular Sequences for Interpretable Machine Learning Classifiers. Entropy, 2021, 23, 1357. | 1.1 | 3 |
| 76 | Visualization of processes in self-learning systems. , 2012, , . | | 2 |
| 77 | Transfer learning in classification based on manifold models and its relation to tangent metric learning. , 2017, , . | | 2 |
| 78 | Partial Mutual Information for Classification of Gene Expression Data by Learning Vector Quantization. Advances in Intelligent Systems and Computing, 2014, , 259-269. | 0.5 | 2 |
| 79 | Multi-class and Cluster Evaluation Measures Based on Rényi and Tsallis Entropies and Mutual Information. Lecture Notes in Computer Science, 2018, , 736-749. | 1.0 | 2 |
| 80 | The symmetries of a nerve conduction equation. Applied Mathematics Letters, 1991, 4, 33-36. | 1.5 | 1 |
| 81 | Probabilistic Modeling in Machine Learning. , 2015, , 545-575. | | 1 |
| 82 | Prototype-based Models for the Supervised Learning of Classification Schemes. Proceedings of the International Astronomical Union, 2016, 12, 129-138. | 0.0 | 1 |
| 83 | Relational and median variants of Possibilistic Fuzzy C-Means. , 2017, , . | | 1 |
| 84 | Sensors data fusion for smart decisions making: A novel bi-functional system for the evaluation of sensors contribution in classification problems. , 2021, , . | | 1 |
| 85 | RFSOM " Extending Self-Organizing Feature Maps with Adaptive Metrics to Combine Spatial and Textural Features for Body Pose Estimation. Advances in Intelligent Systems and Computing, 2014, , 157-166. | 0.5 | 1 |
| 86 | Attention Based Classification Learning in GLVQ and Asymmetric Misclassification Assessment. Advances in Intelligent Systems and Computing, 2014, , 77-87. | 0.5 | 1 |
| 87 | Mathematical Characterization of Sophisticated Variants for Relevance Learning in Learning Matrix Quantization Based on Schatten-p-norms. Lecture Notes in Computer Science, 2015, , 403-414. | 1.0 | 1 |
| 88 | Divergence Based Online Learning in Vector Quantization. Lecture Notes in Computer Science, 2010, , 479-486. | 1.0 | 1 |
| 89 | Sparse Functional Relevance Learning in Generalized Learning Vector Quantization. Lecture Notes in Computer Science, 2011, , 79-89. | 1.0 | 1 |
| 90 | Quantum-Hybrid Neural Vector Quantization " A Mathematical Approach. Lecture Notes in Computer Science, 2021, , 246-257. | 1.0 | 1 |

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|----|---|-----|-----------|
| 91 | Sequence Learning in Unsupervised and Supervised Vector Quantization Using Hankel Matrices. Lecture Notes in Computer Science, 2017, , 131-142. | 1.0 | 1 |
| 92 | Fine motor skills disorders in the course of Wilson's disease. Annals of Indian Academy of Neurology, 2009, 12, 28-34. | 0.2 | 1 |
| 93 | A Learning Vector Quantization Architecture for Transfer Learning Based Classification in Case of Multiple Sources by Means of Null-Space Evaluation. Lecture Notes in Computer Science, 2022, , 354-364. | 1.0 | 1 |
| 94 | Tanimoto Metric in Tree-SOM for Improved Representation of Mass Spectrometry Data with an Underlying Taxonomic Structure. , 2009, , . | | 0 |
| 95 | Appropriate Data Density Models in Probabilistic Machine Learning Approaches for Data Analysis. Lecture Notes in Computer Science, 2019, , 443-454. | 1.0 | 0 |
| 96 | Sophisticated LVQ Classification Models - Beyond Accuracy Optimization. Lecture Notes in Computer Science, 2016, , 116-130. | 1.0 | 0 |
| 97 | Searching for the Origins of Life “ Detecting RNA Life Signatures Using Learning Vector Quantization. Advances in Intelligent Systems and Computing, 2020, , 324-333. | 0.5 | 0 |
| 98 | Variants of Fuzzy Neural Gas. Advances in Intelligent Systems and Computing, 2020, , 261-270. | 0.5 | 0 |