# Twin Support Vector Machines for pattern classification

| # | Paper | IF | Citations |
|---|-------|----|-----------|
| 1078 | Application of smoothing technique on twin support vector machines. **2008**, 29, 1842-1848 | | 133 |
| 1077 | Fast regularized kernel function approximation. **2008**, | | 2 |
| 1076 | Efficient Speaker Recognition based on Multi-class Twin Support Vector Machines and GMMs. **2008**, | | 15 |
| 1075 | Function approximation based on Twin Support Vector Machines. **2008**, | | 1 |
| 1074 | High Efficient Intrusion Detection Methodology with Twin Support Vector Machines. **2008**, | | 5 |
| 1073 | Microcalcification Clusters Detection with Tensor Subspace Learning and Twin SVMs. **2008**, | | 1 |
| 1072 | Comparing performance of interval neutrosophic sets and neural networks with support vector machines for binary classification problems. **2008**, | | 1 |
| 1071 | Study to Multi-Twin Support Vector Machines and Its Applications in Speaker Recognition. **2009**, | | 3 |
| 1070 | MCs detection approach using Bagging and Boosting based twin support vector machine. **2009**, | | 6 |
| 1069 | A New SVM Merged into Data Information. **2009**, | | |
| 1068 | Boosting Twin Support Vector Machine Approach for MCs Detection. **2009**, | | 8 |
| 1067 | Mass Detection in Digital Mammograms Using Twin Support Vector Machine-Based CAD System. **2009**, | | 4 |
| 1066 | Least squares twin support vector machines for pattern classification. **2009**, 36, 7535-7543 | | 392 |
| 1065 | TWin support tensor machines for MCs detection. **2009**, 26, 318-325 | | 18 |
| 1064 | Optimal kernel selection in twin support vector machines. **2009**, 3, 77-88 | | 85 |
| 1063 | Nonparallel plane proximal classifier. **2009**, 89, 510-522 | | 98 |
| 1062 | A New Approach for Clustered Microcalcifications Detection. **2009**, | | 1 |

1061   Fast support vector machines for continuous data. **2009**, 39, 989-1001    15

1060   Study to Speech Emotion Recognition Based on TWINsSVM. **2009**,    7

1059   Least squares twin support vector hypersphere (LS-TSVH) for pattern recognition. **2010**, 37, 8371-8378    19

1058   Knowledge based Least Squares Twin support vector machines. **2010**, 180, 4606-4618    40

1057   Sequence-based protein-protein interaction prediction via support vector machine. **2010**, 23, 1012-1023    6

1056   A probability approach to anomaly detection with twin support vector machines. **2010**, 15, 385-391    9

1055   Twin SVM for gesture classification using the surface electromyogram. **2010**, 14, 301-8    95

1054   Kernel subclass convex hull sample selection method for SVM on face recognition. **2010**, 73, 2234-2246    32

1053   Primal twin support vector regression and its sparse approximation. **2010**, 73, 2846-2858    53

1052   Newton's method for nonparallel plane proximal classifier with unity norm hyperplanes. **2010**, 90, 93-104    25

1051   TSVR: an efficient Twin Support Vector Machine for regression. **2010**, 23, 365-72    290

1050   Rule extraction from support vector machines: A review. **2010**, 74, 178-190    134

1049   A fast method to approximately train hard support vector regression. **2010**, 23, 1276-85    5

1048   A twin support vector machine (TSVM) classifier and its geometric algorithms. **2010**, 180, 3863-3875    101

1047   Weighted least squares twin support vector machines for pattern classification. **2010**,    5

1046   Hybrid independent component analysis and twin support vector machine learning scheme for subtle gesture recognition. **2010**, 55, 301-7    11

1045   Robust and Sparse Twin Support Vector Regression via Linear Programming. **2010**,    3

1044   Localized Multi-plane TWSVM Classifier via Manifold Regularization. **2010**,    5

| 1043 | Application of Lagrangian Twin Support Vector Machines for Classification. **2010**, | 5 |
| 1042 | . **2010**, | 3 |
| 1041 | A machine learning based method for classification of fractal features of forearm sEMG using Twin Support vector machines. **2010**, 2010, 4821-4 | 15 |
| 1040 | An approach of Support Vector Machine to improve the training speed. **2010**, | |
| 1039 | Multi-class LSTSVM classifier based on optimal directed acyclic graph. **2010**, | 2 |
| 1038 | Non-parallel planes support vector machine for multi-class classification. **2010**, | 3 |
| 1037 | Pattern Recognition. **2010**, 306-352 | 5 |
| 1036 | Unity norm twin support vector machine classifier. **2010**, | 6 |
| 1035 | Hierarchical Least Square Twin Support Vector Machines Based Framework for Human Action Recognition. **2011**, | 3 |
| 1034 | A linear programming model for identifying non-redundant biomarkers based on gene expression profiles. **2011**, | |
| 1033 | Multiconlitron: a general piecewise linear classifier. **2011**, 22, 276-89 | 24 |
| 1032 | Introduction to soft computing techniques: artificial neural networks, fuzzy logic and genetic algorithms. **2011**, 3-24 | 7 |
| 1031 | Multiclass motion identification using myoelectric signals and Support Vector machines. **2011**, | 1 |
| 1030 | Twin Gaussian Processes for Binary Classification. **2011**, | 3 |
| 1029 | Action Recognition by Local Space-Time Features and Least Square Twin SVM (LS-TSVM). **2011**, | 3 |
| 1028 | Improvements on twin support vector machines. **2011**, 22, 962-8 | 357 |
| 1027 | Cancer classification from gene expression data by NPPC ensemble. **2011**, 8, 659-71 | 57 |
| 1026 | A new efficient SVM and its application to real-time accurate eye localization. **2011**, | 3 |

1025  Advances in Neural Networks ISNN 2011. **2011**,                                                                    0

1024  Localized twin SVM via convex minimization. **2011**, 74, 580-587                                                   35

1023  1-Norm least squares twin support vector machines. **2011**, 74, 3590-3597                                          48

1022  Fault diagnosis of car assembly line based on fuzzy wavelet kernel support vector classifier
      machine and modified genetic algorithm. **2011**, 38, 9096-9104                                                    11

1021  TPMSVM: A novel twin parametric-margin support vector machine for pattern recognition. **2011**,
      44, 2678-2692                                                                                                      152

1020  Support vector machine prediction of enzyme function with conjoint triad feature and hierarchical
      context. **2011**, 5 Suppl 1, S6                                                                                    26

1019  Generalized eigenvalue proximal support vector regressor. **2011**, 38, 13136-13142                                12

1018  Building sparse twin support vector machine classifiers in primal space. **2011**, 181, 3967-3980                  46

1017  Distance difference and linear programming nonparallel plane classifier. **2011**, 38, 9425-9433                    8

1016  Recursive projection twin support vector machine via within-class variance minimization. **2011**, 44, 2643-2655  134

1015  Reduced twin support vector regression. **2011**, 74, 1474-1477                                                    32

1014  License Plate Location Algorithm Based on Twin SVM. **2011**, 271-273, 118-124                                      1

1013  L2-loss twin support vector machine for classification. **2012**,                                                   2

1012  Improved facial expression recognition via uni-hyperplane classification. **2012**,                                33

1011  Fault diagnosis based on signed directed graph and support vector machine. **2012**,                                0

1010  A rough margin-based twin support vector machine. **2012**, 21, 1307-1317                                          49

1009  Density-based weighting multi-surface least squares classification with its applications. **2012**, 33, 289-308     4

1008  Weighted twin support vector machines with local information and its application. **2012**, 35, 31-9               56

| 1007 | Laplacian twin support vector machine for semi-supervised classification. **2012**, 35, 46-53 | 148 |

| 1006 | Twin support vector machine with Universum data. **2012**, 36, 112-9 | 98 |

| 1005 | Discriminant Subspace Learning for Microcalcification Clusters Detection. **2012**, 24, 2237-2244 | 1 |

| 1004 | Multitask Twin Support Vector Machines. **2012**, 341-348 | 77 |

| 1003 | A feature selection method for nonparallel plane support vector machine classification. **2012**, 27, 431-443 | 10 |

| 1002 | An incremental learning algorithm for improved least squares twin support vector machine. **2012**, | |

| 1001 | Fast Localized Twin SVM. **2012**, | 1 |

| 1000 | Efficient Implementation of Nonparallel Hyperplanes Classifier. **2012**, | |

| 999 | RECENT ADVANCES ON SUPPORT VECTOR MACHINES RESEARCH. **2012**, 18, 5-33 | 90 |

| 998 | Twin support vector machines and subspace learning methods for microcalcification clusters detection. **2012**, 25, 1062-1072 | 20 |

| 997 | A weighted twin support vector regression. **2012**, 33, 92-101 | 77 |

| 996 | Probabilistic outputs for twin support vector machines. **2012**, 33, 145-151 | 33 |

| 995 | Least squares twin support vector machine classification via maximum one-class within class variance. **2012**, 27, 53-69 | 7 |

| 994 | Neural Information Processing. **2012**, | |

| 993 | Smooth twin support vector regression. **2012**, 21, 505-513 | 42 |

| 992 | Twin Mahalanobis distance-based support vector machines for pattern recognition. **2012**, 200, 22-37 | 40 |

| 991 | Efficient twin parametric insensitive support vector regression model. **2012**, 79, 26-38 | 46 |

| 990 | A coordinate descent margin based-twin support vector machine for classification. **2012**, 25, 114-21 | 79 |

| | | |
|---|---|---|
| 989 | Recursive Concave-Convex Fisher Linear Discriminant with applications to face, handwritten digit and terrain recognition. **2012**, 45, 54-65 | 19 |
| 988 | Least squares recursive projection twin support vector machine for classification. **2012**, 45, 2299-2307 | 100 |
| 987 | Noise tolerant local binary pattern operator for efficient texture analysis. **2012**, 33, 1093-1100 | 84 |
| 986 | Training twin support vector regression via linear programming. **2012**, 21, 399-407 | 32 |
| 985 | Towards identification of finger flexions using single channel surface electromyography--able bodied and amputee subjects. **2013**, 10, 50 | 15 |
| 984 | Proximal support tensor machines. **2013**, 4, 703-712 | 19 |
| 983 | A Twin Multi-Class Classification Support Vector Machine. **2013**, 5, 580-588 | 75 |
| 982 | An ε-twin support vector machine for regression. **2013**, 23, 175-185 | 85 |
| 981 | A novel margin-based twin support vector machine with unity norm hyperplanes. **2013**, 22, 1627-1635 | 20 |
| 980 | Robust minimum class variance twin support vector machine classifier. **2013**, 22, 999-1011 | 13 |
| 979 | Multiple birth support vector machine for multi-class classification. **2013**, 22, 153-161 | 49 |
| 978 | On Lagrangian twin support vector regression. **2013**, 22, 257-267 | 47 |
| 977 | A GA-based model selection for smooth twin parametric-margin support vector machine. **2013**, 46, 2267-2277 | 53 |
| 976 | Regularized least squares fisher linear discriminant with applications to image recognition. **2013**, 122, 521-534 | 12 |
| 975 | Feature Selection Based On Linear Twin Support Vector Machines. **2013**, 17, 1039-1046 | 19 |
| 974 | Progress in Artificial Intelligence. **2013**, | 1 |
| 973 | Norm-mixed twin support vector machine classifier and its geometric algorithm. **2013**, 99, 486-495 | 10 |
| 972 | Fuzzy regularized generalized eigenvalue classifier with a novel membership function. **2013**, 245, 53-62 | 3 |

| 971 | Nonparallel Support Vector Machines for Multiple-Instance Learning. **2013**, 17, 1063-1072 | | 5 |
|---|---|---|---|
| 970 | Least squares twin parametric-margin support vector machine for classification. **2013**, 39, 451-464 | | 33 |
| 969 | Primal least squares twin support vector regression. **2013**, 14, 722-732 | | 25 |
| 968 | Extending twin support vector machine classifier for multi-category classification problems. **2013**, 17, 649-664 | | 38 |
| 967 | Bi-density twin support vector machines for pattern recognition. **2013**, 99, 134-143 | | 18 |
| 966 | NONPARALLEL HYPERPLANES PROXIMAL CLASSIFIERS BASED ON MANIFOLD REGULARIZATION FOR LABELED AND UNLABELED EXAMPLES. **2013**, 27, 1350015 | | 5 |
| 965 | Improved Generalized Eigenvalue Proximal Support Vector Machine. **2013**, 20, 213-216 | | 58 |
| 964 | Improved twin support vector machine using total margin and graph embedding. **2013**, | | |
| 963 | Twin support vector regression for the simultaneous learning of a function and its derivatives. **2013**, 4, 51-63 | | 22 |
| 962 | Toward open set recognition. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **2013**, 35, 1757-72 | 13.3 | 381 |
| 961 | Local and Global Regularized Twin SVM. **2013**, 18, 1710-1719 | | 8 |
| 960 | A proximal classifier with consistency. **2013**, 49, 171-178 | | 18 |
| 959 | The Best Separating Decision Tree Twin Support Vector Machine for Multi-Class Classification. **2013**, 17, 1032-1038 | | 28 |
| 958 | Geometric algorithms for parametric-margin 峹support vector machine. **2013**, 99, 197-205 | | 3 |
| 957 | Structural twin support vector machine for classification. **2013**, 43, 74-81 | | 106 |
| 956 | An efficient classification approach for large-scale mobile ubiquitous computing. **2013**, 232, 419-436 | | 4 |
| 955 | Improving Lap-TSVM with Successive Overrelaxation and Differential Evolution. **2013**, 17, 33-40 | | 5 |
| 954 | Structural twin parametric-margin support vector machine for binary classification. **2013**, 49, 63-72 | | 26 |

935    Terrain classification based on variable-scale three-dimensional grid map. **2014**,    0

934    The Research of Fuzzy Weighted Twin Support Vector Regression in the MBR Simulation Prediction. **2014**, 556-562, 3648-3653    1

933    Tensor Distance Based Least Square Twin Support Tensor Machine. **2014**, 668-669, 1170-1173    1

932    Support Vector Machine and its Application Status. **2014**, 1030-1032, 1814-1817

931    New bilinear formulation to semi-supervised classification based on Kernel Spectral Clustering. **2014**,

930    A hybrid approach of PTSVM and ELM inspired by samples' geometric distribution structure. **2014**,

929    . **2014**,    5

928    2-Sided Best Fitting Hyperplane Classifier. **2014**,

927    Linear Programming v-Nonparallel Support Vector Machine. **2014**,    1

926    Recursive feature selection based on non-parallel SVMs and its application to hyperspectral image classification. **2014**,    0

925    Remote sensing image classification by non-parallel SVMs. **2014**,

924    KNN-based weighted rough twin support vector machine. **2014**, 71, 303-313    27

923    Support Vector Machines. **2014**, 469-524    4

922    Self-Universum support vector machine. **2014**, 18, 1813-1819    8

921    A Novel Twin Support Vector Machines with Manifold Regularization. **2014**, 644-650, 1640-1643

920    An efficient Parkinson disease diagnosis system based on Least Squares Twin Support Vector Machine and Particle Swarm Optimization. **2014**,    2

919    Deep Twin Support Vector Machine. **2014**,    2

918    Prediction of software defects using Twin Support Vector Machine. **2014**,    5

| | | |
|---|---|---|
| 899 | A novel feature selection method for twin support vector machine. **2014**, 59, 1-8 | 22 |
| 898 | Prediction of posttranslational modification sites from amino acid sequences with kernel methods. **2014**, 344, 78-87 | 35 |
| 897 | Improved twin support vector machine. **2014**, 57, 417-432 | 51 |
| 896 | Sparse least square twin support vector machine with adaptive norm. **2014**, 41, 1097-1107 | 14 |
| 895 | One-sided best fitting hyperplane classifier. **2014**, | |
| 894 | A clipping dual coordinate descent algorithm for solving support vector machines. **2014**, 71, 266-278 | 21 |
| 893 | Image denoising using nonsubsampled shearlet transform and twin support vector machines. **2014**, 57, 152-65 | 63 |
| 892 | Non-parallel support vector classifiers with different loss functions. **2014**, 143, 294-301 | 31 |
| 891 | Nonparallel support vector machines for pattern classification. **2014**, 44, 1067-79 | 161 |
| 890 | Intrusion detection model with twin support vector machines. **2014**, 19, 448-454 | 9 |
| 889 | Two ellipsoid Support Vector Machines. **2014**, 41, 8211-8224 | 16 |
| 888 | An overview on twin support vector machines. **2014**, 42, 245-252 | 61 |
| 887 | Nonparallel support vector machine for pattern classification. **2014**, 25, 1007-1020 | 16 |
| 886 | Wavelet twin support vector machine. **2014**, 25, 1241-1247 | 17 |
| 885 | Learning with positive and unlabeled examples using biased twin support vector machine. **2014**, 25, 1303-1311 | 15 |
| 884 | Consensus Proximal Support Vector Machine for Classification Problems with Sparse Solutions. **2014**, 2, 57-74 | 8 |
| 883 | Robust non-convex least squares loss function for regression with outliers. **2014**, 71, 290-302 | 41 |
| 882 | A three-domain fuzzy support vector regression for image denoising and experimental studies. **2014**, 44, 516-25 | 31 |

881    A twin projection support vector machine for data regression. **2014**, 138, 131-141    23

880    A nonparallel support vector machine for a classification problem with universum learning. **2014**, 263, 288-298    20

879    Twin Support Vector Machine in Linear Programs. **2014**, 29, 1770-1778    2

878    Laplacian least squares twin support vector machine for semi-supervised classification. **2014**, 145, 465-476    30

877    Feature selection for least squares projection twin support vector machine. **2014**, 144, 174-183    24

876    A multi-instance learning algorithm based on nonparallel classifier. **2014**, 241, 233-241    5

875    Energy-based model of least squares twin Support Vector Machines for human action recognition. **2014**, 104, 248-257    61

874    A proximal classifier with positive and negative local regions. **2014**, 145, 131-139    1

873    Nonparallel hyperplane support vector machine for binary classification problems. **2014**, 263, 22-35    98

872    Training sparse SVM on the core sets of fitting-planes. **2014**, 130, 20-27    9

871    Strip Steel Surface Defect Classification Method Based on Enhanced Twin Support Vector Machine. **2014**, 54, 119-124    20

870    Graph Embedded Total Margin Twin Support Vector Machine and Its Applications. **2014**, 385-405

869    Blind equalization of short burst signals based on twin support vector regressor and data-reusing method. **2014**,    1

868    A Fast Incremental Learning Algorithm Based on Twin Support Vector Machine. **2014**,    2

867    Adult image detection based on skin visual words and face information. **2015**,

866    A comprehensive analysis of twin support vector machines in remote sensing image classification. **2015**,    2

865    Least squares weighted twin support vector machines with local information. **2015**, 22, 2638-2645

864    Survey. **2015**, 1-40

| 863 | Nonparallel hyperplane classifiers for multi-category classification. **2015**, | 3 |

| 862 | Detection of Alzheimer's Disease by Three-Dimensional Displacement Field Estimation in Structural Magnetic Resonance Imaging. **2016**, 50, 233-48 | 58 |

| 861 | Magnetic resonance brain image classification based on weighted-type fractional Fourier transform and nonparallel support vector machine. **2015**, 25, 317-327 | 81 |

| 860 | Application of support vector based methods for cervical cancer cell classification. **2015**, | 5 |

| 859 | A Novel and Principled Multiclass Support Vector Machine. **2015**, 30, 1047-1082 | 3 |

| 858 | Least squares twin support vector machines for text categorization. **2015**, | |

| 857 | . **2015**, | 3 |

| 856 | Detection of Alzheimer's disease by displacement field and machine learning. **2015**, 3, e1251 | 57 |

| 855 | Pathological Brain Detection by a Novel Image Feature Fractional Fourier Entropy. **2015**, 17, 8278-8296 | 66 |

| 854 | Multiclass Posterior Probability Twin SVM for Motor Imagery EEG Classification. **2015**, 2015, 251945 | 12 |

| 853 | Hybrid Feature Selection Based Weighted Least Squares Twin Support Vector Machine Approach for Diagnosing Breast Cancer, Hepatitis, and Diabetes. **2015**, 2015, 1-10 | 31 |

| 852 | A Learning Framework of Nonparallel Hyperplanes Classifier. **2015**, 2015, 497617 | |

| 851 | Improve the diagnosis of atrial hypertrophy with the local discriminative support vector machine. **2015**, 26 Suppl 1, S1813-20 | 2 |

| 850 | Invariant Feature Extraction Method Based on Smoothed Local Binary Pattern for Strip Steel Surface Defect. **2015**, 55, 1956-1962 | 17 |

| 849 | Application of smoothing techniques for linear programming twin support vector machines. **2015**, 45, 191-214 | 33 |

| 848 | Projection twin SMMs for 2d image data classification. **2015**, 26, 91-100 | 4 |

| 847 | Semi-supervised intrusion detection via online laplacian twin support vector machine. **2015**, | 3 |

| 846 | Confidence Preserving Machine for Facial Action Unit Detection. **2015**, | 34 |

| | | |
|---|---|---|
| 845 | Alternating Direction Method of Multipliers for Nonparallel Support Vector Machines. **2015,** | 1 |
| 844 | Coordinate Descent Fuzzy Twin Support Vector Machine for Classification. **2015,** | 10 |
| 843 | PAC-Bayes Analysis for Twin Support Vector Machines. **2015,** | 1 |
| 842 | Locality Sensitive Proximal Classifier with Consistency for Small Sample Size Problem. **2015,** | 0 |
| 841 | Threshold optimization of pseudo-inverse linear discriminants based on overall accuracies. **2015,** | 2 |
| 840 | Binary classification with noise via fuzzy weighted least squares twin support vector machine. **2015,** | |
| 839 | Ramp loss nonparallel support vector machine for pattern classification. **2015,** 85, 224-233 | 32 |
| 838 | Pathological brain detection in MRI scanning by wavelet packet Tsallis entropy and fuzzy support vector machine. **2015,** 4, 716 | 48 |
| 837 | Support vector machine based estimation of remaining useful life: current research status and future trends. **2015,** 29, 151-163 | 69 |
| 836 | Twin support vector machine for clustering. **2015,** 26, 2583-8 | 64 |
| 835 | Kernel association for classification and prediction: a survey. **2015,** 26, 208-23 | 27 |
| 834 | A comparison on multi-class classification methods based on least squares twin support vector machine. **2015,** 81, 131-147 | 91 |
| 833 | High performance EEG signal classification using classifiability and the Twin SVM. **2015,** 30, 305-318 | 49 |
| 832 | Twin support vector machine in linear programs. **2015,** 10, 270-277 | 1 |
| 831 | Nonparallel Hyperplanes Support Vector Machine for Multi-class Classification. **2015,** 51, 1574-1582 | 5 |
| 830 | An effective Weighted Multi-class Least Squares Twin Support Vector Machine for Imbalanced data classification. **2015,** 8, 761-778 | 15 |
| 829 | An Ensemble Cost-Sensitive One-Class Learning Framework for Malware Detection. **2015,** 29, 1550018 | 3 |
| 828 | Color image classification and retrieval through ternary decision structure based multi-category TWSVM. **2015,** 165, 444-455 | 18 |

| 827 | Weighted least squares projection twin support vector machines with local information. **2015**, 160, 228-237 | 26 |

| 826 | Twin Support Vector Machine: A review from 2007 to 2014. **2015**, 16, 55-69 | 56 |

| 825 | Twin Support Vector Machine based Regression. **2015**, | 1 |

| 824 | Combined outputs framework for twin support vector machines. **2015**, 43, 424-438 | 2 |

| 823 | Quadratic kernel-free least squares support vector machine for target diseases classification. **2015**, 30, 850-870 | 25 |

| 822 | TBSTM: A Novel and Fast Nonlinear Classification Method for Image Data. **2015**, 29, 1551012 | 1 |

| 821 | Nonparallel Support Vector Machine Based on One Optimization Problem for Pattern Recognition. **2015**, 3, 499-519 | 10 |

| 820 | K-nearest neighbor based structural twin support vector machine. **2015**, 88, 34-44 | 43 |

| 819 | Two Efficient Twin ELM Methods With Prediction Interval. **2015**, 26, 2058-71 | 13 |

| 818 | Newton method for implicit Lagrangian twin support vector machines. **2015**, 6, 1029-1040 | 23 |

| 817 | Direct acyclic graph based multi-class twin support vector machine for pattern classification. **2015**, | 1 |

| 816 | Improvements on twin parametric-margin support vector machine. **2015**, 151, 857-863 | 14 |

| 815 | Weighted linear loss twin support vector machine for large-scale classification. **2015**, 73, 276-288 | 57 |

| 814 | Multitask centroid twin support vector machines. **2015**, 149, 1085-1091 | 30 |

| 813 | Structural least square twin support vector machine for classification. **2015**, 42, 527-536 | 18 |

| 812 | Robust and Sparse Linear Programming Twin Support Vector Machines. **2015**, 7, 137-149 | 76 |

| 811 | Least squares twin multi-class classification support vector machine. **2015**, 48, 984-992 | 48 |

| 810 | Least squares support vector machine with parametric margin for binary classification1. **2016**, 30, 2897-2904 | 1 |

| 809 | Incremental Learning Algorithm of Least Square Twin KSVC. **2016**, 56, 01005 | |
|---|---|---|
| 808 | Prediction of Defective Software Modules Using Class Imbalance Learning. **2016**, 2016, 1-12 | 21 |
| 807 | Dual-Tree Complex Wavelet Transform and Twin Support Vector Machine for Pathological Brain Detection. **2016**, 6, 169 | 73 |
| 806 | Improved Twin Support Vector Machine and Its Application on Personalized Recommendation. **2016**, | |
| 805 | Morphological analysis of dendrites and spines by hybridization of ridge detection with twin support vector machine. **2016**, 4, e2207 | 18 |
| 804 | Two effective sample selection methods for support vector machine. **2016**, 30, 659-670 | 9 |
| 803 | Structural Nonparallel Support Vector Machine Based on LSH for Large-Scale Prediction. **2016**, | |
| 802 | Least squares twin SVM decision tree for multi-class classification. **2016**, | 1 |
| 801 | Improved sEMG signal classification using the Twin SVM. **2016**, | 7 |
| 800 | Simple nonparallel laplacian SVM for semi-supervised learning on binary classification problem. **2016**, 20, 1307-1328 | |
| 799 | Combining Re-Sampling with Twin Support Vector Machine for Imbalanced Data Classification. **2016**, | 7 |
| 798 | v-Structural Nonparallel Support Vector Machine for Pattern Classification. **2016**, | |
| 797 | A projection twin SVM-based active contour model for image segmentation. **2016**, | |
| 796 | TI-QSSVM: Two Independent Quarter Sphere Support Vector Machine for binary classification. **2016**, | |
| 795 | Robust least squares twin support vector machine for human activity recognition. **2016**, 47, 33-46 | 50 |
| 794 | Improvements on Twin Support Vector Machine. **2016**, 79, 97-107 | 25 |
| 793 | Robust energy-based least squares twin support vector machines. **2016**, 45, 174-186 | 65 |
| 792 | Structural nonparallel support vector machine for pattern recognition. **2016**, 60, 296-305 | 24 |

| 791 | An effective intrusion detection framework based on MCLP/SVM optimized by time-varying chaos particle swarm optimization. **2016**, 199, 90-102 | 126 |

| 790 | K-nearest neighbor-based weighted multi-class twin support vector machine. **2016**, 205, 430-438 | 30 |

| 789 | Projection support vector regression algorithms for data regression. **2016**, 112, 54-66 | 6 |

| 788 | Parameters Optimization for Nonparallel Support Vector Machine by Particle Swarm Optimization. **2016**, 91, 482-491 | 11 |

| 787 | Recursively global and local discriminant analysis for semi-supervised and unsupervised dimension reduction with image analysis. **2016**, 216, 672-683 | 3 |

| 786 | Confidence Preserving Machine for Facial Action Unit Detection. **2016**, 25, 4753-4767 | 11 |

| 785 | A Multilabel Approach Using Binary Relevance and One-versus-Rest Least Squares Twin Support Vector Machine for Scene Classification. **2016**, | 1 |

| 784 | Ramp Loss Linear Programming Nonparallel Support Vector Machine. **2016**, 80, 1745-1754 | 2 |

| 783 | Leaf Recognition for Plant Classification Using Direct Acyclic Graph Based Multi-Class Least Squares Twin Support Vector Machine. **2016**, 16, 1650012 | 7 |

| 782 | A novel method for classification of matrix data using Twin Multiple Rank SMMs. **2016**, 48, 546-562 | 13 |

| 781 | Improvement of mass detection in mammogram using multi-view information. **2016**, | 1 |

| 780 | Weighted multicategory nonparallel planes SVM classifiers. **2016**, 211, 106-116 | 5 |

| 779 | Nonparallel least square support vector machine for classification. **2016**, 45, 1119-1128 | 8 |

| 778 | Multi-metrics Classification Machine. **2016**, 91, 556-565 | |

| 777 | Twin pinball loss support vector hyper-sphere classifier for pattern recognition. **2016**, | 7 |

| 776 | 1-Norm Projection Twin Support Vector Machine. **2016**, 535-550 | 1 |

| 775 | Manifold Regularized Proximal Support Vector Machine via Generalized Eigenvalue. **2016**, 9, 1041-1054 | 7 |

| 774 | MIMLTWSVM: Twin support vector machine for multi-instance multi-label learning. **2016**, | |

| 773 | Pseudo-inverse linear discriminants for the improvement of overall classification accuracies. **2016**, 81, 59-71 | 4 |
| 772 | A second-order cone programming formulation for twin support vector machines. **2016**, 45, 265-276 | 19 |
| 771 | Multi-category laplacian least squares twin support vector machine. **2016**, 45, 458-474 | 11 |
| 770 | Locality preserving projection twin support vector machine and its application in classification. **2016**, 10, 65-72 | 2 |
| 769 | Linear programming nonparallel support vector machine and its application in vehicle recognition. **2016**, 215, 212-216 | 1 |
| 768 | A sparse method for least squares twin support vector regression. **2016**, 211, 150-158 | 8 |
| 767 | A new approach for training Lagrangian support vector regression. **2016**, 49, 1097-1129 | 5 |
| 766 | Modified twin support vector regression. **2016**, 211, 84-97 | 23 |
| 765 | Multiple recursive projection twin support vector machine for multi-class classification. **2016**, 7, 729-740 | 20 |
| 764 | On-line twin independent support vector machines. **2016**, 186, 8-21 | 9 |
| 763 | L 1 -norm loss based twin support vector machine for data recognition. **2016**, 340-341, 86-103 | 17 |
| 762 | An efficient implicit regularized Lagrangian twin support vector regression. **2016**, 44, 831-848 | 24 |
| 761 | MLTSVM: A novel twin support vector machine to multi-label learning. **2016**, 52, 61-74 | 76 |
| 760 | TWSVR: Regression via Twin Support Vector Machine. **2016**, 74, 14-21 | 48 |
| 759 | Twin Bounded Support Tensor Machine for Classification. **2016**, 30, 1650002 | 4 |
| 758 | An efficient regularized K-nearest neighbor based weighted twin support vector regression. **2016**, 94, 70-87 | 41 |
| 757 | A maximum margin and minimum volume hyper-spheres machine with pinball loss for imbalanced data classification. **2016**, 95, 75-85 | 46 |
| 756 | Comparison of chemometric approaches for near-infrared spectroscopic data. **2016**, 8, 1914-1923 | 21 |

755    A Novel Twin Support Vector Machine for Binary Classification Problems. **2016**, 44, 795-811    10

754    Weighted Lagrange εtwin support vector regression. **2016**, 197, 53-68    33

753    Least squares recursive projection twin support vector machine for multi-class classification. **2016**, 7, 411-426    42

752    A second-order cone programming formulation for nonparallel hyperplane support vector machine. **2016**, 54, 95-104    15

751    Twin support vector machines based on fruit fly optimization algorithm. **2016**, 7, 193-203    39

750    Multi-class LSTMSVM based on optimal directed acyclic graph and shuffled frog leaping algorithm. **2016**, 7, 241-251    22

749    Training primal twin support vector regression via unconstrained convex minimization. **2016**, 44, 931-955    13

748    εtwin support vector machine with Universum data for classification. **2016**, 44, 956-968    13

747    A new sense-through-foliage target recognition method based on hybrid particle swarm optimization-based wavelet twin support vector machine. **2016**, 80, 58-70    2

746    Least squares twin support vector machine with Universum data for classification. **2016**, 47, 3637-3645    20

745    Multi-label Lagrangian support vector machine with random block coordinate descent method. **2016**, 329, 184-205    7

744    Pixel classification based color image segmentation using quaternion exponent moments. **2016**, 74, 1-13    13

743    Multi-class Twin Support Vector Machine for Pattern Classification. **2016**, 97-110    2

742    Semisupervised Support Vector Machines With Tangent Space Intrinsic Manifold Regularization. **2016**, 27, 1827-39    13

741    Laplacian twin parametric-margin support vector machine for semi-supervised classification. **2016**, 171, 325-334    21

740    A novel parametric-insensitive nonparallel support vector machine for regression. **2016**, 171, 649-663    13

739    Robust L1-norm non-parallel proximal support vector machine. **2016**, 65, 169-183    32

738    A structural information-based twin-hypersphere support vector machine classifier. **2017**, 8, 295-308    10

| 737 | A regularization on Lagrangian twin support vector regression. **2017**, 8, 807-821 | | 23 |

| 736 | Pathological brain detection in MRI scanning via Hu moment invariants and machine learning. **2017**, 29, 299-312 | | 52 |

| 735 | A Novel Twin Support-Vector Machine With Pinball Loss. **2017**, 28, 359-370 | | 105 |

| 734 | Tree based multi-category Laplacian TWSVM for content based image retrieval. **2017**, 8, 1197-1210 | | 7 |

| 733 | Simulated annealing least squares twin support vector machine (SA-LSTSVM) for pattern classification. **2017**, 21, 4361-4373 | | 14 |

| 732 | Maximum Margin of Twin Spheres Support Vector Machine for Imbalanced Data Classification. **2017**, 47, 1540-1550 | | 44 |

| 731 | Online Learning Algorithms for Double-Weighted Least Squares Twin Bounded Support Vector Machines. **2017**, 45, 319-339 | | 6 |

| 730 | Twin support vector machine: theory, algorithm and applications. **2017**, 28, 3119-3130 | | 54 |

| 729 | Best Fitting Hyperplanes for Classification. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **2017**, 39, 1076-1088 | 13.3 | 30 |

| 728 | Learning with label proportions based on nonparallel support vector machines. **2017**, 119, 126-141 | | 13 |

| 727 | PAC-Bayes bounds for twin support vector machines. **2017**, 234, 137-143 | | 6 |

| 726 | Semi-automated detection of anterior cruciate ligament injury from MRI. **2017**, 140, 151-164 | | 32 |

| 725 | Robust kernel-based multiclass support vector machines via second-order cone programming. **2017**, 46, 983-992 | | 9 |

| 724 | Group-penalized feature selection and robust twin SVM classification via second-order cone programming. **2017**, 235, 112-121 | | 9 |

| 723 | Characterization of moisture content in dehydrated scallops using spectral images. **2017**, 205, 47-55 | | 18 |

| 722 | Divide and conquer approach for semi-supervised multi-category classification through localized kernel spectral clustering. **2017**, 238, 296-306 | | 1 |

| 721 | Weighted linear loss multiple birth support vector machine based on information granulation for multi-class classification. **2017**, 67, 32-46 | | 56 |

| 720 | Tree-based localized fuzzy twin support vector clustering with square loss function. **2017**, 47, 96-113 | | 14 |

| 719 | SOM-based nonlinear least squares twin SVM via active contours for noisy image segmentation. **2017**, | |
| 718 | Training primal K-nearest neighbor based weighted twin support vector regression via unconstrained convex minimization. **2017**, 47, 962-991 | 25 |
| 717 | A robust formulation for twin multiclass support vector machine. **2017**, 47, 1031-1043 | 6 |
| 716 | Twin extreme learning machines for pattern classification. **2017**, 260, 235-244 | 25 |
| 715 | SVM-based multi-state-mapping approach for multi-class classification. **2017**, 129, 79-96 | 22 |
| 714 | An improved rough margin-based ltwin bounded support vector machine. **2017**, 128, 125-138 | 10 |
| 713 | A multi-kernel framework with nonparallel support vector machine. **2017**, 266, 226-238 | 21 |
| 712 | Robust recursive absolute value inequalities discriminant analysis with sparseness. **2017**, 93, 205-218 | 10 |
| 711 | Proximal maximum margin matrix factorization for collaborative filtering. **2017**, 86, 62-67 | 18 |
| 710 | Pairing support vector algorithm for data regression. **2017**, 225, 174-187 | 8 |
| 709 | Finding the samples near the decision plane for support vector learning. **2017**, 382-383, 292-307 | 16 |
| 708 | Biogeography based hybrid scheme for automatic detection of epileptic seizures from EEG signatures. **2017**, 51, 116-129 | 12 |
| 707 | Nearest neighbors distance ratio open-set classifier. **2017**, 106, 359-386 | 61 |
| 706 | Recognition of motor imagery tasks for BCI using CSP and chaotic PSO twin SVM. **2017**, 24, 83-90 | 9 |
| 705 | -norm Twin Support Vector Machine-based Regression. **2017**, 66, 1895-1911 | 6 |
| 704 | A twin-hyperspheres support vector machine with automatic variable weights for data classification. **2017**, 417, 216-235 | 8 |
| 703 | A GPU-Architecture Optimized Hierarchical Decomposition Algorithm for Support Vector Machine Training. **2017**, 28, 3330-3343 | 9 |
| 702 | Regularization feature selection projection twin support vector machine via exterior penalty. **2017**, 28, 683-697 | 6 |

683    Pair- ${v}$ -SVR: A Novel and Efficient Pairing nu-Support Vector Regression Algorithm. **2017**, 28, 2503-2515    12

682    A new approach for training Lagrangian twin support vector machine via unconstrained convex minimization. **2017**, 46, 124-134    15

681    Twin Support Vector Machines. **2017**,    8

680    Multiple birth least squares support vector machine for multi-class classification. **2017**, 8, 1731-1742    20

679    Wavelet twin support vector machines based on glowworm swarm optimization. **2017**, 225, 157-163    42

678    Between-class discriminant twin support vector machine for imbalanced data classification. **2017**,    1

677    New computer aided diagnosis system for glaucoma disease based on twin support vector machine. **2017**,    3

676    BOF steelmaking endpoint prediction based on FWA-TSVR. **2017**,    4

675    L2P-Norm Distance Twin Support Vector Machine. **2017**, 5, 23473-23483    9

674    Twin support vector regression with Huber loss. **2017**, 32, 4247-4258    12

673    Application of machine learning on brain cancer multiclass classification. **2017**,    16

672    Bounded locality preserving distance based generalized eigenvalue proximal support vector machine. **2017**,   

671    Polyhedral Conic Classifiers for Visual Object Detection and Classification. **2017**,    7

670    Weighted Least Squares Twin Large Margin Distribution Machine. **2017**,    1

669    Fault prediction for the actuators of civil aircraft based on an improved TSVR algorithm. **2017**,   

668    A fuzzy based Lagrangian twin parametric-margin support vector machine (FLTPMSVM). **2017**,    13

667    Efficient and Robust TWSVM Classifier Based on L1-Norm Distance Metric for Pattern Classification. **2017**,   

666    P-Order L2-Norm Distance Twin Support Vector Machine. **2017**,    0

| | | | |
|---|---|---|---|
| 665 | Fuzzy chance constrained least squares twin support vector machine for uncertain classification1. **2017**, 33, 3041-3049 | | 7 |
| 664 | Twin SVM-Based Classification of Alzheimer's Disease Using Complex Dual-Tree Wavelet Principal Coefficients and LDA. **2017**, 2017, 8750506 | | 22 |
| 663 | An improved fuzzy twin support vector machine based on support vector. **2017**, | | |
| 662 | Fuzzy Support Vector Classification Machine Using Possibility Inequality Measures. **2017**, | | |
| 661 | An Updated Projection Twin Support Vector Machine for Classification. **2017**, 128, 02015 | | |
| 660 | Improving semi-supervised co-forest algorithm in evolving data streams. **2018**, 48, 3248-3262 | | 14 |
| 659 | Robust twin support vector regression via second-order cone programming. **2018**, 152, 83-93 | | 12 |
| 658 | EEG signal classification using universum support vector machine. **2018**, 106, 169-182 | | 132 |
| 657 | Ramp-loss nonparallel support vector regression: Robust, sparse and scalable approximation. **2018**, 147, 55-67 | | 17 |
| 656 | Alternating Relaxed Twin Bounded Support Vector Clustering. **2018**, 102, 1129-1147 | | |
| 655 | L1-Norm Distance Minimization-Based Fast Robust Twin Support Vector $k$ -Plane Clustering. **2018**, 29, 4494-4503 | | 44 |
| 654 | Linear Maximum Margin Classifier for Learning from Uncertain Data. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **2018**, 40, 2948-2962 | 13.3 | 18 |
| 653 | Application of soft computing techniques to multiphase flow measurement: A review. **2018**, 60, 30-43 | | 74 |
| 652 | Regularized multi-view least squares twin support vector machines. **2018**, 48, 3108-3115 | | 24 |
| 651 | 2D-LPCCA and 2D-SPCCA: Two new canonical correlation methods for feature extraction, fusion and recognition. **2018**, 284, 148-159 | | 8 |
| 650 | Improvements on twin-hypersphere support vector machine using local density information. **2018**, 7, 167-175 | | 4 |
| 649 | Matrix-pattern-oriented classifier with boundary projection discrimination. **2018**, 149, 1-17 | | 1 |
| 648 | Multi-view dimensionality reduction based on Universum learning. **2018**, 275, 2279-2286 | | 12 |

| 647 | Survey on SVM and their application in image classification. **2018**, 13, 1 | 36 |

| 646 | PTSVRs: Regression models via projection twin support vector machine. **2018**, 435, 1-14 | 21 |

| 645 | A Novel Least Square Twin Support Vector Regression. **2018**, 48, 1187-1200 | 3 |

| 644 | Domain Adaptation with Twin Support Vector Machines. **2018**, 48, 1213-1226 | 14 |

| 643 | A self-adaptive frequency selection common spatial pattern and least squares twin support vector machine for motor imagery electroencephalography recognition. **2018**, 41, 222-232 | 30 |

| 642 | . **2018**, 6, 20334-20347 | 11 |

| 641 | Multi-class classification method using twin support vector machines with multi-information for steel surface defects. **2018**, 176, 108-118 | 18 |

| 640 | . **2018**, 6, 17284-17291 | 4 |

| 639 | Twin support vector machines: A survey. **2018**, 300, 34-43 | 28 |

| 638 | Integration of incremental filter-wrapper selection strategy with artificial intelligence for enterprise risk management. **2018**, 9, 477-489 | 8 |

| 637 | On a new approach for Lagrangian support vector regression. **2018**, 29, 533-551 | 2 |

| 636 | Pedestrian detection based on the privileged information. **2018**, 29, 1485-1494 | 7 |

| 635 | Fuzzy least squares twin support vector clustering. **2018**, 29, 553-563 | 21 |

| 634 | Large-scale linear nonparallel SVMs. **2018**, 22, 1945-1957 | 3 |

| 633 | Safe Screening Rules for Accelerating Twin Support Vector Machine Classification. **2018**, 29, 1876-1887 | 40 |

| 632 | Extended Polynomial Growth Transforms for Design and Training of Generalized Support Vector Machines. **2018**, 29, 1961-1974 | 5 |

| 631 | A new fuzzy twin support vector machine for pattern classification. **2018**, 9, 1553-1564 | 29 |

| 630 | Asymmetric Łtwin support vector regression. **2018**, 30, 3799-3814 | 12 |

611    l1-norm Nonparallel Support Vector Machine for PU Learning. **2018**,

610    Plant Species Identification using Leaf Image Retrieval: A Study. **2018**,      4

609    Bearing Fault Diagnosis of Induction Motor Using Thermal Imaging. **2018**,      14

608    Kernel Target Alignment based Fuzzy Least Square Twin Bounded Support Vector Machine. **2018**,      7

607    Maximum Margin Minimum Variance Twin Support Vector Machine. **2018**,

606    Twin Support Vector Machine With Local Structural Information for Pattern Classification. **2018**, 6, 64237-64249      9

605    Classification of Schizophrenia Data Using Support Vector Machine (SVM). **2018**, 1108, 012044      6

604    Classification of seizure and seizure-free EEG signals using Hjorth parameters. **2018**,      6

603    Improved 2-norm Based Fuzzy Least Squares Twin Support Vector Machine. **2018**,      8

602    Research on Development and Application of Support Vector Machine - Transformer Fault Diagnosis. **2018**,      0

601    Improved universum twin support vector machine. **2018**,      13

600    Learning TWSVM using Privilege Information. **2018**,

599    A Novel Feature Weighted Twin-hypersphere Support Vector Machine for Pattern Recognition. **2018**,

598    A Method of Biomedical Information Classification Based on Particle Swarm Optimization with Inertia Weight and Mutation. **2018**, 13, 355-373      4

597    Improved Nonparallel Hyperplanes Support Vector Machines for Multi-class Classification. **2018**,      1

596    A twin support vector machine based approach to classifying human skin. **2018**,      2

595    End-point Prediction of BOF Steelmaking Based on Wavelet Transform Based Weighted TSVR. **2018**,      1

594    Efficient Vehicle Accident Detection System using Tensorflow and Transfer Learning. **2018**,

| | | |
|---|---|---|
| 593 | Research on Intelligent Engine Fault Detection Method Based on Machine Learning. **2018**, | |
| 592 | Using LASSO regression based SVM classification to improve the predictive performance of radiation-induced pneumonitis complication in breast cancer. **2018**, 41, 660-666 | 1 |
| 591 | A Learning Framework for Size and Type Independent Transient Stability Prediction of Power System Using Twin Convolutional Support Vector Machine. **2018**, 6, 69937-69947 | 39 |
| 590 | Large-Scale Linear NPSVM via One Permutation Hashing. **2018**, | |
| 589 | A Class of Fuzzy Smooth Piecewise Twin Support Vector Machine. **2018**, | |
| 588 | Multiple rank multi-linear twin support matrix classification machine1. **2018**, 35, 5741-5754 | 2 |
| 587 | Twin Bounded Large Margin Distribution Machine. **2018**, 718-729 | 1 |
| 586 | Wheat Ears Counting in Field Conditions Based on Multi-Feature Optimization and TWSVM. **2018**, 9, 1024 | 34 |
| 585 | KNN-based multi-label twin support vector machine with priority of labels. **2018**, 322, 177-186 | 9 |
| 584 | Sparse Least-Squares Support Vector Machines via Accelerated Segmented Test: A dual approach. **2018**, 321, 308-320 | 9 |
| 583 | Are twin hyperplanes necessary?. **2018**, 116, 218-224 | |
| 582 | Fast Adaptive Classifier based on a Stepwise algorithm. **2018**, | |
| 581 | Twin Neural Networks for Efficient EEG Signal Classification. **2018**, | 7 |
| 580 | A clustering-plane based energy optimization method for image segmentation. **2018**, | |
| 579 | A novel fuzzy linear discriminant analysis for face recognition. **2018**, 22, 675-696 | 2 |
| 578 | An intelligent vision-based approach for helmet identification for work safety. **2018**, 100, 267-277 | 34 |
| 577 | Applying norm concepts for solving interval support vector machine. **2018**, 311, 41-50 | 1 |
| 576 | Entropy based fuzzy least squares twin support vector machine for class imbalance learning. **2018**, 48, 4212-4231 | 30 |

| 575 | Multiclass Classification of Cardiac Arrhythmia Using Improved Feature Selection and SVM Invariants. **2018**, 2018, 7310496 | 34 |

| 574 | Mining EEG with SVM for Understanding Cognitive Underpinnings of Math Problem Solving Strategies. **2018**, 2018, 4638903 | 7 |

| 573 | Nonparallel support vector regression model and its SMO-type solver. **2018**, 105, 431-446 | 11 |

| 572 | Improvements on least squares twin multi-class classification support vector machine. **2018**, 313, 196-205 | 26 |

| 571 | A safe sample screening rule for Laplacian twin parametric-margin support vector machine. **2018**, 84, 1-12 | 14 |

| 570 | Multi-view learning based on nonparallel support vector machine. **2018**, 158, 94-108 | 23 |

| 569 | Robust L1-norm multi-weight vector projection support vector machine with efficient algorithm. **2018**, 315, 345-361 | 10 |

| 568 | Multiclass Motor Imagery Recognition of Single Joint in Upper Limb Based on NSGA- II OVO TWSVM. **2018**, 2018, 6265108 | 5 |

| 567 | Classification Methods for Pathological Brain Detection. **2018**, 119-147 | 1 |

| 566 | An improved twin support vector machine based on multi-objective cuckoo search for software defect prediction. **2018**, 11, 282 | 27 |

| 565 | KNN-based least squares twin support vector machine for pattern classification. **2018**, 48, 4551-4564 | 20 |

| 564 | A robust fuzzy least squares twin support vector machine for class imbalance learning. **2018**, 71, 418-432 | 38 |

| 563 | Scaling up twin support vector regression with safe screening rule. **2018**, 465, 174-190 | 9 |

| 562 | A novel projection nonparallel support vector machine for pattern classification. **2018**, 75, 64-75 | 10 |

| 561 | Laplacian twin extreme learning machine for semi-supervised classification. **2018**, 321, 17-27 | 19 |

| 560 | On robust twin support vector regression in primal using squared pinball loss. **2018**, 35, 5231-5239 | 7 |

| 559 | A twin-hyperellipsoidal support vector classifier. **2018**, 35, 6141-6152 | |

| 558 | Insensitive stochastic gradient twin support vector machines for large scale problems. **2018**, 462, 114-131 | 35 |

| | | |
|---|---|---|
| 539 | A robust geometric mean-based subspace discriminant analysis feature extraction approach for image set classification. **2019**, 199, 163368 | 6 |
| 538 | A Novel Synthetic CT Generation Method Using Multitask Maximum Entropy Clustering. **2019**, 7, 119644-119653 | 0 |
| 537 | Multi-View Learning With Robust Generalized Eigenvalue Proximal SVM. **2019**, 7, 102437-102454 | 4 |
| 536 | Sparse Twin Extreme Learning Machine With $varepsilon$ -Insensitive Zone Pinball Loss. **2019**, 7, 112067-112078 | 7 |
| 535 | Fuzzy and interval-valued fuzzy nonparallel support vector machine. **2019**, 36, 2677-2690 | 7 |
| 534 | Multiview Semi-supervised Learning. **2019**, 7-22 | |
| 533 | A Trace Lasso Regularized Robust Nonparallel Proximal Support Vector Machine for Noisy Classification. **2019**, 7, 47171-47184 | 5 |
| 532 | Optimal-Margin Evolutionary Classifier. **2019**, 23, 885-898 | 2 |
| 531 | Intuitionistic Fuzzy Twin Support Vector Machines. **2019**, 27, 2140-2151 | 43 |
| 530 | Detecting facial emotions using normalized minimal feature vectors and semi-supervised twin support vector machines classifier. **2019**, 49, 4150-4174 | 14 |
| 529 | Weighted Linear Loss Projection Twin Support Vector Machine for Pattern Classification. **2019**, 7, 57349-57360 | 3 |
| 528 | Robust Rescaled Hinge Loss Twin Support Vector Machine for Imbalanced Noisy Classification. **2019**, 7, 65390-65404 | 10 |
| 527 | Multiclass Twin Support Vector Machine for plant species identification. **2019**, 78, 27785-27808 | 5 |
| 526 | An efficient regularized K-nearest neighbor structural twin support vector machine. **2019**, 49, 4258-4275 | 8 |
| 525 | Quadratic Kernel-Free Least Square Twin Support Vector Machine for Binary Classification Problems. **2019**, 7, 539-559 | 6 |
| 524 | Multi-parameter safe sample elimination rule for accelerating nonlinear multi-class support vector machines. **2019**, 95, 1-11 | 9 |
| 523 | Epsilon-nonparallel support vector regression. **2019**, 49, 4223-4236 | 7 |
| 522 | Image tampering detection using genetic algorithm. **2019**, 277, 02026 | 0 |

| 521 | Unconstrained convex minimization based implicit Lagrangian twin random vector Functional-link networks for binary classification (ULTRVFLC). **2019**, 81, 105534 | 7 |
|---|---|---|
| 520 | Accelerating improved twin support vector machine with safe screening rule. **2019**, 10, 3587-3600 | 5 |
| 519 | L1-norm loss-based projection twin support vector machine for binary classification. **2019**, 23, 10649-10659 | 7 |
| 518 | An improved regularization based Lagrangian asymmetric Etwin support vector regression using pinball loss function. **2019**, 49, 3606-3627 | 11 |
| 517 | A Transformer Fault Diagnosis Model Based on Chemical Reaction Optimization and Twin Support Vector Machine. **2019**, 12, 960 | 16 |
| 516 | General twin support vector machine with pinball loss function. **2019**, 494, 311-327 | 50 |
| 515 | Regularized minimax probability machine. **2019**, 177, 127-135 | 5 |
| 514 | Probabilistic load curtailment estimation using posterior probability model and twin support vector machine. **2019**, 7, 665-675 | 2 |
| 513 | A novel least squares twin parametric insensitive support vector regression. **2019**, 2, 51 | |
| 512 | Discriminative information-based nonparallel support vector machine. **2019**, 162, 169-179 | 7 |
| 511 | A multi-class classifier based on support vector hyper-spheres for steel plate surface defects. **2019**, 188, 70-78 | 13 |
| 510 | Financial time series forecasting using twin support vector regression. **2019**, 14, e0211402 | 22 |
| 509 | Sparse pinball twin support vector machines. **2019**, 78, 164-175 | 44 |
| 508 | A regression-type support vector machine for k-class problem. **2019**, 340, 1-7 | 3 |
| 507 | TS-WRSVM: twin structural weighted relaxed support vector machine. **2019**, 31, 215-243 | 4 |
| 506 | Support vector machine with quantile hyper-spheres for pattern classification. **2019**, 14, e0212361 | 6 |
| 505 | Learning Wireless Sensor Networks for Source Localization. **2019**, 19, | 21 |
| 504 | A projection wavelet weighted twin support vector regression and its primal solution. **2019**, 49, 3061-3081 | 6 |

| 503 | End-Point Static Control of Basic Oxygen Furnace (BOF) Steelmaking Based on Wavelet Transform Weighted Twin Support Vector Regression. **2019**, 2019, 1-16 | 10 |
| 502 | An improved non-parallel Universum support vector machine and its safe sample screening rule. **2019**, 170, 79-88 | 42 |
| 501 | Robust capped L1-norm twin support vector machine. **2019**, 114, 47-59 | 25 |
| 500 | . **2019**, 7, 22260-22275 | 8 |
| 499 | Multi-task least squares twin support vector machine for classification. **2019**, 338, 26-33 | 24 |
| 498 | Robust scene text recognition: Using manifold regularized Twin-Support Vector Machine. **2019**, 34, 589-589 | 5 |
| 497 | Twin Neural Networks for the classification of large unbalanced datasets. **2019**, 343, 34-49 | 15 |
| 496 | Proximal Support Vector Machine Classifier based on LMS Algorithm. **2019**, | 1 |
| 495 | Least Squares Twin Support Vector Machine Based on Manifold-based Within-class Scatter. **2019**, | 1 |
| 494 | Research on Evaluation of Flipped Classroom Based on Big Data. **2019**, | |
| 493 | A Real-World Investigation of TwinSVM for the Classification of Petroleum Drilling Data. **2019**, | 1 |
| 492 | An Improved Fuzzy Multi-class Twin Support Vector Machine. **2019**, | 1 |
| 491 | Software Defect Prediction Using Hybrid Distribution Base Balance Instance Selection and Radial Basis Function Classifier. **2019**, 8, 53-75 | 4 |
| 490 | . **2019**, | |
| 489 | Feature Selection Based on Twin Support Vector Regression. **2019**, | 4 |
| 488 | Motor Imagery Recognition of Upper Limb Single Joint Based on BCI Technology. **2019**, | 0 |
| 487 | An Effective Multiclass Twin Hypersphere Support Vector Machine and Its Practical Engineering Applications. **2019**, 8, 1195 | 1 |
| 486 | Extension Support Vector Machine for Extension Classification. **2019**, 162, 174-182 | 0 |

| 485 | Combustible Gas Classification Modeling using Support Vector Machine and Pairing Plot Scheme. **2019**, 19, | 2 |

| 484 | An Intelligent Online Grooming Detection System Using AI Technologies. **2019**, | 4 |

| 483 | Intelligence Science and Big Data Engineering. Big Data and Machine Learning. **2019**, | |

| 482 | Improved Sparse Pinball Twin SVM. **2019**, | 12 |

| 481 | Heart Sound Signal Classification Algorithm: A Combination of Wavelet Scattering Transform and Twin Support Vector Machine. **2019**, 7, 179339-179348 | 19 |

| 480 | A novel kernel-free nonlinear SVM for semi-supervised classification in disease diagnosis. **2019**, 1 | 3 |

| 479 | Regularized Universum twin support vector machine for classification of EEG Signal. **2019**, | 4 |

| 478 | Lagrangian Twin-Bounded Support Vector Machine Based on L2-Norm. **2019**, 431-444 | 9 |

| 477 | Clustering by twin support vector machine and least square twin support vector classifier with uniform output coding. **2019**, 163, 227-240 | 18 |

| 476 | Multi-model fusion metric learning for image set classification. **2019**, 164, 253-264 | 16 |

| 475 | A novel perspective on multiclass classification: Regular simplex support vector machine. **2019**, 480, 324-338 | 28 |

| 474 | Facial expression recognition using iterative universum twin support vector machine. **2019**, 76, 53-67 | 24 |

| 473 | A nonlinear kernel support matrix machine for matrix learning. **2019**, 10, 2725-2738 | 3 |

| 472 | Texture descriptors for representing feature vectors. **2019**, 122, 163-172 | 3 |

| 471 | CXNet-m1: Anomaly Detection on Chest X-Rays With Image-Based Deep Learning. **2019**, 7, 4466-4477 | 52 |

| 470 | A safe screening rule for accelerating weighted twin support vector machine. **2019**, 23, 7725-7739 | 2 |

| 469 | Efficient and robust TWSVM classification via a minimum L1-norm distance metric criterion. **2019**, 108, 993-1018 | 14 |

| 468 | An (l_1)-norm loss based twin support vector regression and its geometric extension. **2019**, 10, 2573-2588 | 6 |

| 467 | Linear classifier design in the weight space. **2019**, 88, 210-222 | 4 |

| 466 | Mining capital cost estimation using Support Vector Regression (SVR). **2019**, 62, 527-540 | 18 |

| 465 | All-in-one multicategory Ramp loss maximum margin of twin spheres support vector machine. **2019**, 49, 2301-2314 | 8 |

| 464 | Blind modulation format identification using decision tree twin support vector machine in optical communication system. **2019**, 438, 67-77 | 8 |

| 463 | Fast Laplacian twin support vector machine with active learning for pattern classification. **2019**, 74, 424-439 | 9 |

| 462 | End-point Prediction of BOF Steelmaking Based on KNNWTSVR and LWOA. **2019**, 72, 257-270 | 9 |

| 461 | Fuzzy semi-supervised weighted linear loss twin support vector clustering. **2019**, 165, 132-148 | 8 |

| 460 | KNN-based maximum margin and minimum volume hyper-sphere machine for imbalanced data classification. **2019**, 10, 357-368 | 8 |

| 459 | A novel projection twin support vector machine for binary classification. **2019**, 23, 655-668 | 4 |

| 458 | Large-scale structural learning and predicting via hashing approximation. **2019**, 31, 2889-2903 | |

| 457 | Particle Swarm Optimization-Enhanced Twin Support Vector Regression for Wind Speed Forecasting. **2019**, 28, 905-914 | 10 |

| 456 | A review on multi-class TWSVM. **2019**, 52, 775-801 | 18 |

| 455 | Iterative tighter nonparallel hyperplane support vector clustering with simultaneous feature selection. **2019**, 22, 8035-8049 | |

| 454 | Problem formulations and solvers in linear SVM: a review. **2019**, 52, 803-855 | 84 |

| 453 | Fixed-point twin support vector machine. **2019**, 22, 7991-8005 | |

| 452 | An improved Twin-KSVC with its applications. **2019**, 31, 6615-6624 | 3 |

| 451 | Multiview Learning With Generalized Eigenvalue Proximal Support Vector Machines. **2019**, 49, 688-697 | 38 |

| 450 | A spheres-based support vector machine for pattern classification. **2019**, 31, 379-396 | 6 |

| 449 | Kinesiology-inspired estimation of pedestrian walk direction for smart surveillance. **2020**, 108, 1008-1026 | 3 |
| 448 | Adaptively weighted learning for twin support vector machines via Bregman divergences. **2020**, 32, 3323-3336 | 1 |
| 447 | ML-SLSTSVM: a new structural least square twin support vector machine for multi-label learning. **2020**, 23, 295-308 | 10 |
| 446 | A v-twin projection SVR with automatic accuracy adjustment. **2020**, 53, 1511-1527 | 2 |
| 445 | Wavelet transform-based weighted (nu)-twin support vector regression. **2020**, 11, 95-110 | 7 |
| 444 | Twin minimax probability extreme learning machine for pattern recognition. **2020**, 187, 104806 | 9 |
| 443 | Sparsity in function and derivative approximation via the empirical feature space. **2020**, 512, 402-415 | |
| 442 | Lagrangian twin parametric insensitive support vector regression (LTPISVR). **2020**, 32, 5989-6007 | 5 |
| 441 | Dual possibilistic regression analysis using support vector networks. **2020**, 387, 1-34 | 7 |
| 440 | Locality preserving projection least squares twin support vector machine for pattern classification. **2020**, 23, 1-13 | 6 |
| 439 | Projection twin support vector machine for pattern classification. **2020**, 376, 10-24 | 13 |
| 438 | Ramp-based twin support vector clustering. **2020**, 32, 9885-9896 | 9 |
| 437 | A 1-norm regularized linear programming nonparallel hyperplane support vector machine for binary classification problems. **2020**, 376, 141-152 | 9 |
| 436 | Energy-based structural least squares MBSVM for classification. **2020**, 50, 681-697 | 4 |
| 435 | Functional iterative approaches for solving support vector classification problems based on generalized Huber loss. **2020**, 32, 9245-9265 | 12 |
| 434 | Multi-View Support Vector Machines with the Consensus and Complementarity Information. **2020**, 32, 2401-2413 | 23 |
| 433 | Entropy-Based Fuzzy Least Squares Twin Support Vector Machine for Pattern Classification. **2020**, 51, 41-66 | 6 |
| 432 | Non-parallel least squares support matrix machine for rolling bearing fault diagnosis. **2020**, 145, 103676 | 17 |

| | | |
|---|---|---|
| 431 | A reduced universum twin support vector machine for class imbalance learning. **2020**, 102, 107150 | 49 |
| 430 | A survey of robust optimization based machine learning with special reference to support vector machines. **2020**, 11, 1359-1385 | 3 |
| 429 | Correlation classifiers based on data perturbation: New formulations and algorithms. **2020**, 100, 107106 | 3 |
| 428 | A survey on semi-supervised learning. **2020**, 109, 373-440 | 412 |
| 427 | A Novel Separating Hyperplane Classification Framework to Unify Nearest-Class-Model Methods for High-Dimensional Data. **2020**, 31, 3866-3876 | 1 |
| 426 | End-point dynamic control of basic oxygen furnace steelmaking based on improved unconstrained twin support vector regression. **2020**, 27, 42-54 | 2 |
| 425 | Multi-task (nu)-twin support vector machines. **2020**, 32, 11329-11342 | 7 |
| 424 | Robust twin support vector regression based on Huber loss function. **2020**, 32, 11285-11309 | 7 |
| 423 | Generalized elastic net Lp-norm nonparallel support vector machine. **2020**, 88, 103397 | 10 |
| 422 | Robust statistics-based support vector machine and its variants: a survey. **2020**, 32, 11173-11194 | 8 |
| 421 | Medical data set classification using a new feature selection algorithm combined with twin-bounded support vector machine. **2020**, 58, 519-528 | 19 |
| 420 | A Novel Angle-Based Learning Framework on Semi-supervised Dimensionality Reduction in High-Dimensional Data with Application to Action Recognition. **2020**, 45, 11051-11063 | |
| 419 | General Plane-Based Clustering With Distribution Loss. **2021**, 32, 3880-3893 | 3 |
| 418 | Neurodynamical classifiers with low model complexity. **2020**, 132, 405-415 | 2 |
| 417 | LSTSVM classifier with enhanced features from pre-trained functional link network. **2020**, 93, 106305 | 16 |
| 416 | Projection multi-birth support vector machinea for multi-classification. **2020**, 50, 3040-3056 | 1 |
| 415 | Smooth Twin Bounded Support Vector Machine with Pinball Loss. **2020**, 1631, 012181 | 1 |
| 414 | Stochastic nonparallel hyperplane support vector machine for binary classification problems and no-free-lunch theorems. **2020**, 1 | 1 |

| 395 | Improved Sparsity of Support Vector Machine with Robustness Towards Label Noise Based on Rescaled (alpha )-Hinge Loss with Non-smooth Regularizer. **2020**, 52, 2211-2239 | 1 |
| 394 | A new method to classify malicious domain name using neutrosophic sets in DGA botnet detection. **2020**, 38, 4223-4236 | 8 |
| 393 | A nonparallel support vector machine with pinball loss for pattern classification. **2020**, 39, 911-923 | |
| 392 | Quantum speedup of twin support vector machines. **2020**, 63, 1 | 3 |
| 391 | Enhanced automatic twin support vector machine for imbalanced data classification. **2020**, 107, 107442 | 8 |
| 390 | Linear Twin Quadratic Surface Support Vector Regression. **2020**, 2020, 1-18 | 1 |
| 389 | Pancreatic Cancer Early Detection Using Twin Support Vector Machine Based on Kernel. **2020**, 12, 667 | 5 |
| 388 | Incremental and decremental fuzzy bounded twin support vector machine. **2020**, 526, 20-38 | 14 |
| 387 | Nonparallel support vector machine with large margin distribution for pattern classification. **2020**, 106, 107374 | 7 |
| 386 | Ramp loss for twin multi-class support vector classification. **2020**, 51, 1448-1463 | 4 |
| 385 | Least squares projection twin support vector clustering (LSPTSVC). **2020**, 533, 1-23 | 12 |
| 384 | Multi-view semi-supervised least squares twin support vector machines with manifold-preserving graph reduction. **2020**, 11, 2489-2499 | 4 |
| 383 | Capped L1-norm distance metric-based fast robust twin bounded support vector machine. **2020**, 412, 295-311 | 3 |
| 382 | . **2020**, 8, 47914-47924 | 1 |
| 381 | Twin support vector machine based on improved artificial fish swarm algorithm with application to flame recognition. **2020**, 50, 2312-2327 | 11 |
| 380 | Multi-category news classification using Support Vector Machine based classifiers. **2020**, 2, 1 | 10 |
| 379 | Improved multi-view GEPSVM via Inter-View Difference Maximization and Intra-view Agreement Minimization. **2020**, 125, 313-329 | 7 |
| 378 | Multi-Clusters Adaptive Brain Storm Optimization Algorithm for QoS-Aware Service Composition. **2020**, 8, 48822-48835 | 3 |

| 377 | Multiple birth support vector machine based on recurrent neural networks. **2020**, 50, 2280-2292 | 7 |

| 376 | Capped L1-norm distance metric-based fast robust twin extreme learning machine. **2020**, 50, 3775-3787 | 0 |

| 375 | . **2020**, 8, 29489-29500 | 5 |

| 374 | NPrSVM: Nonparallel sparse projection support vector machine with efficient algorithm. **2020**, 90, 106142 | 5 |

| 373 | A novel prediction method for favorable reservoir of oil field based on grey wolf optimizer and twin support vector machine. **2020**, 189, 106952 | 7 |

| 372 | Robust weighted linear loss twin multi-class support vector regression for large-scale classification. **2020**, 170, 107449 | 4 |

| 371 | Fast clustering-based weighted twin support vector regression. **2020**, 24, 6101-6117 | 2 |

| 370 | Unconstrained convex minimization based implicit Lagrangian twin extreme learning machine for classification (ULTELMC). **2020**, 50, 1327-1344 | 9 |

| 369 | An enhanced KNN-based twin support vector machine with stable learning rules. **2020**, 32, 12949-12969 | 2 |

| 368 | Twin Hyper-Ellipsoidal Support Vector Machine for Binary Classification. **2020**, 8, 87341-87353 | 3 |

| 367 | Robust twin support vector regression based on rescaled Hinge loss. **2020**, 105, 107395 | 13 |

| 366 | Rebooting data-driven soft-sensors in process industries: A review of kernel methods. **2020**, 89, 58-73 | 34 |

| 365 | Supervised and semi-supervised twin parametric-margin regularized extreme learning machine. **2020**, 23, 1603-1626 | 1 |

| 364 | Twin support vector machine based on adjustable large margin distribution for pattern classification. **2020**, 11, 2371-2389 | 6 |

| 363 | Feature selected cost-sensitive twin SVM for imbalanced data. **2020**, 309, 05013 | 0 |

| 362 | An Interval Forecasting Model Based on Phase Space Reconstruction and Weighted Least Squares Support Vector Machine for Time Series of Dissolved Gas Content in Transformer Oil. **2020**, 13, 1687 | 4 |

| 361 | RETRACTED: A novel twin minimax probability machine for classification and regression. **2020**, 196, 105703 | 4 |

| 360 | A novel method for the classification of Alzheimer's disease from normal controls using magnetic resonance imaging. **2021**, 38, | 14 |

| 359 | Support Multimode Tensor Machine for Multiple Classification on Industrial Big Data. **2021**, 17, 3382-3390 | 11 |

| 358 | Sparse support vector machine with pinball loss. **2021**, 32, e3820 | 3 |

| 357 | Large-Scale Twin Parametric Support Vector Machine Using Pinball Loss Function. **2021**, 51, 987-1003 | 14 |

| 356 | Twin-parametric margin support vector machine with truncated pinball loss. **2021**, 33, 3781-3798 | 7 |

| 355 | Correntropy-based metric for robust twin support vector machine. **2021**, 545, 82-101 | 6 |

| 354 | Source localization in resource-constrained sensor networks based on deep learning. **2021**, 33, 4217-4228 | 0 |

| 353 | A kernel fuzzy twin SVM model for early warning systems of extreme financial risks. **2021**, 26, 1459-1468 | 5 |

| 352 | Geometric projection twin support vector machine for pattern classification. **2021**, 80, 23073-23089 | 2 |

| 351 | Ternary tree-based structural twin support tensor machine for clustering. **2021**, 24, 61-74 | 1 |

| 350 | A heuristic technique to detect phishing websites using TWSVM classifier. **2021**, 33, 5733-5752 | 6 |

| 349 | D.C. programming for sparse proximal support vector machines. **2021**, 547, 187-201 | 9 |

| 348 | Adaptive robust learning framework for twin support vector machine classification. **2021**, 211, 106536 | 5 |

| 347 | A hybrid acceleration strategy for nonparallel support vector machine. **2021**, 546, 543-558 | 5 |

| 346 | Non-parallel hyperplanes ordinal regression machine. **2021**, 216, 106593 | 0 |

| 345 | A SVM-based framework for fault detection in high-speed trains. **2021**, 172, 108779 | 7 |

| 344 | Multi-class classification method for steel surface defects with feature noise. **2021**, 28, 303-315 | 1 |

| 343 | Machine Learning in Predictive Toxicology: Recent Applications and Future Directions for Classification Models. **2021**, 34, 217-239 | 14 |

| 342 | Efficient implicit Lagrangian twin parametric insensitive support vector regression via unconstrained minimization problems. **2021**, 89, 301-332 | 1 |

| | | |
|---|---|---|
| 341 | Robust supervised and semi-supervised twin extreme learning machines for pattern classification. **2021**, 180, 107861 | 1 |
| 340 | Smooth pinball loss nonparallel support vector machine for robust classification. **2021**, 98, 106840 | 13 |
| 339 | Polyhedral Conic Classifiers for Computer Vision Applications and Open Set Recognition. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **2021**, 43, 608-622 | 13.3 4 |
| 338 | Cardiac Arrhythmia Disease Classification Using LSTM Deep Learning Approach. **2021**, 67, 427-443 | 15 |
| 337 | A new transductive learning method with universum data. **2021**, 51, 5571-5583 | 3 |
| 336 | Directed acyclic graph fuzzy nonparallel support vector machine. **2021**, 40, 1457-1470 | 0 |
| 335 | Rough margin-based £twin support tensor machine in pattern recognition. **2021**, 40, 685-702 | |
| 334 | Regularized based implicit Lagrangian twin extreme learning machine in primal for pattern classification. **2021**, 12, 1311-1342 | 10 |
| 333 | MPMSVC: Multiple Parametric-Margin Support Vector Clustering. **2021**, 9, 24499-24512 | |
| 332 | Margin Distribution Analysis. **2021**, PP, | |
| 331 | Smooth twin bounded support vector machine with pinball loss. **2021**, 51, 5489-5505 | 2 |
| 330 | Series Arc Fault Detection of Grid-Connected PV System via SVD Denoising and IEWT-TWSVM. **2021**, 1-18 | 3 |
| 329 | Robust General Twin Support Vector Machine with Pinball Loss Function. **2021**, 103-125 | 5 |
| 328 | Multi-class support vector machine based on the minimization of class variance. **2021**, 53, 517-533 | 3 |
| 327 | Sample Reduction Using (ell _1)-Norm Twin Bounded Support Vector Machine. **2021**, 141-153 | 1 |
| 326 | Multiview Learning With Robust Double-Sided Twin SVM. **2021**, PP, | 27 |
| 325 | Semi-Hard Margin Support Vector Machines for Personal Authentication with an Aerial Signature Motion. **2021**, 333-344 | |
| 324 | Automation of Prediction Method for Supervised Learning. **2021**, | 0 |

| 323 | Elastic Net Nonparallel Hyperplane Support Vector Machine and Its Geometrical Rationality. **2021**, PP, | 3 |
| 322 | A Comparative Study on Fault Detection Using Twin Support Vector Machines for Wireless Sensor Networks. **2021**, 261-273 | |
| 321 | Robust twin bounded support vector machines for outliers and imbalanced data. **2021**, 51, 5314-5343 | 9 |
| 320 | Least squares large margin distribution machine for regression. **2021**, 51, 7058-7093 | 5 |
| 319 | Integrated Artificial Intelligence and Visualization Technique for Enhanced Management Decision in Today's Turbulent Business Environments. **2021**, 52, 274-292 | 4 |
| 318 | Cancer Diagnosis and Disease Gene Identification via Statistical Machine Learning. **2021**, 15, 956-962 | 11 |
| 317 | Robust twin extreme learning machines with correntropy-based metric. **2021**, 214, 106707 | 1 |
| 316 | Covariance matrix forecasting using support vector regression. **2021**, 51, 7029-7042 | 2 |
| 315 | Karmaşık verileri sıflandırabilen ok merkezli ok yıllkonik sıflandırıılar. | |
| 314 | Data-driven mechanism based on fuzzy Lagrangian twin parametric-margin support vector machine for biomedical data analysis. 1 | 3 |
| 313 | Universal consistency of twin support vector machines. **2021**, 12, 1867 | 0 |
| 312 | A new twin SVM method with dictionary learning. **2021**, 51, 7245-7261 | 0 |
| 311 | Generalized Twin Support Vector Machines. **2021**, 53, 1545-1564 | 8 |
| 310 | Change Point Test for the Conditional Mean of Time Series of Counts Based on Support Vector Regression. **2021**, 23, | 0 |
| 309 | On robust asymmetric Lagrangian ✦-twin support vector regression using pinball loss function. **2021**, 102, 107099 | 3 |
| 308 | Modeling research of initial atmospheric corrosion of Q235 carbon steel based on electrical resistance probe. **2021**, 68, 45-52 | 1 |
| 307 | MBSVR: Multiple birth support vector regression. **2021**, 552, 65-79 | 6 |
| 306 | Automated Diagnosis system for detection of the pathological brain using Fast version of Simplified Pulse-Coupled Neural Network and Twin Support Vector Machine. **2021**, 80, 30479-30502 | 0 |

| 305 | Detection of Unit of Measure Inconsistency in gas turbine sensors by means of Support Vector Machine classifier. **2021**, | 2 |
|---|---|---|
| 304 | CTSVM: A robust twin support vector machine with correntropy-induced loss function for binary classification problems. **2021**, 559, 22-45 | 1 |
| 303 | Multi-view learning based on maximum margin of twin spheres support vector machine. **2021**, 40, 11273-11286 | 1 |
| 302 | Nonparallel parametric margin fuzzy support vector machine. **2021**, 40, 11731-11747 | |
| 301 | A robust projection twin support vector machine with a generalized correntropy-based loss. 1 | 1 |
| 300 | Detecting Facial Images In Public With And Without Masks Using VGG And FR-TSVM Models. **2021**, | |
| 299 | Pinball loss-based multi-task twin support vector machine and its safe acceleration method. **2021**, 33, 15523 | 2 |
| 298 | Intuitionistic Fuzzy Laplacian Twin Support Vector Machine for Semi-supervised Classification. 1 | 1 |
| 297 | Least squares approach to K-SVCR multi-class classification with its applications. 1 | 2 |
| 296 | Bound estimation-based safe acceleration for maximum margin of twin spheres machine with pinball loss. **2021**, 114, 107860 | 4 |
| 295 | Universum parametric-margin Esupport vector machine for classification using the difference of convex functions algorithm. 1 | 1 |
| 294 | Pinball Loss Twin Support Vector Clustering. **2021**, 17, 1-23 | 7 |
| 293 | -TSVM: A Robust Transductive Support Vector Machine and its Application to the Detection of COVID-19 Infected Patients. **2021**, 53, 1-30 | 0 |
| 292 | Short-term wind speed prediction using hybrid machine learning techniques. **2021**, 1 | 2 |
| 291 | v-Twin SVR Based OFDM System Wireless Channel Estimation. **2022**, 973-978 | |
| 290 | Robust truncated L(_2)-norm twin support vector machine. **2021**, 12, 3415 | 1 |
| 289 | Pinball Twin Bounded Support Vector Clustering. **2021**, | 2 |
| 288 | Using Fuzzy Classifier in Ensemble Method for Motor Imagery Electroencephalography Classification. 1 | 1 |

| 287 | A novel kernel-free least squares twin support vector machine for fast and accurate multi-class classification. **2021**, 226, 107123 | 6 |

| 286 | Discriminating three motor imagery states of the same joint for brain-computer interface. **2021**, 9, e12027 | 1 |

| 285 | SVGPM: evolving SVM decision function by using genetic programming to solve imbalanced classification problem. 1 | |

| 284 | Towards understanding the power of quantum kernels in the NISQ era. 5, 531 | 6 |

| 283 | An Efficient Angle-based Universum Least Squares Twin Support Vector Machine for Classification. **2021**, 21, 1-24 | 14 |

| 282 | Fuzzy least squares projection twin support vector machines for class imbalance learning. **2021**, 113, 107933 | 8 |

| 281 | A two-stage safe screening method for non-convex support vector machine with ramp loss. **2021**, 228, 107250 | 2 |

| 280 | Generalized eigenvalue extreme learning machine for classification. 1 | 1 |

| 279 | Universum based Lagrangian twin bounded support vector machine to classify EEG signals. **2021**, 208, 106244 | 6 |

| 278 | On Lagrangian L2-norm pinball twin bounded support vector machine via unconstrained convex minimization. **2021**, 571, 279-302 | 4 |

| 277 | Evolving data-adaptive support vector machines for binary classification. **2021**, 227, 107221 | 5 |

| 276 | Twin support vector machines with privileged information. **2021**, 573, 141-153 | 1 |

| 275 | Intuitionistic fuzzy proximal support vector machine for multicategory classification problems. **2021**, 25, 14039 | 0 |

| 274 | Business analytics for corporate risk management and performance improvement. 1 | 1 |

| 273 | Twin K-class support vector classification with pinball loss. **2021**, 113, 107929 | 0 |

| 272 | Stellar spectra classification with twin hypersphere model. **2021**, 88, 101613 | 1 |

| 271 | Capped L-norm metric based robust least squares twin support vector machine for pattern classification. **2021**, 142, 457-478 | 3 |

| 270 | R-CTSVM+: Robust capped L1-norm twin support vector machine with privileged information. **2021**, 574, 12-32 | 3 |

| 269 | A rough margin-based multi-task Ξtwin support vector machine for pattern classification. **2021**, 112, 107769 | 4 |
| 268 | Class imbalance learning using fuzzy ART and intuitionistic fuzzy twin support vector machines. **2021**, 578, 659-682 | 7 |
| 267 | An intuitionistic fuzzy kernel ridge regression classifier for binary classification. **2021**, 112, 107816 | 9 |
| 266 | Parallel LS-SVM for the numerical simulation of fractional Volterraᵔ population model. **2021**, 60, 5637-5647 | 3 |
| 265 | Indefinite twin support vector machine with DC functions programming. **2022**, 121, 108195 | 3 |
| 264 | A fuzzy universum least squares twin support vector machine (FULSTSVM). 1 | 4 |
| 263 | On Regularization Based Twin Support Vector Regression with Huber Loss. **2021**, 53, 1-57 | 4 |
| 262 | A Fault Diagnosis Method based on Improved Synthetic Minority Oversampling Technique and SVM for Unbalanced Data. **2021**, 1043, 052034 | 1 |
| 261 | From Separating to Proximal Plane Classifiers: A Review. **2014**, 167-180 | 1 |
| 260 | Application of Twin Support Vector Machine for Fault Diagnosis of Rolling Bearing. **2014**, 161-167 | 1 |
| 259 | Fuzzy Chance Constrained Twin Support Vector Machine for Uncertain Classification. **2018**, 1508-1521 | 1 |
| 258 | Tree-Based Structural Twin Support Tensor Clustering with Square Loss Function. **2017**, 28-34 | 1 |
| 257 | Multi-label Classifier for Emotion Recognition from Music. **2016**, 111-123 | 4 |
| 256 | Robust Parametric Twin Support Vector Machine and Its Application in Human Activity Recognition. **2017**, 193-203 | 5 |
| 255 | A Fuzzy Universum Support Vector Machine Based on Information Entropy. **2019**, 569-582 | 6 |
| 254 | Least Squares Twin Extreme Learning Machine for Pattern Classification. **2019**, 561-571 | 5 |
| 253 | Robust regularized extreme learning machine with asymmetric Huber loss function. **2020**, 32, 12971-12998 | 15 |
| 252 | General multi-view semi-supervised least squares support vector machines with multi-manifold regularization. **2020**, 62, 63-72 | 16 |

| 251 | Research on fingerprint classification based on twin support vector machine. **2020**, 14, 231-235 | 9 |

| 250 | Feature Selection Based Twin-Support Vector Machine for the Diagnosis of Parkinson's Disease. **2020**, | 8 |

| 249 | Machine Learning Techniques for the Diagnosis of Alzheimer's Disease. **2020**, 16, 1-35 | 49 |

| 248 | Large scale least squares twin SVMs. | 4 |

| 247 | Data Mining for the Internet of Things: Literature Review and Challenges. **2015**, 11, 431047 | 241 |

| 246 | Decision Support System for Management Decision in High-Risk Business Environment. **2018**, 46, 20170252 | 1 |

| 245 | LightTwinSVM: A Simple and Fast Implementation of Standard Twin Support Vector Machine Classifier. **2019**, 4, 1252 | 3 |

| 244 | Twin Least Square Support Vector Regression Model Based on Gauss-Laplace Mixed Noise Feature with Its Application in Wind Speed Prediction. **2020**, 22, | 4 |

| 243 | An Application of Decision Tree-Based Twin Support Vector Machines to Classify Dephosphorization in BOF Steelmaking. **2020**, 10, 25 | 4 |

| 242 | DECISION MAKING BY EXTRACTING SOFT INFORMATION FROM CSR NEWS REPORT. **2018**, 24, 1344-1361 | 12 |

| 241 | Twin Support Vector Machines Based on Particle Swarm Optimization. **2013**, 8, | 12 |

| 240 | Mixed Kernel Twin Support Vector Machines Based on the Shuffled Frog Leaping Algorithm. **2014**, 9, | 1 |

| 239 | Twin Support Vector Machines Based on the Mixed Kernel function. **2014**, 9, | 0 |

| 238 | An Improved Twin Support Vector Regression Machine Based on Adjusted Cosine Similarity for Load Prediction. **2021**, | 1 |

| 237 | Reductive and effective discriminative information-based nonparallel support vector machine. 1 |

| 236 | Large-scale pinball twin support vector machines. 1 | 9 |

| 235 | State Feedback Control Based on Twin Support Vector Regression Compensating for a Class of Nonlinear Systems. **2011**, 515-524 |

| 234 | New Multi-class Classification Method Based on the SVDD Model. **2011**, 103-112 | 1 |

| 215 | Large Margin Proximal Non-parallel Support Vector Classifiers. **2018**, 715-721 | |
|---|---|---|
| 214 | Stochastic Conjugate Gradient Descent Twin Support Vector Machine for Large Scale Pattern Classification. **2018**, 590-602 | 1 |
| 213 | Decision Tree Twin Support Vector Machine Based on Kernel Clustering for Multi-class Classification. **2018**, 293-303 | 2 |
| 212 | A Privacy-Preserving Twin Support Vector Machine Classifier for Vertical Partitioned Data. **2019**, 539-552 | 2 |
| 211 | A Non-singular Twin Support Vector Machine. **2019**, 774-783 | |
| 210 | Wavelet Kernel Twin Support Vector Machine. **2019**, 765-773 | |
| 209 | An Advanced Least Squares Twin Multi-class Classification Support Vector Machine for Few-Shot Classification. **2019**, 243-252 | |
| 208 | Scalable Least Square Twin Support Vector Machine Learning. **2019**, 239-249 | 1 |
| 207 | Predicting Thermal Power Consumption of the Mars Express Satellite with Data Stream Mining. **2019**, 186-201 | 0 |
| 206 | Semi-Supervised Learning Machine Based on Multi-View Twin Support Vector Machine. **2019**, 09, 177-188 | |
| 205 | Support Vector Machines. **2019**, 593-644 | |
| 204 | Application of TWSVR Models in Stock Price Forecast. **2019**, | |
| 203 | Classification of Human Sperm Head in Microscopic Images Using Twin Support Vector Machine and Neural Network. **2020**, 857-871 | 2 |
| 202 | Dual possibilistic regression models of support vector machines and application in power load forecasting. **2020**, 16, 155014772092163 | 2 |
| 201 | Classification of Plant Based on Leaf Images. **2021**, 29-37 | |
| 200 | Epileptic Seizure Detection Using DWT- and Rule-Based Variants of TSVM with KNN. **2021**, 357-364 | |
| 199 | Arrhythmia Classification Using Hybrid Feature Selection Approach and Ensemble Learning Technique. **2021**, | |
| 198 | A Review of Latest Multi-instance Learning. **2020**, | 1 |

| | | |
|---|---|---|
| 197 | A systematic review on the developments and evaluation of twin learning algorithms. **2020**, | |
| 196 | A weighted twin support vector machine as a potential discriminant analysis tool and evaluation of its performance for near-infrared spectroscopic discrimination of the geographical origins of diverse agricultural products. **2022**, 237, 122973 | 1 |
| 195 | Performance-improved TSVR-based DHM model of super high arch dams using measured air temperature. **2022**, 250, 113400 | 2 |
| 194 | Short-term traffic flow prediction based on a hybrid optimization algorithm. **2022**, 102, 385-404 | 2 |
| 193 | Density based fuzzy support vector machine: application to diabetes dataset. **2021**, 8, 747-760 | 0 |
| 192 | Twin Least Squares Support Vector Regression of Heteroscedastic Gaussian Noise Model. **2020**, 8, 94076-94088 | 3 |
| 191 | Feature Selection Using Sparse Twin Bounded Support Vector Machine. **2020**, 357-369 | 1 |
| 190 | The Prediction of Stock Index Movements Based on Machine Learning. **2020**, | 0 |
| 189 | Twin Support Vector Machines for Thalassemia Classification. **2021**, | |
| 188 | Density Weighted Twin Support Vector Machines for Binary Class Imbalance Learning. 1 | 7 |
| 187 | FTWSVM-SR: DNA-Binding Proteins Identification via Fuzzy Twin Support Vector Machines on Self-Representation. **2021**, 1 | 3 |
| 186 | State-of-the-Art Machine Learning Techniques for Diagnosis of Alzheimer Disease from MR-Images: A Systematic Review. 1 | 0 |
| 185 | A Novel Structural Multiple Birth Support Vector Machine for Pattern Recognition. **2020**, | |
| 184 | . **2021**, 1-10 | 2 |
| 183 | Regularized twin minimax probability machine for pattern classification and regression. **2022**, 107, 104550 | 1 |
| 182 | Regularized Least Squares Twin SVM for Multiclass Classification. **2022**, 27, 100295 | 2 |
| 181 | An Optimal DAG-LSTSVM Algorithm Based on Imbalance Factor for Vehicle Fault Diagnosis. **2021**, | |
| 180 | FDN-ADNet: Fuzzy LS-TWSVM based deep learning network for prognosis of the Alzheimer disease using the sagittal plane of MRI scans. **2021**, 108099 | 6 |

| 179 | Ratiometric 3D DNA Machine Combined with Machine Learning Algorithm for Ultrasensitive and High-Precision Screening of Early Urinary Diseases. **2021**, | 9 |
| --- | --- | --- |
| 178 | Inverse Free Universum Twin Support Vector Machine. **2021**, 252-264 | |
| 177 | Robust Least Squares Twin Support Vector Regression With Adaptive FOA and PSO for Short-Term Traffic Flow Prediction. **2021**, 1-15 | 2 |
| 176 | LP-MLTSVM: Laplacian Multi-label Twin Support Vector Machine for Semi-Supervised Classification. **2022**, 1-1 | 0 |
| 175 | Machine learning applications on neuroimaging for diagnosis and prognosis of epilepsy: A review.. **2021**, 368, 109441 | 7 |
| 174 | Study of thermal sensation prediction model based on support vector classification (SVC) algorithm with data preprocessing. **2022**, 48, 103919 | 1 |
| 173 | A New Fast Twin Support Vector Regression. **2020**, | |
| 172 | A Hierarchical Approach for Multi-class Classification of Leaf Images. **2020**, | 1 |
| 171 | An Improved Density Based Support Vector Machine (DBSVM). **2020**, | 1 |
| 170 | Weighted Least Square - Support Vector Machine. **2021**, | |
| 169 | Feature Selection Method for L1-norm Twin Support Vector Regression. **2021**, | |
| 168 | Support Vector Machine Classification. **2022**, 97-246 | |
| 167 | SOCP approach to robust twin parametric margin support vector machine. 1 | 0 |
| 166 | Brain age prediction using improved twin SVR. 1 | 4 |
| 165 | Brain age prediction with improved least squares twin SVR.. **2022**, PP, | 2 |
| 164 | Intuitionistic fuzzy twin support vector machines with the insensitive pinball loss. **2022**, 115, 108231 | 2 |
| 163 | A Novel Twin Support Vector Machine with Generalized Pinball Loss Function for Pattern Classification. **2022**, 14, 289 | 0 |
| 162 | An Algebraic Approach to Clustering and Classification with Support Vector Machines. **2022**, 10, 128 | 0 |

| 143 | The Cobb-Douglas Learning Machine. **2022**, 108701 | 1 |
| 142 | An optimized twin support vector regression algorithm enhanced by ensemble empirical mode decomposition and gated recurrent unit. **2022**, 598, 101-125 | 0 |
| 141 | A novel multi-task twin-hypersphere support vector machine for classification. **2022**, 598, 37-56 | 0 |
| 140 | KNN weighted reduced universum twin SVM for class imbalance learning. **2022**, 245, 108578 | 0 |
| 139 | Robust Least Squares Projection Twin Support Vector Machine and its Sparse Solution. **2021**, | |
| 138 | Predicting the Trends of Stock Price By Social Networks and Fuzzy Deep Support Vector Machine. **2021**, | 0 |
| 137 | Joint Utility and Frequency for Pattern Classification. **2021**, | 0 |
| 136 | Research on Early Warning Model of Enterprise Financial Crisis Based on Structural Fuzzy Twin Support Vector Machine. **2021**, | |
| 135 | A Multiclass Nonparallel Parametric-Margin Support Vector Machine. **2021**, 12, 515 | 1 |
| 134 | Comparative Study of Classification of Histopathological Images. **2021**, | 1 |
| 133 | A Novel Semismooth Newton Algorithm for PCA-Twin Support Vector Machine. **2022**, | |
| 132 | Applying Cross-Permutation-Based Quad-Hybrid Feature Selection Algorithm on Transient Univariates to Select Optimal Features for Transient Analysis. **2022**, 1-1 | 1 |
| 131 | An improved parametric-margin universum TSVM. 1 | |
| 130 | Uncertainty-aware twin support vector machines. **2022**, 108706 | 0 |
| 129 | Brain tumor segmentation and classification in MRI using SVM and its variants: a survey. 1 | 3 |
| 128 | Table_1.XLSX. **2019**, | |
| 127 | Diagnosis of Schizophrenia: A comprehensive evaluation.. **2022**, PP, | 2 |
| 126 | Twin Support Vector Machines Classifier Based on Intuitionistic Fuzzy Number. **2022**, 371-384 | |

| 125 | A Binary PSO-based Model Selection for Novel Smooth Twin Support Vector Regression. **2022**, 13, 0-0 | |
| 124 | Neo-Twin Support Vector Machines for Pattern Classification. **2022**, | 1 |
| 123 | Ramp loss KNN-weighted multi-class twin support vector machine. 1 | 0 |
| 122 | Robust Least Squares Projection Twin Support Vector Machine and its Sparse Solution. **2022**, 200087 | |
| 121 | Safe intuitionistic fuzzy twin support vector machine for semi-supervised learning. **2022**, 108906 | 1 |
| 120 | Comprehensive comparative study of multi-label classification methods. **2022**, 203, 117215 | 3 |
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| 118 | Robust distance metric optimization driven GEPSVM classifier for pattern classification. **2022**, 129, 108779 | |
| 117 | Multi-task twin spheres support vector machine with maximum margin for imbalanced data classification. | |
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| 115 | Hyperspectral Image Classification Based on Non-Parallel Support Vector Machine. **2022**, 14, 2447 | 0 |
| 114 | Predicting stock index movement using twin support vector machine as an integral part of enterprise system. | |
| 113 | Multi-task nonparallel support vector machine for classification. **2022**, 124, 109051 | 0 |
| 112 | Iterative Learning in Support Vector Regression With Heterogeneous Variances. **2022**, 1-10 | |
| 111 | L2-Loss nonparallel bounded support vector machine for robust classification and its DCD-type solver. **2022**, 109125 | |
| 110 | Lagrangian Regularized Twin Extreme Learning Machine for Supervised and Semi-Supervised Classification. **2022**, 14, 1186 | |
| 109 | TSVMPath: Fast Regularization Parameter Tuning Algorithm for Twin Support Vector Machine. | 1 |
| 108 | Bipolar fuzzy based least squares twin bounded support vector machine. **2022**, | 0 |

107    Multi-view learning with privileged weighted twin support vector machine. **2022**, 206, 117787          0

106    Energy-Based Least Squares Projection Twin SVM. **2022**, 735-747

105    On Twin Bounded Support Vector Machine with Pinball Loss. **2022**, 177-190

104    Robust Multi-task Least Squares Twin Support Vector Machines for Classification. **2022**, 393-405

103    Development of a Smartphone-Based Expert System for COVID-19 Risk Prediction at Early Stage. **2022**, 9, 281          2

102    Fast Detection of Diarrhetic Shellfish Poisoning Toxins in Mussels Using NIR Spectroscopy and Improved Twin Support Vector Machines. 9,

101    Membership score machine for highly nonlinear classification for small data.

100    Twin proximal least squares support vector regression machine based on heteroscedastic Gaussian noise. **2022**, 1-15

99    Risk-Averse support vector classifier machine via moments penalization.          1

98    Robust Pinball Twin Bounded Support Vector Machine for Data Classification.          1

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91    Automation of prediction system for temporal data.

90    Micro Learning Support Vector Machine for Pattern Classification: A High-Speed Algorithm. **2022**, 2022, 1-7

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