

1. Record Nr.	UNINA9910865251203321
Autore	Mezura-Montes Efrén
Titolo	Pattern Recognition : 16th Mexican Conference, MCPR 2024, Xalapa, Mexico, June 19-22, 2024, Proceedings
Pubbl/distr/stampa	Cham : , : Springer, , 2024 ©2024
ISBN	9783031628368 9783031628351
Edizione	[1st ed.]
Descrizione fisica	1 online resource (406 pages)
Collana	Lecture Notes in Computer Science Series ; ; v.14755
Altri autori (Persone)	Acosta-MesaHéctor Gabriel Carrasco-OchoaJesús Ariel Martínez-TrinidadJosé Francisco Olvera-LópezJosé Arturo
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Pattern Recognition and Machine Learning Techniques -- Identification of Spatial Dynamic Patterns of Behavior Using Weighted Voronoi Diagrams -- 1 Introduction -- 2 Weighted Voronoi Diagrams -- 3 Application for SDBA -- 3.1 Data Acquisition -- 3.2 Generation of Weighted Voronoi Diagrams -- 3.3 Data Analysis -- 4 Conclusions -- References -- Pattern Recognition in Road Safety: Uncovering the Latent Causes of Accidents on Mexico's Federal Highways -- 1 Introduction -- 2 Unsupervised Methods -- 2.1 Latent Dirichlet Allocation -- 2.2 K-Means Algorithm -- 3 Methodology -- 3.1 Information Acquisition -- 3.2 Data Pre-processing -- 3.3 Uncovering Latent Patterns -- 3.4 Assessment Metric -- 4 Results -- 4.1 Latent Topics in Accidents -- 4.2 K-Means in Accidents -- 4.3 Comparative Evaluation of Models -- 5 Conclusions -- References -- A Regression Tree as Acquisition Function for Low-Dimensional Optimisation -- 1 Introduction -- 2 Mathematical Framework -- 2.1 A Brownian Process over a d-Simplex -- 2.2 Simplex-Based Regression Tree -- 2.3 Selection Criterion for the Next Simplex to Split -- 3 Results -- 3.1 Comparison with DIRECT --

3.2 Benchmark Study: Regression Tree vs Evolutionary Algorithms -- 4
Discussion -- 5 Conclusions and Future Work -- References -- Missing Data and Their Effect on Algorithm Selection for the Bin Packing Problem -- 1 Introduction -- 2 Background and Related Work -- 3 Solution Approach -- 3.1 The Instances -- 3.2 Problem Characterization -- 3.3 The Heuristics -- 3.4 Multi-layer Perceptron as an Algorithm Selector -- 4 Experiments and Results -- 4.1 No Treatment on Missing Values -- 4.2 Working only with Complete Cases -- 4.3 Using Data Imputation -- 5 Conclusion -- References -- Statistical Evaluation of CESAMO Encoder for Pattern Preservation in Categorical Data -- 1 Introduction.
2 General Methodology -- 2.1 CESAMO Algorithm -- 2.2 Synthetic Data Generation -- 2.3 Categorical Encoders Evaluation -- 2.4 Distribution -- 3 Experimental Results -- 4 Conclusions -- References -- Shortest Reducts Versus Shortest Constructs -- 1 Introduction -- 2 Basic Definitions -- 3 Experimental Evaluation -- 3.1 Experiments with Data Sets Without Noise -- 3.2 Experiments with Noise-Distorted Data Sets -- 4 Conclusions -- References -- Diversity in Genetic Algorithms in the Generation of School Schedules -- 1 Introduction -- 2 Class Schedule Generation Problem -- 3 Genetic Algorithms -- 3.1 Adaptability Function -- 4 Diversity in the Population -- 4.1 Hamming Distance -- 4.2 Jaccard's Similarity Index -- 4.3 Euclidean Distance -- 4.4 Manhattan Distance -- 5 Experimental Setup -- 6 Results -- 7 Conclusions -- References -- Multiobjective Assignment of Citizens to INE Service Modules Using NSGA-II: An Efficient Optimization Approach -- 1 Introduction -- 1.1 Solution Proposal -- 1.2 Related Work -- 2 Methodology -- 2.1 Methodological Framework -- 3 Experimentation -- 3.1 Model Formulation -- 4 Results Analysis -- 5 Conclusions and Future Work -- References -- Feature Engineering for Music/Speech Detection in Costa Rica Radio Broadcast -- 1 Introduction -- 1.1 Related Work -- 1.2 Data and Feature Extraction -- 2 Individual Feature Selection -- 2.1 Low Variance -- 2.2 Lasso -- 2.3 Decision Trees -- 2.4 Principal Component Analissis (PCA) -- 2.5 Mean Absolute Difference -- 2.6 Dispersion Ratio -- 3 Pairwise Feature Selection -- 3.1 Chi-Square Test -- 3.2 Pearson Correlation -- 4 Methodology -- 5 Results and Discussion -- 6 Conclusion -- References -- Towards a Novel Approach for Knowledge Base Population Using Distant Supervision -- 1 Introduction -- 2 Related Work -- 3 Notations -- 4 Proposal -- 4.1 Proposed f Function -- 4.2 Function g Proposed.
5 Experiments -- 5.1 Results -- 6 Conclusions -- References -- Mapping Activities onto a Two-Dimensional Emotions Model for Dog Emotion Recognition Using Inertial Data -- 1 Introduction -- 2 Related Work -- 3 Methodology -- 3.1 Data Collection -- 3.2 Materials -- 3.3 Feature Engineering -- 3.4 Classification -- 4 Results -- 5 Discussion -- 6 Conclusion -- References -- An Exploratory Study on Machine-Learning-Based Hyper-heuristics for the Knapsack Problem -- 1 Introduction -- 2 Background and Related Work -- 3 Solution Approach -- 3.1 The Features -- 3.2 The Heuristics -- 3.3 The KP Instances -- 3.4 Performance Metrics -- 3.5 Using Machine Learning to Power Hyper-heuristics -- 4 Experimental Results -- 4.1 Analysis of the Success Rate -- 4.2 Analysis of the Normalized Profit -- 5 Conclusion and Future Work -- References -- Computer Vision -- Pattern Recognition of Pupillary Reflex Dynamics to Isoluminescent RGB Chromatic Stimuli -- 1 The Pupil -- 2 Color Vision -- 3 Pupil Detection, Pattern Recognition and Tracking -- 4 Instrumentation -- 5 Experimental Results -- 6 Conclusions and Future Work -- References -- On the Minimal Perimeter Polygon for Digital Objects in the Triangular Tiling -- 1 Introduction -- 2 Preliminaries -- 3 Minimum

Perimeter Polygon for Objects in Triangular Tilings -- 4 Canonical Boundary Paths from Boundary Tracing -- 5 MPP Algorithm for Objects with Simple Boundary Paths, in a Triangular Tiling -- 6 Conclusions -- References -- 3BUGS: Representing Building Geometries Extracted from Point Clouds -- 1 Introduction -- 2 Photogrammetric Point Clouds -- 3 3BUGS Template Development -- 4 Building Generation -- 4.1 Manual Building Modeling -- 4.2 Procedural Building Modeling -- 5 Results and Discussion -- 6 Conclusions -- References -- Front-to-Bird's-Eye-View Transformation for Autonomous Vehicles: A Class Imbalance-Based Approach.

1 Introduction -- 2 Methodology -- 2.1 Dataset -- 2.2 Layers-Based Data Augmentation -- 2.3 Models -- 3 Results and Discussion -- 3.1 Weighted Loss-Based Models Performance -- 3.2 Model Performance with the Layered Map Augmentation Method -- 3.3 Generalization of the Models on Unseen Scenarios -- 4 Conclusions and Future Work -- References -- Evaluating the Effectiveness of an AI Model with Transfer of Learning in the Educational Attendance Record -- 1 Introduction -- 2 Database Construction -- 3 Training Through Transfer Learning -- 4 Development of Web Application -- 5 Results -- 6 Conclusions and Future Work -- References -- Multimodal-Attention Fusion for the Detection of Questionable Content in Videos -- 1 Introduction -- 2 Related Work -- 2.1 Analyzing Questionable Content -- 2.2 Multimodal Cross-Attention -- 3 Comic Mischief Dataset -- 4 Multimodal Attention-Head Fusion -- 4.1 Reference Model -- 4.2 Parallel Cross-Attention -- 5 Experiments and Results -- 5.1 Evaluation of Detection Performance -- 5.2 Qualitative Analysis -- 6 Conclusions -- References -- Optimization of Color Dominance Factor by Greedy Algorithm for Leaves and Fruit Segmentation of Tomato Plants -- 1 Introduction -- 2 Method -- 2.1 Color Dominance Algorithm Segmentation -- 2.2 Metrics Performance -- 2.3 Dataset -- 2.4 Greedy Algorithm Proposed -- 3 Results -- 3.1 Comparison with CNN PSPNet Segmentation -- 4 Conclusions and Upcoming Work -- References -- A Robust Content Identification System for Picture-In-Picture Attack Detection Using Trainable Background Removal and Perceptual Hashing Functions -- 1 Introduction -- 2 Related Work -- 3 Methodology -- 3.1 System Description -- 4 Experiments and Results -- 4.1 Data Building -- 4.2 Image Detection Model Training -- 4.3 Cutting Data -- 4.4 Background Removal -- 4.5 Comparing Hashes -- 4.6 Results -- 5 Conclusion -- References.

Medical Applications of Pattern Recognition -- Detection of Depression Symptoms Through Unsupervised Learning -- 1 Introduction -- 2 Related Work -- 3 Solution Proposal -- 3.1 Data Collection -- 3.2 Exploratory Data Analysis -- 3.3 Implementation of Unsupervised Learning Algorithms -- 3.4 Silhouette Coefficient -- 4 Results -- 4.1 Survey Application -- 4.2 Exploratory Data Analysis -- 4.3 Experimental Results -- 5 Conclusions -- References -- The Role of California Fires in Predicting Valley Fever -- 1 Introduction -- 1.1 Valley Fever Background -- 1.2 Previous Models -- 1.3 Environmental Data -- 2 Methods -- 2.1 Long Short-Term Memory Approach -- 3 Results -- 4 Conclusion -- References -- Recognition of Leukemic Retinopathy Using Knowledge of Diabetic Retinopathy -- 1 Introduction -- 2 Related Work -- 3 Characteristics of the Dataset Used -- 3.1 Dataset -- 3.2 Distribution of the Dataset -- 3.3 Comparison of Lesion Characteristics in Retinopathies -- 4 Proposed Methodology -- 4.1 General Outline of the Proposal -- 4.2 Transfer Learning -- 4.3 Performance Metrics -- 4.4 Integration of the Pre-trained Model in the Proposed Solution -- 5 Results -- 6 Discussion -- 7 Conclusions and Future Work -- References -- Classification of Breast Lesions Using

Mammary Sinograms and Deep Learning -- 1 Introduction -- 2 Related Work -- 3 Method -- 3.1 Model Selection -- 3.2 Computer Equipment -- 3.3 Databases -- 3.4 Preprocessing -- 4 Results -- 5 Discussion -- 6 Conclusion -- References -- Ultrasound Bone Surface Segmentation for Hip Joint Arthroscopy: Evaluating a Local Phase-Based and a Rigid Object Filtering in a Simulated Environment -- 1 Introduction -- 2 Material and Methods -- 2.1 Frequency Domain Processing -- 2.2 Bone Surface Detection -- 3 Results -- 4 Discussion -- 5 Conclusions -- References.

Comparison of CNNs and ViTs for the Detection of Human Skin Lesions.
