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Nota di contenuto	-- Pattern Recognition and Machine Learning Techniques. -- Detection of Concept Drift in Bayesian Networks. -- Hausdorff Distance Optimization in Low-Density Point Clouds. -- Extremal Topologies for the Merrifield-Simmon Index on Dendrimers in Drug Delivery. -- Tailoring Bounded Instances for the Job Shop Scheduling Problem through Unified Particle Swarm Optimization. -- Empirical Comparison of Density-Based Clustering Algorithms for Large Datasets. -- Exact versus Approximate Patterns in Dissimilarity-Based Graph Embedding for Supervised Classification. -- Optimized Early Detection of Bark Beetles through Automated Segmentation and Machine Learning Classification. -- Handling Constraints in Clustering via Multi-Objective Evolutionary Algorithms. -- Analysis of Childrens Emotions

in Sketches Using Classical and Deep Learning Approaches. -- Heuristic-Based Optimization Using Elementary Cellular Automata: A Preliminary Study on the Knapsack Problem. -- Language Processing and Recognition. -- Dynamic Strategy for Recognizing the Mexican Sign Language Alphabet: Bridging Static and Dynamic Signs. -- Classification of Suicidal Texts Based on Emotional Change Detection Using LSTM. -- Synthetic Corpus of Emotions for Detection of Depression in Social Networks. -- Deep Neural Networks and Log-Mel Spectrogram for Emotion Recognition through Spanish Speech. -- Phonetic Spectral Image Representation for Yuhmu Language Analysis. -- Multi-Label Classification of Texts on Harassment and Discrimination with Neural Networks. -- Exploring a Multimodal Language Model for Auto-Captioning and Visual Question Answering in Histopathology Images. -- Computer Vision. -- Automatic Counting System in a Region of Interest from Videos Taken by Drones. -- Real-Time Image Analysis Using a Depth Camera for UAV Applications. -- Extending Reference-Based Texture Transformers for Image Dehazing. -- Vision-Based Formation Control Using Visual Servoing and Virtual Homographies. -- Laser Beam Centroid Detection for Automatic Spatial Filtering: A Comparative Analysis of Machine Vision Algorithms. -- Towards End-To-End Visual Odometry for Unstructured Agricultural Environments. -- Medical Applications of Pattern Recognition. -- Early Detection of Acute Myocardial Infarction (AMI) Risk Using Optimized Machine Learning Models. -- Deep Learning Approaches for Glaucoma Detection: A Comparative Study of CNN Models on Retinal Fundus Images. -- Classification of CFD-Generated Aortic Flow Images Using Neural Networks. -- Explainable Diagnosis of Bacterial Vaginosis: A Hierarchical Approach Based on XAI. -- Reinforcement Learning. -- Evaluating Deep Reinforcement Learning for Robotic Navigation. -- Determining Optimal Population Management with Reinforcement Learning. -- Deep Learning and Neural Networks. -- Hybrid Deep Learning Architecture for Automatic Detection of Coronary Stenosis in X-Ray Videos. -- Predicting Crowd Motion with Diffusion Models. -- Enhancing Perceptron Learning through Bayesian Optimisation and Cross-Validation. -- Facial Expression Recognition Using Light Weight CNNs and Soft Voting. -- Automatic Segmentation of the Major Temporal Arcade Using U-Net Attention Architecture. -- A Lightweight Diffusion Model with Modified Sampler. -- Unsupervised Emotion Analysis in Mexican Popular Music Lyrics Using a Bert-Based Model.

## Sommario/riassunto

This book constitutes the proceedings of the 17th Mexican Conference on Pattern Recognition, MCPR 2025, held in Guanajuato, Mexico, during June 25–28, 2025. The 36 full papers presented in this volume were carefully reviewed and selected from 70 submissions. They are grouped into the following topics: Pattern Recognition and Machine Learning Techniques; Language Processing and Recognition; Computer Vision; Medical Applications of Pattern Recognition; Reinforcement Learning; Deep Learning and Neural Networks.