

Image Processing Techniques and its Applications in Computer Vision and Artificial Intelligence

Chapter	Title	Page No.
1	Foundations of Image Processing Understanding Pixels Color Models and Image Formats	36
2	Image Acquisition and Preprocessing Techniques for Noise Reduction and Enhancement in Digital Images	29
3	Advanced Feature Extraction Techniques Using Local Binary Patterns Histogram of Oriented Gradients and SIFT	27
4	Morphological Image Processing Techniques for Shape Analysis Object Recognition and Image Reconstruction	29
5	Comparative Analysis of Image Segmentation Methods From Thresholding and Clustering to Convolutional Neural Networks	31
6	Color Image Processing Techniques for Effective Color Enhancement Color Space Conversion and Color Constancy	28
7	Texture Analysis Techniques Using Statistical Measures Structural Approaches and Machine Learning Methods	30
8	Advanced Image Filtering Techniques for Smoothing Sharpening and Edge Detection in Various Applications	27
9	Deep Learning Architectures for Image Processing Including Convolutional Neural Networks and Generative Adversarial Networks	35
10	Object Detection and Recognition Techniques Utilizing Deep Learning Frameworks for Real-Time Applications	30
11	Image Classification Techniques Leveraging Support Vector Machines Decision Trees and Neural Networks	36
12	Image Registration Techniques for Multi-Modal Imaging Including Feature-Based and Intensity-Based Methods	27
13	Augmented Reality Techniques for Image Processing in Interactive Systems and Gaming Applications	31
14	Image Processing Techniques for Autonomous Vehicles Including Lane Detection and Obstacle Avoidance	30
15	Video Processing Techniques for Motion Detection Object Tracking and Real-Time Analysis in Surveillance	31