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Nota di contenuto	Part I - Image Preprocessing Algorithms -- Chap. 1 - Improved Digital Image Enhancement Filters Based on Type-2 Neuro-Fuzzy Techniques (Mehmet Emin Yüksel, Alper Batürk) -- Chap. 2 - Locally-Equalized Image Contrast Enhancement Using PSO-Tuned Sectorized Equalization (N.M. Kwok, Q.P. Ha, G. Fang, D. Wang, S.Y. Chen) -- Chap. 3 - Hybrid BBO-DE Algorithms for Fuzzy Entropy Based Thresholding (Ilhem Boussaïd, Amitava Chatterjee, Patrick Siarry, Mohamed Ahmed-Nacer) -- Chap. 4 - A Genetic Programming Approach for Image Segmentation (Hugo Alberto Perlin, Heitor Silvério Lopes) -- Part II - Image Compression Algorithms -- Chap. 5 - Fuzzy Clustering-Based Vector Quantization for Image Compression (George E. Tsekouras, Dimitrios M. Tsolakis) -- Chap. 6 - Layers Image Compression and Reconstruction by Fuzzy Transforms (Ferdinando Di Martino, Salvatore Sessa) -- Chap. 7 - Modified Bacterial Foraging Optimization Technique for Vector Quantization-Based Image Compression (Nandita Sanyal, Amitava Chatterjee, Sugata Munshi) -- Part III - Image Analysis Algorithms -- Chap. 8 - A Fuzzy-Condition-Sensitive Hierarchical Algorithm for Approximate Template Matching in Dynamic Image

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Sommario/riassunto

Computational intelligence based techniques have firmly established themselves as viable, alternate, mathematical tools for more than a decade. They have been extensively employed in many systems and application domains, among these signal processing, automatic control, industrial and consumer electronics, robotics, finance, manufacturing systems, electric power systems, and power electronics. Image processing is also an extremely potent area which has attracted the attention of many researchers who are interested in the development of new computational intelligence-based techniques and their suitable applications, in both research problems and in real-world problems. Part I of the book discusses several image preprocessing algorithms; Part II broadly covers image compression algorithms; Part III demonstrates how computational intelligence-based techniques can be effectively utilized for image analysis purposes; and Part IV shows how pattern recognition, classification and clustering-based techniques can be developed for the purpose of image inferencing. The book offers a unified view of the modern computational intelligence techniques required to solve real-world problems and it is suitable as a reference for engineers, researchers and graduate students.
