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	Autore	Oliva Diego
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	Nota di contenuto	Introduction -- Optimization -- Metaheuristic optimization -- Image processing -- Image Segmentation using metaheuristics -- Multilevel thresholding for image segmentation based on metaheuristic Algorithms -- Otsu's between class variance and the tree seed algorithm -- Image segmentation using Kapur's entropy and a hybrid optimization algorithm -- Tsallis entropy for image thresholding -- Image segmentation with minimum cross entropy -- Fuzzy entropy approaches for image segmentation -- Image segmentation by gaussian mixture -- Image segmentation as a multiobjective optimization problem -- Clustering algorithms for image segmentation -- Contextual information in image thresholding.
	Sommario/riassunto	This book presents a study of the most important methods of image segmentation and how they are extended and improved using metaheuristic algorithms. The segmentation approaches selected have been extensively applied to the task of segmentation (especially in

thresholding), and have also been implemented using various metaheuristics and hybridization techniques leading to a broader understanding of how image segmentation problems can be solved from an optimization perspective. The field of image processing is constantly changing due to the extensive integration of cameras in devices; for example, smart phones and cars now have embedded cameras. The images have to be accurately analyzed, and crucial pre-processing steps, like image segmentation, and artificial intelligence, including metaheuristics, are applied in the automatic analysis of digital images. Metaheuristic algorithms have also been used in various fields of science and technology as the demand for new methods designedto solve complex optimization problems increases. This didactic book is primarily intended for undergraduate and postgraduate students of science, engineering, and computational mathematics. It is also suitable for courses such as artificial intelligence, advanced image processing, and computational intelligence. The material is also useful for researches in the fields of evolutionary computation, artificial intelligence, and image processing.