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Disciplina	519
Soggetti	Applied mathematics Engineering mathematics Optical data processing Signal processing Image processing Speech processing systems Numerical analysis Radiology Applications of Mathematics Image Processing and Computer Vision Signal, Image and Speech Processing Numerical Analysis Imaging / Radiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Part 1: Inverse Problems -- Tomography -- MR DTI -- Hybrid Methods -- Nonlinear Inverse Problems -- EIT -- Scattering -- Sampling Methods -- Expansion Methods -- Regularization Methods for Ill-Posed Problems -- Iterative Solution Methods -- Wave Phenomena -- Seismic -- Radar -- Ultrasound -- Part 2: Signal and Image Processing -- Morphological Image Processing -- Learning, Classification, Data Mining -- Partial Differential Equations -- Variational Methods for Image Analysis -- Level Set Methods Including Fast Marching Methods -- Segmentation -- Registration, Optical Flow

-- Duality and Convex Minimization -- Spline, Statistics -- Wavelets --
Fourier Analysis -- Compressed Sensing -- Geometry Processing --
Compression -- Computational Geometry -- Shape Spaces -- PDEs and
Variational Methods on Manifold -- References -- Subject Index.

Sommario/riassunto

The Handbook of Mathematical Methods in Imaging provides a comprehensive treatment of the mathematical techniques used in imaging science. The material is grouped into two central themes, namely, Inverse Problems (Algorithmic Reconstruction) and Signal and Image Processing. Each section within the themes covers applications (modeling), mathematics, numerical methods (using a case example) and open questions. Written by experts in the area, the presentation is mathematically rigorous. The entries are cross-referenced for easy navigation through connected topics. Available in both print and electronic forms, the handbook is enhanced by more than 150 illustrations and an extended bibliography. It will benefit students, scientists and researchers in applied mathematics. Engineers and computer scientists working in imaging will also find this handbook useful.
