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Descrizione fisica	1 online resource (XVI, 266 p. 177 illus., 123 illus. in color.)
Disciplina	006.6 006.37
Soggetti	Computer vision Data mining Global analysis (Mathematics) Algorithms Artificial intelligence Image Processing and Computer Vision Data Mining and Knowledge Discovery Global Analysis and Analysis on Manifolds Artificial Intelligence
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Introduction -- High Snr Hyperspectral Night Vision Image Acquisition with Multiplexing -- Multi-Visual Task Based on Night Vision Data Structure and Feature Analysis -- Feature Classification Based on Manifold Dimension Reduction for Night Vision Images -- Night Vision Data Classification Based on Sparse Representation and Random Subspace -- Learning Based Night Vision Image Recognition and Object Detection -- Non-Learning Based Motion Cognitive Detection and Self-Adaptable Tracking for Night Vision Videos -- The Colorization of Low Light Level Image Based on the Rule Mining.
Sommario/riassunto	This book systematically analyses the latest insights into night vision imaging processing and perceptual understanding as well as related theories and methods. The algorithm model and hardware system provided can be used as the reference basis for the general design,

algorithm design and hardware design of photoelectric systems. Focusing on the differences in the imaging environment, target characteristics, and imaging methods, this book discusses multi-spectral and video data, and investigates a variety of information mining and perceptual understanding algorithms. It also assesses different processing methods for multiple types of scenes and targets. Taking into account the needs of scientists and technicians engaged in night vision optoelectronic imaging detection research, the book incorporates the latest international technical methods. The content fully reflects the technical significance and dynamics of the new field of night vision. The eight chapters cover topics including multispectral imaging, Hadamard transform spectrometry; dimensionality reduction, data mining, data analysis, feature classification, feature learning; computer vision, image understanding, target recognition, object detection and colorization algorithms, which reflect the main areas of research in artificial intelligence in night vision. The book enables readers to grasp the novelty and practicality of the field and to develop their ability to connect theory with real-world applications. It also provides the necessary foundation to allow them to conduct research in the field and adapt to new technological developments in the future.
