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	Nota di contenuto	Cover -- Half-Title Page -- Title Page -- Copyright Page -- Contents -- Introduction to Graph Spectral Image Processing -- I.1. Introduction

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Sommario/riassunto

Graph spectral image processing is the study of imaging data from a graph frequency perspective. Modern image sensors capture a wide range of visual data including high spatial resolution/high bit-depth 2D images and videos, hyperspectral images, light field images and 3D point clouds. The field of graph signal processing - extending traditional Fourier analysis tools such as transforms and wavelets to handle data on irregular graph kernels - provides new flexible computational tools to analyze and process these varied types of imaging data. Recent methods combine graph signal processing ideas with deep neural network architectures for enhanced performances, with robustness and smaller memory requirements. The book is divided into two parts. The first is centered on the fundamentals of graph signal processing theories, including graph filtering, graph learning and graph neural networks. The second part details several imaging applications using graph signal processing tools, including image and video compression, 3D image compression, image restoration, point cloud processing, image segmentation and image classification, as well as the use of graph neural networks for image processing.
