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Descrizione fisica	1 online resource (XVII, 238 p. 70 illus., 36 illus. in color.)
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Disciplina	515.7
Soggetti	Functional analysis Numerical analysis Applied mathematics Engineering mathematics Statistics Signal processing Image processing Speech processing systems Functional Analysis Numerical Analysis Applications of Mathematics Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences Signal, Image and Speech Processing
Lingua di pubblicazione	Inglese
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Nota di contenuto	Chapter 1. Preliminaries -- Chapter 2. Wavelet Packets -- Chapter 3. Convergence of Wavelet Packet Series -- Chapter 4. Function Spaces and Wavelet Packets -- Chapter 5. Applications in Signal Processing -- Chapter 6. Applications in Image Processing.
Sommario/riassunto	This book presents the basic concepts of functional analysis, wavelet analysis and thresholding. It begins with an elementary chapter on preliminaries such as basic concepts of functional analysis, a brief tour of the wavelet transform, Haar scaling functions and function space,

wavelets, symlets wavelets and coiflets wavelets. In turn, Chapters 2 and 3 address the construction of wavelet packets, selected results on wavelet packets, band-limited wavelet packets, characterisations of wavelet packets, multiresolution analysis (MRA) wavelet packets, pointwise convergence, the convergence of wavelet packet series and convolution bounds. Chapter 4 discusses characterisations of function spaces like Lebesgue spaces, Hardy spaces and Sobolev spaces in terms of wavelet packets, while Chapter 5 is devoted to applications of wavelets and wavelet packets in speech denoising and biomedical signals. In closing, Chapter 6 highlights applications of wavelets and wavelet packets in image denoising.

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