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	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.