Record Nr. UNINA9910392748303321 Autore Gan Woon Siong **Titolo** Signal Processing and Image Processing for Acoustical Imaging [[electronic resource] /] / by Woon Siong Gan Singapore:,: Springer Singapore:,: Imprint: Springer,, 2020 Pubbl/distr/stampa **ISBN** 981-10-5550-5 Edizione [1st ed. 2020.] 1 online resource (87 pages): illustrations Descrizione fisica Disciplina 620.28 Soggetti Signal processing Image processing Speech processing systems Acoustical engineering Acoustics Optical data processing Signal, Image and Speech Processing **Engineering Acoustics** Image Processing and Computer Vision Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto 1.Two-Dimensional Transform, FFT & its Applications -- 2.Discrete Hilbert Transform, Z Transform -- 3.Deconvolution -- 4.Higher Order Statistics -- 5. Wavelets -- 6. Neural Networks -- 7. Digital Signal Processing-Homomorphic Signal Processing -- 8.Digital Filter Design -- 9. Array Signal Processing -- 10. Image Enhancement & Optimization -- 11.Image Restoration -- 12.Image Compression -- 13.Conclusions. Sommario/riassunto This book discusses the applications of signal and image processing in acoustical imaging. It first describes the basic tools involved – the 2D transform, fast Fourier transform (FFT) and applications, and deconvolution – before introducing readers to higher-order statistics, wavelets, and neural networks. It also addresses the important topic of digital signal processing, focusing on the example of homomorphic signal processing. The book then details the design of digital filters and array signal processing, and lastly examines applications in image

processing: image enhancement and optimization, image restoration, and image compression.