1. Record Nr. UNINA9910823686603321 Autore Tang Yuan Yan Titolo Document analysis and recognition with wavelet and fractal theories [[electronic resource] /] / Yuan Yan Tang Singapore, : World Scientific Pub. Co., 2012 Pubbl/distr/stampa 981-4401-01-3 **ISBN** Edizione [1st ed.] Descrizione fisica 1 online resource (373 p.) Series in machine perception and artificial intelligence;; v. 79 Collana Disciplina 515 515.2433 Soggetti Wavelets (Mathematics) Fractals Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Contents; Preface; Chapter 1 Basic Concepts of Document Analysis and Understanding; 1.1 Introduction.; 1.2 Basic Model of Document Processing; 1.3 Document Structures; 1.3.1 Strength of Structure; 1.3.2 Geometric Structure; 1.3.2.1 Geometric Complexity; 1.3.3 Logical Structure; 1.4 Document Analysis; 1.4.1 Hierarchical Methods; 1.4.1.1 Top-Down Approach; 1.4.1.2 Bottom-Up Approach; 1.4.2 No-HierarchicalMethods; 1.4.2.1 Modified Fractal Signature; 1.4.2.2 Order Stochastic Filtering: 1.4.3 Web Document Analysis: 1.5 Document Understanding 1.5.1 Document Understanding Based on Tree Transformation 1.5.2 Document Understanding Based on Formatting Knowledge: 1.5.3 Document Understanding Based on Description Language; 1.6 Form Document Processing; 1.6.1 Characteristics of Form Documents; 1.6.2 Wavelet Transform Approach; 1.6.3 Approach Based on Form Description Language: 1.6.4 Form Document Processing Based on Form Registration; 1.6.5 Form Document Processing System; 1.7 Character Recognition and Document Image Processing; 1.7.1 Handwritten and **Printed Character Recognition** 1.7.1.1 Extracting Multiresolution Features in Recognition of Handwritten Numerals with 2-D Haar Wavelet1.7.1.2 Recognition of

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## Sommario/riassunto

Many phenomena around the research in document analysis and understanding are much better described through the powerful multiscale signal representations than by traditional ways. From this perspective, the recent emergence of powerful multiscale signal representations in general and fractal/wavelet basis representations in particular, has been particularly timely. Indeed, out of these theories arise highly natural and extremely useful representations for a variety of important phenomena in document analysis and understanding. This book presents both the development of these new approaches as