

Fractal And Wavelet Image Compression Techniques Spie Tutorial Texts In Optical Engineering Vol Tt40

Fractal analysis research is expanding into a variety of engineering domains. The strong potential of this work is now beginning to be seen in important applications in real industrial situations. Recent research progress has already led to new developments in domains such as signal processing and chemical engineering, and the major advances in fractal theory that underlie such developments are detailed here. New domains of applications are also presented, among them environmental science and rough surface analysis. Sections include multifractal analysis, iterated function systems, random processes, network traffic analysis, fractals and waves, image compression, and applications in physics. Fractals in Engineering emphasizes the connection between fractal analysis research and applications to industry. It is an important volume that illustrates the scientific and industrial value of this exciting field.

Scaling is a mathematical transformation that enlarges or diminishes objects. The technique is used in a variety of areas, including finance and image processing. This book is organized around the notions of scaling phenomena and scale invariance. The various stochastic models commonly used to describe scaling ? self-similarity, long-range dependence and multi-fractals ? are introduced. These models are compared and related to one another. Next, fractional integration, a mathematical tool closely related to the notion of scale invariance, is discussed, and stochastic processes with prescribed scaling properties (self-similar processes, locally self-similar processes, fractionally filtered processes, iterated function systems) are defined. A number of applications where the scaling paradigm proved fruitful are detailed: image processing, financial and stock market fluctuations, geophysics, scale relativity, and fractal time-space. In the 50 years since Mandelbrot identified the fractality of coastlines, mathematicians and physicists have developed a rich and beautiful theory describing the interplay between analytic, geometric and probabilistic aspects of the mathematics of fractals. Using classical and abstract analytic tools developed by Cantor, Hausdorff, and Sierpinski, they have sought to address fundamental questions: How can we measure the size of a fractal set? How do waves and heat travel on irregular structures? How are analysis, geometry and stochastic processes related in the absence of Euclidean smooth structure? What new physical phenomena arise in the fractal-like settings that are ubiquitous in nature?This book introduces background and recent progress on these problems, from both established leaders in the field and early career researchers. The book gives a broad introduction to several foundational techniques in fractal mathematics, while also introducing some specific new and significant results of interest to experts, such as that waves have infinite propagation speed on fractals. It contains sufficient introductory material that it can be read by new researchers or researchers from other areas who want to learn about fractal methods and results.

This book presents select proceedings of the International Conference on Future Learning Aspects of Mechanical Engineering (FLAME 2018). The book discusses interdisciplinary areas such as automobile engineering, mechatronics, applied and structural mechanics, bio-mechanics, biomedical instrumentation, ergonomics, biodynamic modeling, nuclear engineering, agriculture engineering, and farm machineries. The contents of the book will benefit both researchers and professionals.

Wavelet Image and Video Compression

Analysis and Probability

Fractals in Engineering

Proceedings of the Second International Conference on Computer Science, Engineering and Applications (ICCSEA 2012), May 25-27, 2012, New Delhi, India, Volume 1

Advances in Interdisciplinary Engineering

A Digital Signal Processing Approach

The two-volume set LNAI 5711 and LNAI 5712 constitutes the refereed proceedings of the 13th International Conference on Knowledge-Based Intelligent Information and Engineering Sysetms, KES 2009, held in Santiago de Chile in September 2009. The 153 revised papers presented were carefully reviewed and selected from numerous submissions. The topics covered are: fuzzy and neuro-fuzzy systems, agent systems, knowledge based and expert systems, miscellaneous generic intelligent systems topics, intelligent vision and image processing, knowledge management, ontologies and data mining, web intelligence, text and multimedia mining and retrieval, other advanced knowledge-based systems, innovations in chance discovery, advanced knowledge-based systems, multi-agent negotiation and coordination, innovations in intelligent systems, intelligent technology approach to management engineering, data mining and service science for innovation, knowledge-based systems for e-business, video surveillance, social networks, advanced engineering design techniques for adaptive systems, knowledge technology in learning support, advanced information system for supporting personal activity, design of intelligent society, knowledge-based interface systems, knowledge-based multi-criteria decision support, soft computing techniques and their applications, immunity-based systems. The book also includes three keynote speaker plenary presentations.

Abstract: "This report describes two seemingly distinct areas of work, wavelet analysis and fractal image compression. A review of these two areas is presented, a new algorithm outlined, and some results presented. Finally, some speculations concerning the future direction of this research is included."

This textbook is unique because of its in-depth treatment of the applications of wavelets and wavelet transforms to many areas, across many disciplines. The book is written to serve the needs of a one or two semester course at either the undergraduate or graduate level. The author uses a very simplified, accessible approach that de-emphasizes mathematical rigor. The presentation includes many diagrams to illustrate points being discussed and uses MATLAB for all of application code. The author reinforces concepts introduced in the book with easy to grasp review questions and problems, tailored to each specific chapter for better mastery of the subject matter. This book enables students to understand the fundamental concepts of wavelets and wavelet transforms, as well as how to use them for problem solutions in digital signal and image processing, mixed-signal testing, space applications, aerospace applications, biomedical, cyber security, homeland security and many other application areas. Provides textbook coverage of Wavelets and applications, suitable for one and two semester courses, either at the undergraduate or graduate level; Discusses many types of wavelets and their applications across many disciplines; Includes MATLAB code illustrations to simplify the understanding of the various applications; Uses many illustrations, figures, tables, and visual comparisons to simplify and clarify the various concepts of wavelets, wavelet transforms and the various application areas; Ends each chapter with review questions/answers, as well as exercises to reinforce and test concepts introduced; Solutions manual and PowerPoint slides for each chapter available for instructors.

This IMA Volume in Mathematics and its Applications FRACTALS IN MULTIMEDIA is a result of a very successful three-day minisymposium on the same title. The event was an integral part of the IMA annual program on Mathemat ics in Multimedia, 2000-2001. We would like to thank Michael F. Barnsley (Department of Mathematics and Statistics, University of Melbourne), Di etmar Saupe (Institut fUr Informatik, UniversiUit Leipzig), and Edward R. Vrscay (Department of Applied Mathematics, University of Waterloo) for their excellent work as organizers of the meeting and for editing the proceedings. We take this opportunity to thank the National Science Foundation for their support of the IMA. Series Editors Douglas N. Arnold, Director of the IMA Fadil Santosa, Deputy Director of the IMA v PREFACE This volume grew out of a meeting on Fractals in Multimedia held at the IMA in January 2001. The meeting was an exciting and intense one, focused on fractal image compression, analysis, and synthesis, iterated function systems and fractals in education. The central concerns of the meeting were to establish within these areas where we are now and to develop a vision for the future.

Adaptive Fractal Image Compression in the Spatial and Wavelet Domains

Select Proceedings of FLAME 2018

Advanced Hybrid Information Processing

Constrained Networks for Fractal Image Compression

A Hybrid Fractal-wavelet Transform Image Data Compression Algorithm

Scaling, Fractals and Wavelets

Traditional methods of image and video coding rely on linear transformations that focus primarily on high compression. With the increasing demand for digital imagery and video there is now a need for functionality of the compressed information. This dissertation develops a new framework for compression that uses a fractal wavelet method to break the imagery into shape, texture, color, and motion. With this new organization, image information is readily accessible to the user in compressed form. Based on this compression method, we then develop an object-oriented video format. Image analysts tend to break imagery into the categories of shape, texture, color, and motion. Thus, we begin our approach to image compression by finding mathematical methods that preserve shape and texture in an efficient manner. This new non-traditional method begins by using fractals. A fractal is an object which when observed at its smallest level of detail resembles the overall object itself. Some natural examples include ferns, snowflakes, clouds, and mountains. Recently, engineers have applied fixed point theory to describe a method of fractal image compression . Unfortunately fixed point theory only provides a partial description of fractal compression, since it says little about the spatial frequency structure behind the process.

Still Image Compression on Parallel Computer Architectures investigates the application of parallel-processing techniques to digital image compression. Digital image compression is used to reduce the number of bits required to store an image in computer memory and/or transmit it over a communication link. Over the past decade advancements in technology have spawned many applications of digital imaging, such as photo videotex, desktop publishing, graphics arts, color facsimile, newspaper wire phototransmission and medical imaging. For many other contemporary applications, such as distributed multimedia systems, rapid transmission of images is necessary. Dollar cost as well as time cost of transmission and storage tend to be directly proportional to the volume of data. Therefore, application of digital image compression techniques becomes necessary to minimize costs. A number of digital image compression algorithms have been developed and standardized. With the success of these algorithms, research effort is now directed towards improving implementation techniques. The Joint Photographic Experts Group (JPEG) and Motion Photographic Experts Group(MPEG) are international organizations which have developed digital image compression standards. Hardware (VLSI chips) which implement the JPEG image compression algorithm are available. Such hardware is specific to image compression only and cannot be used for other image processing applications. A flexible means of implementing digital image compression algorithms is still required. An obvious method of processing different imaging applications on general purpose hardware platforms is to develop software implementations. JPEG uses an 8 × 8 block of image samples as the basic element for compression. These blocks are processed sequentially. There is always the possibility of having similar blocks in a given image. If similar blocks in an image are located, then repeated compression of these blocks is not necessary. By locating similar blocks in the image, the speed of compression can be increased and the size of the compressed image can be reduced. Based on this concept an enhancement to the JPEG algorithm is proposed, called Bock Comparator Technique (BCT).

Still Image Compression on Parallel Computer Architectures is designed for advanced students and practitioners of computer science. This comprehensive reference provides a foundation for understanding digital image compression techniques and parallel computer architectures. Digital image business applications are expanding rapidly, driven by recent advances in the technology and breakthroughs in the price and performance of hardware and firmware. This ever increasing need for the storage and transmission of images has in turn driven the technology of image compression: image data rate reduction to save storage space and reduce transmission rate requirements. Digital image compression offers a solution to a variety of imaging applications that require a vast amount of data to represent the images, such as document imaging management systems, facsimile transmission, image archiving, remote sensing, medical imaging, entertainment, HDTV, broadcasting, education and video teleconferencing. Digital Image Compression: Algorithms and Standards introduces the reader to compression algorithms, including the CCITT facsimile standards T.4 and T.6, JBIG, CCITT H.261 and MPEG standards. The book provides comprehensive explanations of the principles and concepts of the algorithms, helping the readers' understanding and allowing them to use the standards in business, product development and R&D. Audience: A valuable reference for the graduate student, researcher and engineer. May also be used as a text for a course on the subject.

The subject of wavelet analysis and fractal analysis is fast developing and has drawn a great deal of attention in varied disciplines of science and engineering. Over the past couple of decades, wavelets, multiresolution, and multifractal analyses have been formalized into a thorough mathematical framework and have found a variety of applications w

Fractals in Multimedia

Examining Fractal Image Processing and Analysis

Theory and Application

From Theory to Industrial Applications

13th International Conference, KES 2009, Santiago, Chile, September 28-30, 2009, Proceedings

Hybrid Fractal/wavelet Methods for Image Compression

Although it's true that image compression research is a mature field, continued improvements in computing power and image representation tools keep the field spry. Faster processors enable previously intractable compression algorithms and schemes, and certainly the demand for highly portable high-quality images will not abate. Document and Image Compression highlights the current state of the field along with the most probable and promising future research directions for image coding. Organized into three broad sections, the book examines the currently available techniques, future directions, and techniques for specific classes of images. It begins with an introduction to multiresolution image representation, advanced coding and modeling techniques, and the basics of perceptual image coding. This leads to discussions of the JPEG 2000 and JPEG-LS standards, lossless coding, and fractal image compression. New directions are highlighted that involve image coding and representation paradigms beyond the wavelet-based framework, the use of redundant dictionaries, the distributed source coding paradigm, and novel data-hiding techniques. The book concludes with techniques developed for classes of images where the general-purpose algorithms fail, such as for binary images and shapes, compound documents, remote sensing images, medical images, and VLSI layout image data. Contributed by international experts, Document and Image Compression gathers the latest and most important developments in image coding into a single, convenient, and authoritative source.

Fractal and Wavelet Image Compression TechniquesSPIE Press

This book is intended to serve as an invaluable reference for anyone concerned with the application of wavelets to signal processing. It has evolved from material used to teach "wavelet signal processing" courses in electrical engineering departments at Massachusetts Institute of Technology and Tel Aviv University, as well as applied mathematics departments at the Courant Institute of New York University and École Polytechnique in Paris. Provides a broad perspective on the principles and applications of transient signal processing with wavelets Emphasizes intuitive understanding, while providing the mathematical foundations and description of fast algorithms Numerous examples of real applications to noise removal, deconvolution, audio and image compression, singularity and edge detection, multifractal analysis, and time-varying frequency measurements Algorithms and numerical examples are implemented in Wavelab, which is a Matlab toolbox freely available over the Internet Content is accessible on several level of complexity, depending on the individual reader's needs New to the Second Edition Optical flow calculation and video compression algorithms Image models with bounded variation functions Bayes and Minimax theories for signal estimation 200 pages rewritten and most illustrations redrawn More problems and topics for a graduate course in wavelet signal processing, in engineering and applied mathematics

This volume presents the articles accepted for the 8th International Conference on Computer Analysis of Images and Patterns (CAIP'99), held in Ljubljana, Slovenia, 1{3 September 1999. The CAIP series of conferences started 14 years ago in Berlin. The series served initially as a forum for meetings between sci- tists from Western and Eastern-bloc countries. Political circumstances have changed dramatically since the inception of the conference and such contacts are fortunately no longer subject to abstrade. While CAIP conferences are still rooted in Central Europe, they now attract participants from all over the world. We received 120 submissions, which went through a thorough double blind review process by the program committee members who, had the option of - signing additional reviewers. The nal program consists of 47 oral and 27 poster presentations, with authors from 25 di erent countries. The proceedings also include 2 of the 5 invited lectures given at the conference. In the name of the steering committee we would like to thank the program committee members and the additional reviewers for their time and e orts. Our thanks also go to the authors for their cooperation and meeting of all deadlines.

VLSI Design and Test

Fractal and Wavelet Image Compression Techniques

5th EAI International Conference, ADHIP 2021, Virtual Event, October 22-24, 2021, Proceedings, Part I.

Advances in Computer Science, Engineering & Applications

A Wavelet Fractal Method for Content Based Image and Video Compression

Still Image Compression on Parallel Computer Architectures

Interest in image compression for internet and other multimedia applications has spurred research into compression techniques that will increase storage capabilities and transmission speed. This tutorial provides a practical guide to fractal and wavelet approaches--two techniques with exciting potential. It is intended for scientists, engineers, researchers, and students. It provides both introductory information and implementation details. Three Windows-compatible software systems are included so that readers can explore the new technologies in depth. Complete C/C++ source code is provided, enabling readers to go beyond the accompanying software. The mathematical presentation is accessible to advanced undergraduate or beginning graduate students in technical fields.

Combines analysis and tools from probability, harmonic analysis, operator theory, and engineering (signal/image processing) Interdisciplinary focus with hands-on approach, generous motivation and new pedagogical techniques Numerous exercises reinforce fundamental concepts and hone computational skills Separate sections explain engineering terms to mathematicians and operator theory to engineers Fills a gap in the literature

This informative, new resource presents the first comprehensive treatment of silicon-germanium heterojunction bipolar transistors (SiGe HBTs). It offers you a complete, from-the-ground-up understanding of SiGe HBT devices and technology, from a very broad perspective. The book covers motivation, history, materials, fabrication, device physics, operational principles, and circuit-level properties associated with this new cutting-edge semiconductor device technology. Including over 400 equations and more than 300 illustrations, this hands-on reference shows you in clear and concise language how to design, simulate, fabricate, and measure a SiGe HBT. This thesis presents two novel coding schemes and applications to both two- and three-dimensional image compression. Image compression can be viewed as methods of functional approximation under a constraint on the amount of information allowable in specifying the approximation. Two methods of approximating functions are discussed: Iterated function systems (IFS) and wavelet-based approximations. IFS methods approximate a function by the fixed point of an iterated operator, using consequences of the Banach contraction mapping principle. Natural images under a wavelet basis have characteristic coefficient magnitude decays which may be used to aid approximation. The relationship between quantization, modelling, and encoding in a compression scheme is examined. Context based adaptive arithmetic coding is described. This encoding method is used in the coding schemes developed. A coder with explicit separation of the modelling and encoding roles is presented: an embedded wavelet bitplane coder based on hierarchical context in the wavelet coefficient trees. Fractal (spatial IFSM) and fractal-wavelet (coefficient tree), or IFSW, coders are discussed. A second coder is proposed, merging the IFSW approaches with the embedded bitplane coder. Performance of the coders, and applications to two- and three-dimensional images are discussed. Applications include two-dimensional still images in greyscale and colour, and three-dimensional streams (video).

Innovation Excellence Towards Humanistic Technology (In 3 Volumes)

Development of Hybrid Image Compression Methods Incorporating Fractal, DCT (JPEG), and Wavelet (JPEG2000) Components

8th International Conference, CAIP'99 Ljubljana, Slovenia, September 1-3, 1999 Proceedings

Wavelets and Wavelet Transform Systems and Their Applications

Document and Image Compression

This two-volume set CCIS 166 and CCIS 167 constitutes the refereed proceedings of the International Conference on Digital Information and Communication Technology and its Applications, DICTAP 2011, held in Dijon, France, in June 2010. The 128 revised full papers presented in both volumes were carefully reviewed and selected from 330 submissions. The papers are organized in topical sections on Web applications; image processing; visual interfaces and user experience; network security; ad hoc network; cloud computing; Data Compression; Software Engineering; Networking and Mobiles; Distributed and Parallel processing; social networks; ontology; algorithms; multimedia; e-learning; interactive environments and emergent technologies for e-learning; signal processing; information and data management.

This two-volume set constitutes the post-conference proceedings of the 5th EAI International Conference on Advanced Hybrid Information Processing, ADHIP 2021, held in October 2021. Due to COVID-19 the conference was held virtually. The 94 papers presented were selected from 254 submissions and focus on theory and application of hybrid information processing technology for smarter and more effective research and application. The theme of ADHIP 2020 was “Social hybrid data processing”. The papers are named in topical sections as follows: Intelligent algorithms in complex environment; AI system research and model design; Method research on Internet of Things technology; Research and analysis with intelligent education.

An exciting new development has taken place in the digital era that has captured the imagination and talent of researchers around the globe - wavelet image compression. This technology has deep roots in theories of vision, and promises performance improvements over all other compression methods, such as those based on Fourier transforms, vectors quantizers, fractals, neural nets, and many others. It is this revolutionary new technology that is presented in Wavelet Image and Video Compression, in a form that is accessible to the largest audience possible. Wavelet Image and Video Compression is divided into four parts. Part I, Background Material, introduces the basic mathematical structures that underly image compression algorithms with the intention of providing an easy introduction to the mathematical concepts that are prerequisites for the remainder of the book. It explains such topics as change of bases, scalar and vector quantization, bit allocation and rate-distortion theory, entropy coding, the discrete-cosine transform, wavelet filters and other related topics. Part II, Still Image Coding, presents a spectrum of wavelet still image coding techniques. Part III, Special Topics in Still Image Coding, provides a variety of example coding schemes with a special flavor in either approach or application domain. Part IV, Video Coding, examines wavelet and pyramidal coding techniques for video data. Wavelet Image and Video Compression serves as an excellent reference and may be used as a text for advanced courses covering the subject.

This thesis develops two new techniques for grey-scale fingerprint image compression, quadtree decomposition with multifractal analysis (QDMA) and wavelet packet with multifractal analysis (WPMA). Considering the limitations of the human vision system, the QDMA and WPMA use a wavelet transform guided by a multifractal measure to obtain the best reconstructed image in terms of a higher peak signal to noise ratio (PSNR) at the lowest bit rate. The fingerprint images and the corresponding wavelet coefficients are considered to be an approximation of strange attractors and can be analyzed by their multifractality.

Wavelets can not only provide the grouping of subband information and the highest compression for optimum bit allocation (quantization), but also an optimum synthesis (combination of subbands) by the inverse wavelet transform to achieve the highest image quality. Using the QDMA technique, the compression ratio can reach 13.95:1 with 28.06 dB PSNR, while the compression ratio of WPMA can exceed 17.7:1 with PSNR up to 28.57 dB. The QDMA and WPMA techniques can make the reconstructed image with good quality for identification or as evidence in court cases. (Abstract shortened by UMI.).

Knowledge-Based and Intelligent Information and Engineering Systems

Algorithms and Standards

Digital Information and Communication Technology and Its Applications

Fractal Image Compression

Fractal Imaging

Analysis, Probability And Mathematical Physics On Fractals

Due to the growing use of web applications and communication devices, the use of data has increased throughout various industries. It is necessary to develop new techniques for managing data in order to ensure adequate usage. The Handbook of Research on Pattern Engineering System Development for Big Data Analytics is a critical scholarly resource that examines the incorporation of pattern management in business technologies as well as decision making and prediction process through the use of data management and analysis. Featuring coverage on a broad range of topics such as business intelligence, feature extraction, and data collection, this publication is geared towards professionals, academicians, practitioners, and researchers seeking current research on the development of pattern management systems for business applications.

Digital image processing is a field that is constantly improving. Gaining high-level understanding from digital images is a key requirement for computing. One aspect of study that is assisting with this advancement is fractal theory. This new science has gained momentum and popularity as it has become a key topic of research in the area of image analysis. Examining Fractal Image Processing and Analysis is an essential reference source that discusses fractal theory applications and analysis, including box-counting analysis, multi-fractal analysis, 3D fractal analysis, and chaos theory, as well as recent trends in other soft computing techniques. Featuring research on topics such as image compression, pattern matching, and artificial neural networks, this book is ideally designed for system engineers, computer engineers, professionals, academicians, researchers, and students seeking coverage on problem-oriented processing techniques and imaging technologies.

This book constitutes the refereed proceedings of the 21st International Symposium on VLSI Design and Test, VDAT 2017, held in Roorkee, India, in June/July 2017. The 48 full papers presented together with 27 short papers were carefully reviewed and selected from 246 submissions. The papers were organized in topical sections named: digital design; analog/mixed signal; VLSI testing; devices and technology; VLSI architectures; emerging technologies and memory; system design; low power design and test; RF circuits; architecture and CAD; and design verification.

One half of the book is authored by Yuval Fisher himself, while articles from another 12 experts in the field present material from different points of view. The focus here is solely on fractal image encoding, with the aim of providing a working code that is usable in applications, while containing the complete details of how to encode and decode images. An indispensable "how to" guide, combining the very latest results in the field. Of interest to a very wide audience, ranging from experts in image processing to high school students.

The 8th International Conference on Robotic, Vision, Signal Processing & Power Applications

21st International Symposium, VDAT 2017, Roorkee, India, June 29 – July 2, 2017, Revised Selected Papers

Handbook of Research on Pattern Engineering System Development for Big Data Analytics

Advances in Imaging and Electron Physics

A Wavelet Tour of Signal Processing

Two- and Three-Dimensional Coding Schemes for Wavelet and Fractal-Wavelet Image Compression

The International conference series on Computer Science, Engineering & Applications (ICCSEA) aims to bring together researchers and practitioners from academia and industry to focus on understanding computer science, engineering and applications and to establish new collaborations in these areas. The Second International Conference on Computer Science, Engineering & Applications (ICCSEA-2012), held in Delhi, India, during May 25-27, 2012 attracted many local and international delegates, presenting a balanced mixture of intellect and research both from the East and from the West. Upon a strenuous peer-review process the best submissions were selected leading to an exciting, rich and a high quality technical conference program, which featured high-impact presentations in the latest developments of various areas of computer science, engineering and applications research.

Advances in Imaging and Electron Physics merges two long-running serials-Advances in Electronics and Electron Physics and Advances in Optical and Electron Microscopy. This series features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science and digital image processing, electromagnetic wave propagation, electron microscopy, and the computing methods used in all these domains.

Fractal image compression technology, one of the major digital image compression techniques, has been a well kept secret for many years. While there are many books written on other technologies, such as DCT/JPEG and wavelet theory, few books touch the subject of fractal image compression. Fractal Imaging presents the logic, technology, and various uses of fractal imaging by analyzing a complete, usable fractal image representation system. This detailed work will be a must for engineers interested in building fractal imaging systems. It will also be of interest to the general public, showing how mathematics once again plays a central role in our lives, where art and science intersect. Included is a CD-ROM containing fractal images and a freeware version of Iterated Systems fractal imaging utility. Key Features * Modeling realistic images * Efficient, fractal image representation and enhancement * Data compression and coding algorithms with Sample C code * 16-page color insert * Includes Fractal Imager Software * Fractal Imager is an award-winning Windows" product that produces Fractal Image Format (FIF) files;This software helps you to create interactive Web page images that download fast and look sharp. * Put interactive images on your Web site * Give great image quality and resolution independent zoomability * Super fast Internet progressive display * More content without taking more space!

' Wavelet analysis and its applications have been one of the fastest growing research areas in the past several years. Wavelet theory has been employed in numerous fields and applications, such as signal and image processing, communication systems, biomedical imaging, radar, air acoustics, and many other areas. Active media technology is concerned with the development of autonomous computational or physical entities capable of perceiving, reasoning, adapting, learning, cooperating, and delegating in a dynamic environment. This book captures the essence of the current state of the art in wavelet analysis and active media technology. It includes nine invited papers by distinguished researchers: P Zhang, T D Bui and C Y Suen from Concordia University, Canada; N A Strelkov and V L Dol'nikov from Yaroslavl State University, Russia; Chin-Chen Chang and Ching-Yun Chang from Taiwan; S S Pandey from R D University, India; and I L Bloshanskii from Moscow State Regional University, Russia. The proceedings have been selected for coverage in: Index to Scientific & Technical Proceedings (ISTP CDROM version / ISI Proceedings)CC Proceedings — Engineering and Technical Sciences Contents: Volume 1: Average Dimension of Wavelet Subspaces (N A Strelkov)Wavelet Based Particle Filters (G Rui & Z Wang)A New Editing Algorithm for Mesh Models (W Wang et al.)A Wavelet Transform Based Algorithm for Image Maximum Fusion (D Yin et al.)Resource Allocation Via Reinforcement Learning in Mass (Z Huang)A Float-Type Interface Meter (X Bai et al.)Application and Intelligent Conjunction of Different Function (H Ai et al.) Volume 2: Wavelet Subspaces and Lattice Packing (V L Dol'nikov & N A Strelkov)The Study on Sampling Interval for Time Series (X W Meng et al.)Graph-Based Candidate Item Set Generating Algorithm (P Guo et al.)Image Contrast Enhancement Based on Wavelet Transform (D Liu & J P Li)SIP in Multimedia Phone System Over IP (B B Wang et al.)Ontology-Based Resource Matchmaking in the Grid (G M Lu et al.)GIS Query Method Based on Qualitative Spatial Reasoning (P Guo et al.) Volume 3: A De-Noising Method Based on Wavelet (D Song & J He)Construction of Matrix Conjugate Quadrature Filters (L Sun et al.)Robust and Adaptive Digital Watermarking (J Zhang & S Hong)Home Automation System Based on Embedded Technology (C Qi & T Hang)Construction of a Novel Contourlet Transform (Q Lian & L Kong)Several Problems in the Wavelet-Based Local CT (X Wen et al.) and other papers Readership: Graduate students, academics, researchers and practitioners in the areas of pattern and handwriting recognition, image analysis, computer vision, and networking.Keywords:Wavelet Analysis;Image Processing;Signal Processing;Communications;Algorithms and Constructions;Intelligent Agent Technology;Multi-Agent Systems;Multi-Modal Processing;Detection'

Digital Image Compression

Two- and Three-Dimensional Coding Schemes for Wavelet and Fractal-Wavelet Image Compression [electronic Resource]

Computer Analysis of Images and Patterns

International Conference, DICTAP 2011, Dijon, France, June 21-23, 2011. Proceedings, Part I

Wavelets and Fractals in Earth System Sciences

The proceeding is a collection of research papers presented, at the 8th International Conference on Robotics, Vision, Signal Processing and Power Applications (ROVISP 2013), by researchers, scientists, engineers, academicians as well as industrial professionals from all around the globe. The topics of interest are as follows but are not limited to: • Robotics, Control, Mechatronics and Automation • Vision, Image, and Signal Processing • Artificial Intelligence and Computer Applications • Electronic Design and Applications • Telecommunication Systems and Applications • Power System and Industrial Applications

Compression of Fingerprints Based on Wavelet Packet Decomposition and Fractal Singularity Measures

Wavelets, Signals, Fractals

Wavelet Analysis and Active Media Technology

Enhanced Fractal Image Compression Using Haar Wavelet

Techniques and Applications of Digital Watermarking and Content Protection