Rle Algorithme In Matlab

This book covers basic principles of telecommunications and their applications in the design and analysis of modern networks and systems. Aimed to make telecommunications engineering easily accessible to students, this book contains numerous worked examples, case studies and review questions at the end of each section. Readers of the book can thus easily check their understanding of the topics progressively. To render the book more hands-on, MATLAB® software package is used to explain some of the concepts. Parts of this book are taught in undergraduate curriculum, while the rest is taught in graduate courses.Telecommunications Engineering: Theory and Practice treats both traditional and modern topics, such as blockchain, OFDM, OFDMA, SC-FDMA, LPDC codes, arithmetic coding, polar codes and non-orthogonal multiple access (NOMA).
Volume 3 of the second edition of the fully revised and updated Digital Signal and Image Processing using MATLAB®, after first two volumes on the "Fundamentals" and "Advances and Applications: The Deterministic Case", focuses on the stochastic case. It will be of particular benefit to readers who already possess a good knowledge of MATLAB®, a command of the fundamental elements of digital signal processing and who are familiar with both the fundamentals of continuous-spectrum spectral analysis and who have a certain mathematical knowledge concerning Hilbert spaces. This volume is focused on applications, but it also provides a good presentation of the principles. A number of elements closer in nature to statistics than to signal processing itself are widely discussed. This choice comes from a current tendency of signal processing to use techniques from this field. More than 200 programs and functions are provided in the MATLAB® language, with useful comments and guidance, to enable numerical experiments to be carried out, thus allowing readers to develop a deeper understanding of both the theoretical and practical aspects of this subject. Subband adaptive filtering is rapidly becoming one of the most effective techniques for reducing computational complexity and improving the convergence rate of algorithms in adaptive signal processing applications. This book provides an introductory, yet extensive guide on the theory of various subband adaptive filtering techniques. For beginners, the authors discuss the basic principles that underlie the design and implementation of subband adaptive filters. For advanced readers, a comprehensive coverage of recent developments, such as multiband tap–weight adaptation, delayless architectures, and filter–bank design methods for reducing band–edge effects are included. Several analysis techniques and complexity evaluation are also introduced in this book to provide better understanding of subband adaptive filtering. This book bridges the gaps between the mixed–domain natures of subband adaptive filtering techniques and provides enough depth to the material augmented by many MATLAB® functions and examples. Key Features: Acts as a timely introduction for researchers, graduate students and engineers who want to design and deploy subband adaptive filters in their research and applications. Bridges the gaps between two distinct domains: adaptive filter theory and multirate signal processing. Uses a practical approach through MATLAB®-based source programs on the accompanying CD. Includes more than 100 M-files, allowing readers to modify the code for different algorithms and applications and to gain more insight into the theory and concepts of subband adaptive filters. Subband Adaptive Filtering is aimed primarily at practicing engineers, as well as senior undergraduate and graduate students. It will also be of interest to researchers, technical managers, and computer scientists.
Advances and Applications, The Stochastic Case
Lignocellulose
Proceedings of the ... Engineering Technology Conference on Energy
Advanced Field-Solver Techniques for RC Extraction of Integrated Circuits
Nature-Inspired Computing
Applied Medical Image Processing

UP-TO-DATE, TECHNICALLY ACCURATE COVERAGE OF ESSENTIAL TOPICS IN IMAGE AND VIDEO PROCESSING This is the first book to combine image and video processing with a practical MATLAB®-oriented approach in order to demonstrate the most important image and video techniques and algorithms. Utilizing minimal math, the contents are presented in a clear, objective manner, emphasizing and encouraging experimentation. The book has been organized into two parts. Part I: Image Processing begins with an overview of the field, then introduces the fundamental concepts, notation, and terminology associated with image representation and basic image processing operations. Next, it discusses MATLAB® and its Image Processing Toolbox with the start of a series of chapters with hands-on activities and step-by-step tutorials. These chapters cover image acquisition and digitization; arithmetic, logic, and geometric operations; point-based, histogram-based, and neighborhood-based image enhancement techniques; the Fourier Transform and relevant frequency-domain image filtering techniques; image restoration; mathematical morphology; edge detection techniques; image segmentation; image compression and coding; and feature extraction and

representation. Part II: Video Processing presents the main concepts and terminology associated with analog video signals and systems, as well as digital video formats and standards. It then describes the technically involved problem of standards conversion, discusses motion estimation and compensation techniques, shows how video sequences can be filtered, and concludes with an example of a solution to object detection and tracking in video sequences using MATLAB®. Extra features of this book include: More than 30 MATLAB® tutorials, which consist of step-by-step guides toexploring image and video processing techniques using MATLAB® Chapters supported by figures, examples, illustrative problems, and exercises Useful websites and an extensive list of bibliographical references This accessible text is ideal for upper-level undergraduate and graduate students in digital image and video processing courses, as well as for engineers, researchers, software developers, practitioners, and anyone who wishes to learn about these increasingly popular topics on their own.

Remote health monitoring using wearable sensors is an important research area involving several key steps: physiological parameter sensing and data acquisition, data analysis, data security, data transmission to caregivers, and clinical intervention, all of which play a significant role to form a closed loop system. Subject-specific behavioral and clinical traits, coupled with individual physiological differences, necessitate a personalized healthcare delivery model for around-the-clock monitoring within the home environment. Cardiovascular disease monitoring is an illustrative application domain where research has been instrumental in enabling a personalized closed-loop monitoring system, which has been showcased in this book. Health Monitoring Systems: An Enabling Technology for Patient Care provides a holistic overview of state-of-the-art monitoring systems facilitated by Internet of Things (IoT) technology. The book lists out the details on biomedical signal acquisition, processing, and data security, the fundamental building blocks towards an ambulatory health monitoring infrastructure. The fundamentals have been complimented with other relevant topics including applications which provide an in-depth view on remote health monitoring systems. Key Features: Presents examples of state-of-the-art health monitoring systems using IoT infrastructure Covers the full spectrum of physiological sensing, data acquisition, processing, and data security Provides relevant example applications demonstrating the benefits of technological advancements aiding disease prognosis This book serves as a beginner's guide for engineering students of electrical and computer science, practicing engineers, researchers, and scientists who are interested in having an overview of pervasive health monitoring systems using body-worn sensors operating outside the hospital environment. It could also be recommended as a reference for a graduate or master's level course on biomedical instrumentation and signal processing.

This volume contains papers from the IFAC Workshop on Real-Time Programming. The aim of the Workshop was to bring together academic practitioners and industrialists involved in this important and expanding area of interest in order to exchange experiences on recent advances in this field. Contents include: * DEPENDABILITY AND SAFETY FOR REAL TIME SYSTEMS * REAL-TIME PROGRAMMING TECHNIQUES * SOFTWARE REQUIREMENT ENGINEERING * CONTROL SYSTEMS DESIGN * SOFTWARE DESIGN * SOFTWARE ENGINEERING AND COMPLEX ENGINEERINGSYSTEMS

Topics on the Dynamics of Civil Structures, Volume 1

Special Issue of the International MultiConference of Engineers and Computer Scientists 2012

Communication and Computing Systems

Multimedia Technologies

IAENG Transactions on Electrical Engineering, Volume 1

MATLAB/Simulink for Digital Signal Processing

The book covers a comprehensive overview of the theory, methods, applications and tools of cognition and recognition. The book is a collection of best selected papers presented in the International Conference on Cognition and Recognition 2016 (ICCR 2016) and helpful for scientists and researchers in the field of image processing, pattern recognition and computer vision for advance studies. Nowadays, researchers are working in interdisciplinary areas and the proceedings of ICCR 2016 plays a major role to accumulate those significant works at one place. The chapters included in the proceedings inculcates both theoretical as well as practical aspects of different areas like nature inspired algorithms, fuzzy systems, data mining, signal processing, image processing, text processing, wireless sensor networks, network security and cellular automata.

Data compression is one of the most important fields and tools in modern computing. From archiving data, to CD-ROMs, and from coding theory to image analysis, many facets of modern computing rely upon data compression. This book provides a comprehensive reference for the many different types and methods of compression. Included are a detailed and helpful taxonomy, analysis of most common methods, and discussions on the use and comparative benefits of methods and description of "how to" use them. Detailed descriptions and explanations of the most well-known and frequently used compression methods are covered in a self-contained fashion, with an accessible style and technical level for specialists and non-specialists.

Case Studies in Secure Computing

Design of an Image Compression Algorithm for the Cornell University Satellite Project (CUSat).

Practical Image and Video Processing Using MATLAB

Data Compression

Real-Time Programming 2004

Video Compression and Decompression Using Adaptive Rood Pattern Search

Fuzzy Algorithms for Control gives an overview of the research results of a number of European research groups that are active and play a leading role in the field of fuzzy modeling and control. It contains 12 chapters divided into three parts. Chapters in the first part address the position of fuzzy systems in control engineering and in the AI community. State-of-the-art surveys on fuzzy modeling and control are presented along with a critical assessment of the role of these methodologists in control engineering. The

second part is concerned with several analysis and design issues in fuzzy control systems. The analytical issues addressed include the algebraic representation of fuzzy models of different types, their approximation properties, and stability analysis of fuzzy control systems. Several design aspects are addressed, including performance specification for control systems in a fuzzy decision-making framework and complexity reduction in multivariable fuzzy systems. In the third part of the book, a number of applications of fuzzy control are presented. It is shown that fuzzy control in combination with other techniques such as fuzzy data analysis is an effective approach to the control of modern processes which present many challenges for the design of control systems. One has to cope with problems such as process nonlinearity, time-varying characteristics for incomplete process knowledge. Examples of real-world industrial applications presented in this book are a blast furnace, a lime kiln and a solar plant. Other examples of challenging problems in which fuzzy logic plays an important role and which are included in this book are mobile robotics and aircraft control. The aim of this book is to address both theoretical and practical subjects in a balanced way. It will therefore be useful for readers from the academic world and also from industry who want to apply fuzzy control in practice.

A widely used, classroom-tested text, Applied Medical Image Processing: A Basic Course delivers an ideal introduction to image processing in medicine, emphasizing the clinical relevance and special requirements of the field. Avoiding excessive mathematical formalisms, the book presents key principles by implementing algorithms from scratch and usin

This book constitutes the refereed proceedings of the Second International Multi-topic Conference, IMTIC 2012, held in Jamshoro, Pakistan, in March 2012. The 51 revised full papers presented were carefully reviewed and selected from 205 submissions. The papers address topics from information communication technologies.

Handbook of Data Compression

Modeling and Control of Infectious Diseases in the Host

DSP for MATLAB and LabVIEW: LMS adaptive filtering

Second International Multi Topic Conference, IMTIC 2012, Jamshoro, Pakistan, March 28-30, 2012. Proceedings

Lasers & Optronics

Lab on a Chip

Modeling and Control of Infectious Diseases in the Host: With MATLAB and R provides a holistic understanding of health and disease by presenting topics on quantitative decision-making that influence the development of drugs. The book presents modeling advances in different viral infections, dissecting detailed contributions of key players, along with their respective interactions. By combining tailored in vivo experiments and mathematical modeling approaches, the book clarifies the relative contributions of different underlying mechanisms within hosts of the most lethal viral infections, including HIV, influenza and Ebola. Illustrative examples for parameter fitting, modeling and control applications are explained using MATLAB and R. Provides a multi-scale framework to link within-host infection dynamics (individual level) to between-host transmission fitness (epidemiological level) in viral infectious diseases Includes PK/PD modeling and simulation approaches to improve efficiency and decision-making at preclinical development phases Presents a theoretic approach to schedule drug treatments

A comprehensive review of position location technology — from fundamental theory to advanced practical applications Positioning systems and location technologies have become significant components of modern life, used in a multitude of areas such as law enforcement and security, road safety and navigation, personnel and object tracking, and many more. Position location systems have greatly reduced societal vulnerabilities and enhanced the quality of life for billions of people around the globe — yet limited resources are available to researchers and students in this important field. The Handbook of Position Location: Theory, Practice, and Advances fills this gap, providing a comprehensive overview of both fundamental and cutting-edge techniques and introducing practical methods of advanced localization and positioning. Now in its second edition, this handbook offers broad and in-depth coverage of essential topics including Time of Arrival (TOA) and Direction of Arrival (DOA) based positioning, Received Signal Strength (RSS) based positioning, network localization, and others. Topics such as GPS, autonomous vehicle applications, and visible light localization are examined, while major revisions to chapters such as body area network positioning and digital signal processing for GNSS receivers reflect current and emerging advances in the field. This new edition: Presents new and revised chapters on topics including localization error evaluation, Kalman filtering, positioning in inhomogeneous media, and Global Positioning (GPS) in harsh environments Offers MATLAB examples to demonstrate fundamental algorithms for positioning and provides online access to all MATLAB code Allows practicing engineers and graduate students to keep pace with contemporary research and new technologies Contains numerous application-based examples including the application of localization to drone navigation, capsule endoscopy localization, and satellite navigation and localization Reviews unique applications of position location systems, including GNSS and RFID-based localization systems The Handbook of Position Location: Theory, Practice, and Advances is valuable resource for practicing engineers and researchers seeking to keep pace with current developments in the field, graduate students in need of clear and accurate course material, and university instructors teaching the fundamentals of wireless localization.

Aimed at signal processors and computer scientists, this book of self-contained discussions explores how computer science can enhance the performance of signal processing systems and their design.

Proceedings : ICSP'02 : August 26-30, 2002, Beijing, China

ICCR 2016

Telecommunications Engineering: Principles And Practice

Materials for the Future from the Tropics : Proceedings of the 3rd USM-JIRCAS Joint International Symposium, 9-11 March 2004, Penang, Malaysia
Clone Evolution
Symbolic and Knowledge-based Signal Processing

In today's age of wireless and mobile computing, network and computer security is paramount. Case Studies in Secure Computing: Achievements and Trends gathers the latest research from researchers who share their insights and best practices through illustrative case studies. This book examines the growing security attacks and countermeasures in the stand-alone and networking worlds, along with other pertinent security issues. The many case studies capture a truly wide range of secure computing applications. Surveying the common elements in computer security attacks and defenses, the book: Describes the use of feature selection and fuzzy logic in a decision tree model for intrusion detection Introduces a set of common fuzzy-logic-based security risk estimation techniques with examples Proposes a secure authenticated multiple-key establishment protocol for wireless sensor networks Investigates various malicious activities associated with cloud computing and proposes some countermeasures Examines current and emerging security threats in long-term evolution backhaul and core networks Supplies a brief introduction to application-layer denial-of-service (DoS) attacks Illustrating the security challenges currently facing practitioners, this book presents powerful security solutions proposed by leading researchers in the field. The examination of the various case studies will help to develop the practical understanding required to stay one step ahead of the security threats on the horizon. This book will help those new to the field understand how to mitigate security threats. It will also help established practitioners fine-tune their approach to establishing robust and resilient security for next-generation computing systems. Designed to provide tools for independent study, this book contains student-tested mathematical exercises joined with MATLAB programming exercises. Most chapters open with a review followed by theoretical and programming exercises, with detailed solutions provided for all problems including programs. Many of the MATLAB exercises are presented as Russian dolls: each question improves and completes the previous program and results are provided to validate the intermediate programs. The book offers useful MATLAB commands, advice on tables, vectors, matrices and basic commands for plotting. It contains material on eigenvalues and eigenvectors and important norms of vectors and matrices including perturbation theory; iterative methods for solving nonlinear and linear equations; polynomial and piecewise polynomial interpolation; Bézier curves; approximations of functions and integrals and more. The last two chapters considers ordinary differential equations including two point boundary value problems, and deal with finite difference methods for some partial differential equations. The format is designed to assist students working alone, with concise Review paragraphs, Math Hint footnotes on the mathematical aspects of a problem and MATLAB Hint footnotes with tips on programming.

Duplicated passages of source code - code clones - are a common property of software systems. While clones are beneficial in some situations, their presence causes various problems for software maintenance. Most of these problems are strongly related to change and include, for example, the need to propagate changes across duplicated code fragments and the risk of inconsistent changes to clones that are meant to evolve identically. Hence, we need a sophisticated analysis of clone evolution to better understand, assess, and manage duplication in practice. This thesis introduces Clone Evolution Graphs as a technique to model clone relations and their evolution within the history of a system. We present our incremental algorithm for efficient and automated extraction of Clone Evolution Graphs from a system's history. The approach is shown to scale even for large systems with long histories making it applicable to retroactive analysis ofclone evolution as well as live tracking of clones during software maintenance.We have used Clone Evolution Graphs in several studies to analyze versatile aspects of clone evolution in open-source as well as industrial systems. Our results show that the characteristics of clone evolution are quite different between systems, highlighting the need for a sophisticated technique like Clone Evolution Graphs to track clones and analyze their evolution on a per-system basis. We have also shown that Clone Evolution Graphs are well-suited to analyze the change behavior of individual clones and can be used to identify problematic clones within a system. In general, the results of our studies provide new insights into how clones evolve, how they are changed, and how they are removed.

An Enabling Technology for Patient Care
2002 6th International Conference on Signal Processing
Algorithms For Dummies
Exercises in Computational Mathematics with MATLAB
Digital Signal and Image Processing using MATLAB, Volume 3
Theory and Implementation

The book introduces an original and effective method for the analysis of peak-to-peak output current ripple amplitude in three-phase two-level inverters. It shows that the method can be extended to both multiphase inverters, with particular emphasis on five-phase and seven-phase inverters, and multilevel ones, with particular emphasis on three-level inverters, and provides, therefore, a comparison among different number of output phases and voltage levels. The work reported on here represents the first detailed analysis of the peak-to-peak output current ripple. It makes an important step toward future developments in the field of high-power generation, and in grid-connected and motor-load systems.

This book provides a comprehensive reference for the many different types and methods of compression. Included are a detailed and helpful taxonomy, analysis of most common methods, and discussions on the use and comparative benefits of methods and description of "how to" use them. Detailed descriptions and explanations of the most well-known and frequently used compression methods are covered in a self-contained fashion, with an accessible style and technical level for specialists and nonspecialists. Comments and suggestions of many readers have been included as a benefit to future readers, and a website is maintained and updated by the author.

The contributions for this volume, dedicated to honour the 65th birthday of Professor I Galligani, have been numerous and cover a wide range of topics of the current Numerical Analysis and of its applications.

The Complete Reference
With MATLAB and R
Proceedings of ... International Conference on Power Electronics and Drive Systems

Achievements and Trends

Proceedings of the 30th IMAC, A Conference on Structural Dynamics, 2012

Physics and Chemistry-Based Algorithms

Topics on the Dynamics of Civil Structures, Volume 1, Proceedings of the 30th IMAC, A Conference and Exposition on Structural Dynamics, 2012, the first volume of six from the Conference, brings together 45 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on: Human Induced Vibrations Bridge Dynamics Operational Modal Analysis Experimental Techniques and Modeling for Civil Structures System Identification for Civil Structures Method and Technologies for Bridge Monitoring Damage Detection for Civil Structures Structural Modeling Vibration Control Method and Approaches for Civil Structures Modal Testing of Civil Structures

The International Conference on Communication and Computing Systems (ICCCS 2018) provides a high-level international forum for researchers and recent advances in the field of electronic devices, computing, big data analytics, cyber security, quantum computing, biocomputing, telecommunication, etc. The aim of the conference was to bridge the gap between the technological advancements in the industry and the academic research.

Environment and energy resources ; Pulp, paper and cellulose derivatives ; Bio-based composites ; New technological developments ; Resources, properties and characterization

Handbook of Position Location

Emerging Trends and Applications in Information Communication Technologies

Breakthrough BCI Applications in Medicine

Peak-to-Peak Output Current Ripple Analysis in Multiphase and Multilevel Inverters

Fuzzy Algorithms for Control

Recent Trends in Numerical Analysis

Resistance and capacitance (RC) extraction is an essential step in modeling the interconnection wires and substrate coupling effect in nanometer-technology integrated circuits (IC). The field-solver techniques for RC extraction guarantee the accuracy of modeling, and are becoming increasingly important in meeting the demand for accurate modeling and simulation of VLSI designs. Advanced Field-Solver Techniques for RC Extraction of Integrated Circuits presents a systematic introduction to, and treatment of, the key field-solver methods for RC extraction of VLSI interconnects and substrate coupling in mixed-signal ICs. Various field-solver techniques are explained in detail, with real-world examples to illustrate the advantages and disadvantages of each algorithm. This book will benefit graduate students and researchers in the field of electrical and computer engineering as well as engineers working in the IC design and design automation industries. Dr. Wenjian Yu is an Associate Professor at the Department of Computer Science and Technology at Tsinghua University in China; Dr. Xiren Wang is a R&D Engineer at Cadence Design Systems in the USA.

This book is Volume IV of the series DSP for MATLABâ„¢ and LabVIEWâ„¢. Volume IV is an introductory treatment of LMS Adaptive Filtering and applications, and covers cost functions, performance surfaces, coefficient perturbation to estimate the gradient, the LMS algorithm, response of the LMS algorithm to narrow-band signals, and various topologies such as ANC (Active Noise Cancelling) or system modeling, Noise Cancellation, Interference Cancellation, Echo Cancellation (with single- and dual-H topologies), and Inverse Filtering/Deconvolution. The entire series consists of four volumes that collectively cover basic digital signal processing in a practical and accessible manner, but which nonetheless include all essential foundation mathematics. As the series title implies, the scripts (of which there are more than 200) described in the text and supplied in code form (available via the internet at www.morganclaypool.com/page/isen) will run on both MATLABâ„¢ and LabVIEWâ„¢. The text for all volumes contains many examples, and many useful computational scripts, augmented by demonstration scripts and LabVIEWâ„¢ Virtual Instruments (VIs) that can be run to illustrate various signal processing concepts graphically on the user's computer screen. Volume I consists of four chapters that collectively set forth a brief overview of the field of digital signal processing, useful signals and concepts (including convolution, recursion, difference equations, LTI systems, etc), conversion from the continuous to discrete domain and back (i.e., analog-to-digital and digital-to-analog conversion), aliasing, the Nyquist rate, normalized frequency, sample rate conversion and Mu-law compression, and signal processing principles including correlation, the correlation sequence, the Real DFT, correlation by convolution, matched filtering, simple FIR filters, and simple IIR filters. Chapter 4 of Volume I, in particular, provides an intuitive or "first principle" understanding of how digital filtering and frequency transforms work. Volume II provides detailed coverage of discrete frequency transforms, including a brief overview of common frequency transforms, both discrete and continuous, followed by detailed treatments of the Discrete Time Fourier Transform (DTFT), the z-Transform (including definition and properties, the inverse z-transform, frequency response via z-transform, and alternate filter realization topologies including Direct Form, Direct Form Transposed, Cascade Form, Parallel Form, and Lattice Form), and the Discrete Fourier Transform (DFT) (including Discrete Fourier Series, the DFT-IDFT pair, DFT of common signals, bin width, sampling duration, and sample rate, the FFT, the Goertzel Algorithm, Linear, Periodic, and Circular convolution, DFT Leakage, and computation of the Inverse DFT). Volume III covers digital filter design, including the specific topics of FIR design via windowed-ideal-lowpass filter, FIR highpass, bandpass, and bandstop filter design from windowed-ideal lowpass filters, FIR design using the transition-band-optimized Frequency Sampling technique (implemented by Inverse-DFT or Cosine/Sine Summation Formulas), design of equiripple FIRs of all standard types including Hilbert Transformers and Differentiators via the Remez Exchange Algorithm, design of Butterworth, Chebyshev (Types I and II), and Elliptic analog prototype lowpass filters, conversion of analog lowpass prototype filters to highpass, bandpass, and bandstop filters, and conversion of analog filters to digital filters using the Impulse Invariance and Bilinear Transform techniques. Certain filter topologies specific to FIRs are also discussed, as are two simple FIR types, the Comb and Moving Average filters.

Nature-Inspired Computing: Physics and Chemistry-Based Algorithms provides a comprehensive introduction to the methodologies and algorithms in nature-inspired computing, with an emphasis on applications to real-life engineering problems. The research interest for Nature-inspired Computing has grown considerably exploring different phenomena observed in nature and basic principles of physics, chemistry, and biology. The discipline has reached a mature stage and the field has been well-established. This endeavour is another attempt at investigation into various computational schemes inspired from nature, which are presented in this book with the development of a suitable framework and industrial applications. Designed for senior undergraduates, postgraduates, research students, and professionals, the book is written at a comprehensible level for students who have some basic knowledge of calculus and differential equations, and some exposure to optimization theory. Due to the focus on search and optimization, the book is also appropriate for electrical, control, civil, industrial and manufacturing engineering, business, and economics students, as well as those in computer and information sciences. With the mathematical and programming references and applications in each chapter, the book is self-contained, and can also serve as a reference for researchers and scientists in the fields of system science, natural computing, and optimization.

Theory, Practice, and Advances

Software Tools for the Professional Programmer

Proceedings of the 2nd International Conference on Communication and Computing Systems (ICCCS 2018), December 1-2, 2018, Gurgaon, India

Dr. Dobb's Journal

Subband Adaptive Filtering

Health Monitoring Systems

This volume contains revised and extended research articles written by prominent researchers. Topics covered include electrical engineering, circuits, artificial intelligence, data mining, imaging engineering, bioinformatics, internet computing, software engineering, and industrial applications. The book offers tremendous state-of-the-art advances in electrical engineering and also serves as an excellent reference work for researchers and graduate students working with/on electrical engineering.

Discover how algorithms shape and impact our digital world All data, big or small, starts with algorithms. Algorithms are mathematical equations that determine what we see—based on our likes, dislikes, queries, views, interests, relationships, and more—online. They are, in a sense, the electronic gatekeepers to our digital, as well as our physical, world. This book demystifies the subject of algorithms so you can understand how important they are business and scientific decision making. Algorithms for Dummies is a clear and concise primer for everyday people who are interested in algorithms and how they impact our digital lives. Based on the fact that we already live in a world where algorithms are behind most of the technology we use, this book offers eye-opening information on the pervasiveness and importance of this mathematical science—how it plays out in our everyday digestion of news and entertainment, as well as in its influence on our social interactions and consumerism. Readers even learn how to program an algorithm using Python! Become well-versed in the major areas comprising algorithms Examine the incredible history behind algorithms Get familiar with real-world applications of problem-solving procedures Experience hands-on development of an algorithm from start to finish with Python If you have a nagging curiosity about why an ad for that hammock you checked out on Amazon is appearing on your Facebook page, you'll find Algorithm for Dummies to be an enlightening introduction to this integral realm of math, science, and business.

Video compression is getting more and more important in the electronic world with increased amount of bandwidth and storage requirement due to increase in the video usage over the internet. Pioneering advances in the video compression algorithms is important. The project discusses various algorithms that are currently available in the commercial market for its advantages and disadvantages. One of them is H.264 standard. H.264 is a motion-block oriented codec standard developed by ITU-T. Aim of this algorithm is to provide better video quality with fewer amounts of information transfer. The final goal of the project was to implement a video encoder and decoder using Matlab. A video captured in RGB format was encoded using the encoder with each frame processed by dividing it into several motion-blocks. In the encoder part, several motion estimation algorithms were studied. The algorithms were compared with respect to number of calculations done by each algorithm and arithmetic complexity involved in them. Peak signal to noise ratio for multiple frames was also calculated for different algorithms to get information about quality of the algorithm. From the discussed algorithms, ARPS (Adaptive Rood Pattern Search) algorithm was used in the final encoder. Motion vectors generated by the ARPS were given to Motion Compensation to generate compensated image. The compensated image was transformed using DCT (Discrete Cosine Transform). Finally, the transformed vectors were Quantization and encoded using RLE (Run length encoding). The encoded video stream was successfully decoded by a decoder following reverse process to re-generate the video in its actual format.

A Basic Course

RLE Progress Report

Proceedings of International Conference on Cognition and Recognition