Invisible Watermarking Matlab Source Code

You will learn to create GUI applications using the Qt toolkit. The Qt toolkit, also popularly known as Qt, is a cross-platform application and UI framework developed by Trolltech, which is used to develop GUI applications. You will develop an existing GUI by adding several Line Edit widgets to read input, which are used to set the range and step of the graph (signal). Next, Now, you can use a widget for each graph. Add another Widget from Containers in gui_graphics.ui using Qt Designer. Then, Now, you can use two Widgets, each of which has two canvases. The two canvases has QVBoxLayout in each Widget. Finally, you will apply those Widgets to display the results of signal and image processing techniques.

Buku ini menjadi jawaban atas kebutuhan para mahasiswa, dosen, maupun periset yang ingin terjun-langsung dalam memahami pemrosesan sinyal digital. Pembahasan di dalam buku ini langsung diaplikasikan dalam bentuk GUI MATLAB, yang bisa dipakai untuk pembelajaran maupun untuk riset. Buku ini hanya difokuskan pada empat pembahasan utama dalam pemrosesan sinyal digital: runtun diskret, analisis Fourier waktu diskret, transformasi Fourier diskret, dan tapis digital. Keempat topik ini merupakan pilar utama dalam pemrosesan sinyal digital. Semua GUI MATLAB yang dirancang pada buku ini, berikut dengan sejumlah bonus GUI MATLAB lain dengan total lebih dari 100 GUI MATLAB, diberikan gratis kepada pembaca sebagai bahan pembelajaran dan dasar pengembangan bagi pembaca.

A successor to the popular Artech House title Information Hiding Techniques for Steganography and Digital Watermarking, this comprehensive and up-to-date new resource gives the reader a thorough review of steganography, digital watermarking and media fingerprinting with possible applications to modern communication, and a survey of methods used to hide information in modern media. This book explores Steganography, as a means by which two or more parties may communicate using invisible or subliminal communication. "Steganalysis" is described as methods which can be used to break steganographic communication. This comprehensive resource also includes an introduction to watermarking and its methods, a means of hiding copyright data in images and discusses components of commercial multimedia applications that are subject to illegal use. This book demonstrates a working knowledge of watermarking’s pros and cons, and the legal implications of watermarking and copyright issues on the Internet.

Comprehensive coverage of an important and current hot topic.; Details both theoretical as well as practical aspects.; Presents new data hiding algorithms for images and videos.; Reveals a number of attacks and countermeasures for data hiding systems, with a focus on digital music.

Buku ini dikonstruksi dengan menganut pendekatan solutif atas dasar-dasar teknik pemrograman Java.Buku teks ini didasarkan ide-ide dasar yang dipercaya dapat menjadikan pembaca memiliki kemampuan analisis dan pemrograman berorientasi-objek: Berorientasi-objek: Buku ini sungguh-sungguh mengajarkan pendekatan berorientasi-objek. Semua pemrosesan program selalu didiskusikan dalam peristilahan berorientasi-objek. Pembaca akan belajar bagaimana menggunakan objek-objek sebelum menulis dan menciptakannya. Buku ini menggunakan pendekatan progresi alamiah yang membuahkan kemampuan dalam merancang solusi-solusi berorientasi-objek. Praktek pemrograman yang benar: Pembaca seharusnya tidak diajari bagaimana memprogram; Pembaca sebaiknya diajari bagaimana menuliskan program yang benar. Buku teks ini mengintegrasikan latihan-latihan yang berperan sebagai fondasi dari keterampilan pemrograman yang baik. Pembaca akan belajar bagaimana menyelesaikan permasalahan dan bagaimana mengimplementasikan solusinya. Contoh: Pembaca akan belajar dari contoh. Buku teks ini diisi dengan contoh-contoh yang diimplementasikan secara utuh untuk mendemonstrasikan konsep-konsep pemrograman yang baik. Grafika dan GUI: Grafika dapat menjadi motivator bagi pembaca, dan kegunaannya dapat berperan sebagai contoh-contoh yang baik untuk pemrograman berorientasi-objek. Latihan Pemrograman: Pembaca ditantang untuk menyelesaikan soal-soal yang disediakan secara khusus pada akhir dari tiap bab.

Photographic imagery has come a long way from the pinhole cameras of the nineteenth century. Digital imagery, and its applications, develops in tandem with contemporary society’s sophisticated literacy of this subtle medium. This book examines the ways in which digital images have become ever more ubiquitous as legal and medical evidence, just as they have become our primary source of news and have replaced paper-based financial documentation. Crucially, the contributions also analyze the very profound problems which have arisen alongside the digital image, issues of veracity and progeny that demand systematic and detailed response: It looks real, but is it? What camera captured it? Has it been doctored or subtly altered? Attempting to provide answers to these slippery issues, the book covers how digital images are created, processed and stored before moving on to set out the latest techniques for forensically examining images, and finally addressing practical issues such as courtroom admissibility. In an environment where even novice users can alter digital media, this authoritative publication will do much so stabilize public trust in these real, yet vastly flexible, images of the world around us.

Every day millions of people capture, store, transmit, and manipulate digital data. Unfortunately free access digital multimedia communication also provides virtually unprecedented opportunities to pirate copyrighted material. Providing the theoretical background needed to develop and implement advanced techniques and algorithms, Digital Watermarking and Steganography: Demonstrates how to develop and implement methods to guarantee the authenticity of digital media Explains the categorization of digital watermarking techniques based on characteristics as well as applications Presents cutting-edge techniques such as the GA-based breaking algorithm on the frequency-domain steganalytic system The popularity of digital media continues to soar. The theoretical foundation presented within this valuable reference will facilitate the creation on new techniques and algorithms to combat present and potential threats against information security.

Applied Signal Processing: A MATLAB-Based Proof of Concept benefits readers by including the teaching background of experts in various applied signal processing fields and presenting them in a project-oriented framework. Unlike many other MATLAB-based textbooks which only use MATLAB to illustrate theoretical aspects, this book provides fully commented MATLAB code for working proofs-of-concept. The MATLAB code provided on the accompanying online files is the very heart of the material. In addition each chapter offers a functional introduction to the theory required to understand the code as well as a formatted presentation of the contents and outputs of the MATLAB code. Each chapter exposes how digital signal processing is applied for solving a real engineering problem used in a consumer product. The chapters are organized with a description of the problem in its applicative context and a functional review of the theory related to its solution appearing first. Equations are only used for a precise description of the problem and its final solutions. Then a step-by-step MATLAB-based proof of concept, with full code, graphs, and comments follows. The solutions are simple enough for readers with general signal processing background to understand and they

use state-of-the-art signal processing principles. Applied Signal Processing: A MATLAB-Based Proof of Concept is an ideal companion for most signal processing course books. It can be used for preparing student labs and projects.

This book constitutes the thoroughly refereed post-proceedings of the 11th International Workshop on Digital-Forensics and Watermarking, IWDW 2012, held in Shanghai, China, during October/November 2012. The 42 revised papers (27 oral and 15 poster papers) were carefully reviewed and selected from 70 submissions. The papers are organized in topical sections on steganography and steganalysis; watermarking and copyright protection; forensics and anti-forensics; reversible data hiding; fingerprinting and authentication; visual cryptography.

This collection of books brings some of the latest developments in the field of watermarking. Researchers from varied background and expertise propose a remarkable collection of chapters to render this work an important piece of scientific research. The chapters deal with a gamut of fields where watermarking can be used to encode copyright information. The work also presents a wide array of algorithms ranging from intelligent bit replacement to more traditional methods like ICA. The current work is split into two books. Book one is more traditional in its approach dealing mostly with image watermarking applications. Book two deals with audio watermarking and describes an array of chapters on performance analysis of algorithms.

This book constitutes the refereed post-conference proceedings of the Interdisciplinary Workshop on Trust, Identity, Privacy, and Security in the Digital Economy, DETIPS 2020; the First International Workshop on Dependability and Safety of Emerging Cloud and Fog Systems, DeSECSys 2020; Third International Workshop on Multimedia Privacy and Security, MPS 2020; and the Second Workshop on Security, Privacy, Organizations, and Systems Engineering, SPOSE 2020; held in Guildford, UK, in September 2020, in conjunction with the 25th European Symposium on Research in Computer Security, ESORICS 2020. A total of 42 papers was submitted. For the DETIPS Workshop 8 regular papers were selected for presentation. Topics of interest address various aspect of the core areas in relation to digital economy. For the DeSECSys Workshop 4 regular papers are included. The workshop had the objective of fostering collaboration and discussion among cyber-security researchers and practitioners to discuss the various facets and trade-o s of cyber security. In particular, applications, opportunities and possible shortcomings of novel security technologies and their integration in emerging application domains. For the MPS Workshop 4 regular papers are presented which cover topics related to the security and privacy of multimedia systems of Internet-based video conferencing systems (e.g., Zoom, Microsoft Teams, Google Meet), online chatrooms (e.g., Slack), as well as other services to support telework capabilities. For the SPOSE Workshop 3 full papers were accepted for publication. They reflect the discussion, exchange, and development of ideas and questions regarding the design and engineering of technical security and privacy mechanisms with particular reference to organizational contexts.

July 15 – August 12, Bogazici University Campus eNTERFACE'07 took place in Istanbul, at the campus of the Bogazici University. The one month long workshop was attended by 140 people. The workshop was organized around 12 well-defined projects, as the...

This book offers a comprehensive introduction to advanced methods for image and video analysis and processing. It covers deraining, dehazing, inpainting, fusion, watermarking and stitching. It describes techniques for face and lip recognition, facial expression recognition, lip reading in videos, moving object tracking, dynamic scene classification, among others. The book combines the latest machine learning methods with computer vision applications, covering topics such as event recognition based on deep learning,dynamic scene classification based on topic model, person re-identification based on metric learning and behavior analysis. It also offers a systematic introduction to image evaluation criteria showing how to use them in different experimental contexts. The book offers an example-based practical guide to researchers, professionals and graduate students dealing with advanced problems in image analysis and computer vision.

This is the second volume in a trilogy on modern Signal Processing. The three books provide a concise exposition of signal processing topics, and a guide to support individual practical exploration based on MATLAB programs. This second book focuses on recent developments in response to the demands of new digital technologies. It is divided into two parts: the first part includes four chapters on the decomposition and recovery of signals, with special emphasis on images. In turn, the second part includes three chapters and addresses important data-based actions, such as adaptive filtering, experimental modeling, and classification.

Effective Surveillance for Homeland Security: Balancing Technology and Social Issues provides a comprehensive survey of state-of-the-art methods and tools for the surveillance and protection of citizens and critical infrastructures against natural and deliberate threats. Focusing on current technological challenges involving multi-disciplinary problem analysis and systems engineering approaches, it provides an overview of the most relevant aspects of surveillance systems in the framework of homeland security. Addressing both advanced surveillance technologies and the related socio-ethical issues, the book consists of 21 chapters written by international experts from the various sectors of homeland security. Part I, Surveillance and Society, focuses on the societal dimension of surveillance—stressing the importance of societal acceptability as a precondition to any surveillance system. Part II, Physical and Cyber Surveillance, presents advanced technologies for surveillance. It considers developing technologies that are part of a framework whose aim is to move from a simple collection and storage of information toward proactive systems that are able to fuse several information sources to detect relevant events in their early incipient phase. Part III, Technologies for Homeland Security, considers relevant applications of surveillance systems in the framework of homeland security. It presents real-world case studies of how innovative technologies can be used to effectively improve the security of sensitive areas without violating the rights of the people involved. Examining cutting-edge research topics, the book provides you with a comprehensive understanding of the technological, legislative, organizational, and management issues related to surveillance. With a specific focus on privacy, it presents innovative solutions to many of the issues that remain in the quest to balance security with the preservation of privacy that society demands.

Kasus 1: MATLAB GUI: Teknik Denoising Split Bregman Isotropis dan Anisotropis Untuk Meredam Derau Citra Berwarna dan Citra Keabuan Pada kasus ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan operasi denoising terhadap citra berwarna dan citra keabuan menggunakan Split Bregman Isotropis dan Anisotropis. Ada empat jenis derau yang dipakai: Gaussin, Poisson, Salt & Pepper, dan Speckle. Beberapa kontrol GUI MATLAB yang digunakan seperti Axes, Listbox, Push Button, Edit Text, Static Text, dan Panel. Hasil denoising kemudian akan ditampilkan secara visual dan parameter MSE akan ditampilkan pada grafik batang. Kasus 2: MATLAB GUI: Dekonvolusi Variasi Total Untuk Anti-Pengaburan dan Denoising Citra Digital Pada buku ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan operasi anti-pengaburan dan penekanan derau terhadap citra berwarna dan citra keabuan menggunakan metode Dekonvolusi Variasi Total. Ada empat jenis derau yang dipakai: Gaussin, Poisson, Salt & Pepper, dan Speckle. Beberapa kontrol GUI MATLAB yang digunakan seperti Axes, Listbox, Push Button, Edit Text, Static Text, dan Panel. Hasil anti-pengaburan dan penekanan derau kemudian akan ditampilkan secara visual dan parameter MSE akan ditampilkan pada grafik batang. Kasus 3: MATLAB GUI: Teknik Denoising dan Dekonvolusi Berbasis Regularisasi Beltrami Untuk Meredam Derau Citra Berwarna dan Citra Keabuan Pada kasus ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan operasi denoising dan dekonvolusi terhadap citra berwarna dan citra keabuan menggunakan regularisasi Beltrami. Ada empat jenis derau yang dipakai: Gaussin, Poisson, Salt & Pepper, dan Speckle. Beberapa kontrol GUI MATLAB yang digunakan seperti Axes, Listbox, Push Button, Edit Text, Static Text, dan Panel. Hasil denoising kemudian akan ditampilkan secara visual dan parameter MSE akan ditampilkan pada grafik batang. Kasus 4: MATLAB GUI: Teknik Denoising Adaptif Berbasis Transformasi Wavelet Diskret Pada buku ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan operasi penapisan citra berwarna dan citra keabuan menggunakan dekomposisi wavelet 2D berbasis ambang-batas adaptif. Ada lima ambang-batas adaptif yang digunakan: Universal Shrink, Visu Shrink, Minimax Shrink, Sure Shrink, dan Bayes Shrink.

Beberapa kontrol GUI MATLAB yang digunakan seperti Axes, Listbox, Push Button, Radio Button, Edit Text, Static Text, dan Panel. Hasil dari keempat tapis kemudian akan ditampilkan secara visual dan parameter MSE akan ditampilkan pada grafik batang.

The tools of crime constantly evolve, and law enforcement and forensic investigators must understand advanced forensic techniques to ensure that the most complete evidence is brought to trial. Paramount also the need for investigators to ensure that evidence adheres to the boundaries of the legal system, a place where policy often lags behind new innovations. Crime Prevention Technologies and Applications for Advancing Criminal Investigation addresses the use of electronic devices and software for crime prevention, investigation, and the application of a broad spectrum of sciences to answer questions of interest to the legal system. This book fosters a forum for advancing research and development of the theory and practice of digital crime prevention and forensics.

Although Digital Signal Processing (DSP) has long been considered an electrical engineering topic, recent developments have also generated significant interest from the computer science community. DSP applications in the consumer market, such as bioinformatics, the MP3 audio format, and MPEG-based cable/satellite television have fueled a desire to understand this technology outside of hardware circles. Designed for upper division engineering and computer science students as well as practicing engineers and scientists, Digital Signal Processing Using MATLAB & Wavelets, Second Edition emphasizes the practical applications of signal processing. Over 100 MATLAB examples and wavelet techniques provide the latest applications of DSP, including image processing, games, filters, transforms, networking, parallel processing, and sound. This Second Edition also provides the mathematical processes and techniques needed to ensure an understanding of DSP theory. Designed to be incremental in difficulty, the book will benefit readers who are unfamiliar with complex mathematical topics or those limited in programming experience. Beginning with an introduction to MATLAB programming, it moves through filters, sinusoids, sampling, the Fourier transform, the z-transform and other key topics. Two chapters are dedicated to the discussion of wavelets and their applications. A CD-ROM (platform independent) accompanies the book and contains source code, projects for each chapter, and the figures from the book.

In this book, you will learn PyQt5 with accompanied by a step-by-step tutorial to develop postgresql-base applications. In the first chapter, you will learn to use several widgets in PyQt5: Display a welcome message; Use the Radio Button widget; Grouping radio buttons; Displays options in the form of a check box; and Display two groups of check boxes. In chapter two, you will learn to use the following topics: Using Signal / Slot Editor; Copy and place text from one Line Edit widget to another; Convert data types and make a simple calculator; Use the Spin Box widget; Use scrollbars and sliders; Using the Widget List; Select a number of list items from one Widget List and display them on another Widget List widget; Add items to the Widget List; Perform operations on the Widget List; Use the Combo Box widget; Displays data selected by the user from the Calendar Widget; Creating a hotel reservation application; and Display tabular data using Table Widgets. In the next two chapters, you will get introduction of postgresql. And then, you will learn querying data from the postgresql using Python including establishing a database connection, creating a statement object, executing the query, processing the resultset object, querying data using a statement that returns multiple rows, querying data using a statement that has parameters, inserting data into a table using Python, updating data in postgresql database using Python, calling postgresql stored function using Python, deleting data from a postgresql table using Python, and postgresql Python transaction. In the fourth chapter, you will study: Creating the initial three table in the School database project: Teacher table, Class table, and Subject table; Creating database configuration files; Creating a Python GUI for viewing and navigating the contents of each table. Creating a Python GUI for inserting and editing tables; and Creating a Python GUI to merge and query the three tables. In last chapter, you will learn: Creating the main form to connect all forms; Creating a project that will add three more tables to the school database: the Student table, the Parent table, and the Tuition table; Creating a Python GUI to view and navigate the contents of each table; Creating a Python GUI for editing, inserting, and deleting records in each table; Create a Python GUI to merge and query the three tables and all six tables. Finally, this book is hopefully useful for you.

Kasus 1: IMAGE FUSION DENGAN MATLAB GUI Menggunakan Transformasi Wavelet Diskret Kompleks Dual-Tree Pada kasus ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan operasi fusi citra terhadap citra keabuan dan citra berwarna menggunakan metode transformasi wavelet diskret dual-tree. Ada empat jenis derau yang dipakai: Gaussin, Poisson, Salt & Pepper, dan Speckle. Beberapa kontrol GUI MATLAB yang digunakan seperti Axes, Listbox, Table, Push Button, Edit Text, Static Text, dan Panel. Hasil fusi citra (image fusion) kemudian akan ditampilkan secara visual dan enam parameter kinerja: RMSE, PFE, MAE, CORR, SNR, PSNR, akan ditampilkan pada grafik batang. Kasus 2: IMAGE FUSION DENGAN MATLAB GUI Menggunakan Transformasi Wavelet Diskret Stasioner Satu Level dan Dua Level Pada kasus ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan operasi fusi citra terhadap citra keabuan dan citra berwarna menggunakan metode Transformasi Wavelet Diskret Stasioner Satu level dan Dua level. Ada empat jenis derau yang dipakai: Gaussin, Poisson, Salt & Pepper, dan Speckle. Beberapa kontrol GUI MATLAB yang digunakan seperti Axes, Listbox, Table, Push Button, Edit Text, Static Text, dan Panel. Hasil fusi citra (image fusion) kemudian akan ditampilkan secara visual dan enam parameter kinerja: RMSE, PFE, MAE, CORR, SNR, PSNR, akan ditampilkan pada grafik batang. Kasus 3: IMAGE FUSION DENGAN MATLAB GUI Menggunakan Metode Dekomposisi Nilai Singular Resolusi Jamak (MSVD, Multi-Resolution Singular Value Decomposition) Buku ini diperuntukkan bagi mereka yang suka keahlian praktis sekaligus mendapatkan keuntungan pengetahuan. Dengan tidak bertele-tele, pada buku ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan operasi fusi citra terhadap citra keabuan dan citra berwarna menggunakan metode Metode Dekomposisi Nilai Singular Resolusi Jamak (MSVD, Multi-Resolution Singular Value Decomposition). Untuk menguji kehandalan metode ini, ada empat jenis derau yang dipakai: Gaussin, Poisson, Salt & Pepper, dan Speckle. Beberapa kontrol GUI MATLAB yang digunakan seperti Axes, Listbox, Table, Push Button, Edit Text, Static Text, dan Panel. Hasil

fusi citra (image fusion) kemudian akan ditampilkan secara visual dan enam parameter kinerja: RMSE, PFE, MAE, CORR, SNR, PSNR, akan ditampilkan pada grafik batang. Kasus 4: IMAGE FUSION Dengan MATLAB GUI: Teknik Fusi Citra Berwarna Berbasis Transformasi Kosinus Diskret Dan Piramida Laplacian Kasus ini diperuntukkan bagi mereka yang suka keahlian praktis sekaligus mendapatkan keuntungan pengetahuan. Dengan tidak bertele-tele, pada buku ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan teknik fusi citra terhadap citra keabuan dan citra berwarna menggunakan metode Teknik Fusi Citra Berbasis Transformasi Kosinus Diskret dan Piramida Laplacian. Untuk menguji kehandalan metode ini, ada empat jenis derau yang dipakai: Gaussin, Poisson, Salt & Pepper, dan Speckle. Beberapa kontrol GUI MATLAB yang digunakan seperti Axes, Listbox, Table, Push Button, Edit Text, Static Text, dan Panel. Hasil fusi citra (image fusion) kemudian akan ditampilkan secara visual dan enam parameter kinerja: RMSE, PFE, MAE, CORR, SNR, PSNR, akan ditampilkan pada grafik batang. Kasus 5: IMAGE FUSION Dengan MATLAB GUI: Teknik Fusi Citra Menggunakan Kriteria Ketajaman Berbasis Gradien Kasus ini dapat dipakai sebagai tutorial bagi mereka yang ingin bereksperimen mengembangkan GUI MATLAB, baik untuk kepentingan penelitian pemrosesan citra digital maupun kepentingan praktis lain. Buku ini dikhususkan bagi mereka yang suka keahlian praktis sekaligus mendapatkan keuntungan pengetahuan. Dengan tidak bertele-tele, pada buku ini, Anda akan merancang sendiri, secara bertahap, GUI MATLAB untuk melakukan operasi fusi citra terhadap citra keabuan dan citra berwarna menggunakan Teknik Fusi Citra Menggunakan Kriteria Ketajaman Berbasis Gradien. Untuk menguji kehandalan metode ini, ada empat jenis derau yang dipakai: Gaussin, Poisson, Salt & Pepper, dan Speckle.

This book constitutes the refereed proceedings of the 4th International Workshop on Digital Watermarking Secure Data Management, IWDW 2005, held in Siena, Italy in September 2005. The 31 revised full papers presented were carefully reviewed and selected from 74 submissions. The papers are organized in topical sections on steganography and steganalysis, fingerprinting, watermarking, attacks, watermarking security, watermarking of unconventional media, channel coding and watermarking, theory, and applications.

Digital watermarking is a key ingredient to copyright protection. It provides a solution to illegal copying of digital material and has many other useful applications such as broadcast monitoring and the recording of electronic transactions. Now, for the first time, there is a book that focuses exclusively on this exciting technology. Digital Watermarking covers the crucial research findings in the field: it explains the principles underlying digital watermarking technologies, describes the requirements that have given rise to them, and discusses the diverse ends to which these technologies are being applied. As a result, additional groundwork is laid for future developments in this field, helping the reader understand and anticipate new approaches and applications. * Emphasizes the underlying watermarking principles that are relevant for all media: images, video, and audio. * Discusses a wide variety of applications, theoretical principles, detection and embedding concepts and the key properties of digital watermarks--robustness, fidelity, data payload, and security * Examines copyright protection and many other applications, including broadcast monitoring, transaction tracking, authentication, copy control, and device control. * Presents a series of detailed examples called "Investigations" that illustrate key watermarking concepts and practices. * Includes an appendix in the book and on the web containing the source code for the examples. * Includes a comprehensive glossary of watermarking terminology

As future generation electrical, information engineering and mechatronics become specialized and fragmented, it is easy to lose sight of the fact that many topics in these areas have common threads and, because of this, advances in one discipline may be transmitted to others. The 2011 International Conference on Electrical, Information Engineering and Mechatronics (EIEM 2011) is the first conference that attempts to follow the above idea of hybridization in electrical, information engineering, mechatronics and applications. This Proceedings of the 2011 International Conference on Electrical, Information Engineering and Mechatronics provides a forum for engineers and scientists to address the most innovative research and development including technical challenges and social, legal, political, and economic issues, and to present and discuss their ideas, results, works in progress and experience on all aspects of electrical, information engineering, mechatronics and applications. Engineers and scientists in academia, industry, and government will find a insights into the solutions that combine ideas from multiple disciplines in order to achieve something more significant than the sum of the individual parts in all aspects of electrical, information engineering, mechatronics and applications.

This book presents the state-of-the-arts application of digital watermarking in audio, speech, image, video, 3D mesh graph, text, software, natural language, ontology, network stream, relational database, XML, and hardware IPs. It also presents new and recent algorithms in digital watermarking for copyright protection and discusses future trends in the field. Today, the illegal manipulation of genuine digital objects and products represents a considerable problem in the digital world. Offering an effective solution, digital watermarking can be applied to protect intellectual property, as well as fingerprinting, enhance the security and proof-of-authentication through unsecured channels.

This book provides a comprehensive study in digital image interpolation with theoretical, analytical and Matlab® implementation. It includes all historically and practically important interpolation algorithms, accompanied with Matlab® source code on a website, which will assist readers to learn and understand the implementation details of each presented interpolation algorithm. Furthermore, sections in fundamental signal processing theories and image quality models are also included. The authors intend for the book to help readers develop a thorough consideration of the design of image interpolation algorithms and applications for their future research in the field of digital image processing. Introduces a wide range of traditional and advanced image interpolation methods concisely and provides thorough treatment of theoretical foundations Discusses in detail the assumptions and limitations of presented algorithms Investigates a variety of interpolation and implementation methods including transform domain, edge-directed, wavelet and scale-space, and fractal based methods Features simulation results for comparative analysis, summaries and computational and analytical exercises at the end of each chapter Digital Image Interpolation in Matlab® is an excellent guide for researchers and engineers working in digital imaging and digital video technologies. Graduate students studying digital image processing will also benefit from this practical reference text.

Digital Watermarking4th International Workshop, IWDW 2005, Siena, Italy, September 15-17, 2005, ProceedingsSpringer Science & Business Media

In this book, you will create three desktop applications using Java GUI and PostgreSQL. In this book, you will learn how to build from scratch a PostgreSQL database management system using Java. In designing a GUI and as an IDE, you will make use of the NetBeans tool. Gradually and step by step, you will be taught how to utilize PostgreSQL in Java. In chapter one, you will create School database and its six tables. In chapter two, you will study: Creating the initial three table projects in the school database: Teacher table, TClass table, and Subject table; Creating database configuration files; Creating a Java GUI for viewing and navigating the contents of each table; Creating a Java GUI for inserting and editing tables; and Creating a Java GUI to join and query the three tables. In chapter three, you will learn: Creating the main form to connect all forms; Creating a project will add three more tables to the school database: the Student table, the Parent table, and Tuition table; Creating a Java GUI to view and navigate the contents of each table; Creating a Java GUI for editing, inserting, and deleting records in each table; Creating a Java GUI to join and query the three tables and all six. In chapter four, you will study how to query the six tables. In chapter five, you will learn the basics of cryptography using Java. Here, you will learn how to write a Java program to count Hash, MAC (Message Authentication Code), store keys in a KeyStore, generate PrivateKey and PublicKey, encrypt / decrypt data, and generate and verify digital prints. In chapter six, you will create Bank database and its tables. In chapter seven, you will learn how to create and store salt passwords and verify them. You will create a Login table. In this case, you will see how to create a Java GUI using NetBeans to implement it. In addition to the Login table, in this chapter you will also create a Client table. In the case of the Client table, you will learn how to generate and save public and private keys into a database. You will also learn how to encrypt / decrypt data and save the results into a database. In chapter eight, you will create an Account table. This account table has the following ten fields: account_id (primary key), client_id (primarykey), account_number, account_date, account_type, plain_balance, cipher_balance, decipher_balance, digital_signature, and signature_verification. In this case, you will learn how to implement generating and verifying digital prints and storing the results into a database. In chapter nine, you will create a Client_Data table, which has the following seven fields: client_data_id (primary key), account_id (primary_key), birth_date, address, mother_name, telephone, and photo_path. In chapter ten, you will be taught how to create Crime database and its tables. In chapter eleven, you will be taught how to extract image features, utilizing BufferedImage class, in Java GUI. In chapter twelve, you will be taught to create Java GUI to view, edit, insert, and delete Suspect table data. This table has eleven columns: suspect_id (primary key), suspect_name, birth_date, case_date, report_date, suspect_ status, arrest_date, mother_name, address, telephone, and photo. In chapter thirteen, you will be taught to create Java GUI to view, edit, insert, and delete Feature_Extraction table data. This table has eight columns: feature_id (primary key), suspect_id (foreign key), feature1, feature2, feature3, feature4, feature5, and feature6. In chapter fourteen, you will add two tables: Police_Station and Investigator. These two tables will later be joined to Suspect table through another table, File_Case, which will be built in the seventh chapter. The Police_Station has six columns: police_station_id (primary key), location, city, province, telephone, and photo. The Investigator has eight columns: investigator_id (primary key), investigator_name, rank, birth_date, gender, address, telephone, and photo. Here, you will design a Java GUI to display, edit, fill, and delete data in both tables. In chapter fifteen, you will add two tables: Victim and File_Case. The File_Case table will connect four other tables: Suspect, Police_Station, Investigator and Victim. The Victim table has nine columns: victim_id (primary key), victim_name, crime_type, birth_date, crime_date, gender, address, telephone, and photo. The File_Case has seven columns: file_case_id (primary key), suspect_id (foreign key), police_station_id (foreign key), investigator_id (foreign key), victim_id (foreign key), status, and description. Here, you will also design a Java GUI to display, edit, fill, and delete data in both tables.

The book gathers papers addressing state-of-the-art research in all areas of Information and Communication Technologies and their applications in intelligent computing, cloud storage, data mining and software analysis. It presents the outcomes of the third International Conference on Information and Communication Technology for Intelligent Systems, which was held on April 6–7, 2018, in Ahmedabad, India. Divided into two volumes, the book discusses the fundamentals of various data analytics and algorithms, making it a valuable resource for researchers' future studies.

Networking capabilities have been significantly enhanced in recent years. With emerging advancements in technology, wireless communication has increased exponentially. Routing Protocols and Architectural Solutions for Optimal Wireless Networks and Security is a comprehensive resource on the latest technological advancements in designing secure wireless networks and secure transmission of data, voice and video over wireless networks and other innovations. Featuring comprehensive coverage across a range of relevant topics such as network planning, radio resource allocation, and broadband wireless networks, this publication is an ideal reference source for network designers, industries, researchers, educators, and governments who are involved in designing and implementing security and wireless networks and applications.

Meant for students and practicing engineers, this book provides a clear, comprehensive and up-to-date introduction to Digital Image Processing in a pragmatic style. An illustrative approach, practical examples and MATLAB applications given in the book help in bringing the theory to life.

This book presents medical image watermarking techniques and algorithms for telemedicine and other emerging applications. This book emphasizes on medical image watermarking to ensure the authenticity of transmitted medical information. It begins with an introduction of digital watermarking, important characteristics, novel applications, different watermarking attacks and standard benchmark tools. This book also covers spatial and transform domain medical image watermarking techniques and their merits and limitations. The authors have developed improved/novel watermarking techniques for telemedicine applications that offer higher robustness, better perceptual quality and increased embedding capacity and secure watermark. The suggested methods may find potential applications in the prevention of patient identity theft and health data management issues which is a growing concern in telemedicine applications. This book provides a sound platform for understanding the medical image watermarking paradigm for researchers in the field and advanced-level students. Industry professionals working in this field, as well as other emerging applications demanding robust and secure watermarking will find this book useful as a reference.

Steganography is the art of secret writing. The purpose of steganography is to hide the presence of a message from the intruder by using state-of-the-art methods, algorithms, architectures, models, and methodologies in the domains of cloud, internet of things (IoT), and the Android platform. Though security controls in cloud computing, IoT, and Android platforms are not much different than security controls in an IT environment, they might still present different types of risks to an organization than the classic IT solutions. Therefore, a detailed discussion is needed in case there is a breach in security. It is important to review the security aspects of cloud, IoT, and Android platforms related to steganography to determine how this new technology is being utilized and improved continuously to protect information digitally. The benefits and challenges, along with the current and potential developments for the future, are important keystones in this critical area of security research. Multidisciplinary Approach to Modern Digital Steganography reviews the security aspects of cloud, IoT, and Android platforms related to steganography and addresses emerging security concerns, new algorithms, and case studies in the field. Furthermore, the book presents a new approach to secure data storage on cloud infrastructure and IoT along with including discussions on optimization models and security controls that could be implemented. Other important topics include data transmission, deep learning techniques, machine learning, and both image and text stenography. This book is essential for forensic engineers, forensic analysts, cybersecurity analysts, cyber forensic examiners, security engineers, cybersecurity network analysts, cyber network defense analysts, and digital forensic examiners along with practitioners, researchers, academicians, and students interested in the latest techniques and state-of-the-art methods

in digital steganography.
Buku ini sangat cocok untuk mereka yang ingin belajar MATLAB GUI dengan mempelajarinya secara praktek. Ada delapan kasus yang dapat dipelajari di sini, semuanya memandu Anda untuk langsung terjun mempraktekkan inti dari MATLAB GUI. Ada banyak buku yang berkaitan dengan MATLAB GUI, tetapi sebagian besar hanya berupa pengantar, tidak mengajari Anda secara detil dan langkah demi langkah. Buku ini, secara bertahap, mengajari Anda untuk mengkonstruksi MATLAB GUI secara mendetail. Kode sumber juga disediakan agar Anda bisa memodifikasinya untuk kepentingan praktis maupun akademis.
This Book Is A Tutorial On Image Processing. Each Chapter Explains Basic Concepts With Words And Figures, Shows Image Processing Results With Photographs, And Implements The Operations In C. The C Code In This Book Is Based On A Series Of Articles Published In The C Users Journal From 1990 Through 1993, And Includes Three Entirely New Chapters And Six New Appendices. The New Chapters Are 1) An Introduction To The Entire System, 2) A Set Of Routines For Boolean Operations On Images -- Such As Subtracting Or Adding One With Another, 3) A Batch System For Performing Offline Processing (Such As Overnight For Long Involved Manipulations). The C Image Processing System (Cips) Works With Tag Image File Format (Tiff) Gray Scale Images. The Entire System Has Been Updated From The Original Publications To Comply With The Tiff 6.0 Specification From June 1993 (The Magazine Articles Were Written For The Tiff 5.0 Specification.) The Text And Accompanying Source Code Provide Working Edge Detectors, Filters, And Histogram Equalizers, I/O Routines, Display And Print Procedures That Are Ready To Use, Or Can Be Modified For Special Applications. Print Routines Are Provided For Laser Printers, Graphics Printers, And Character Printers. Display Procedures Are Provided For Monochrome, Cga, Vga, And Ega Monitors. All Of These Functions Are Provided In A System That Will Run On A Garden Variety Pc, Not Requiring A Math Co-Processor, Frame Grabber, Or Super Vga Monitor.
This book presents an introduction to the principles of the fast Fourier transform. This book covers FFTs, frequency domain filtering, and applications to video and audio signal processing. As fields like communications, speech and image processing, and related areas are rapidly developing, the FFT as one of essential parts in digital signal processing has been widely used. Thus there is a pressing need from instructors and students for a book dealing with the latest FFT topics. This book provides thorough and detailed explanation of important or up-to-date FFTs. It also has adopted modern approaches like MATLAB examples and projects for better understanding of diverse FFTs.
This book constitutes the refereed proceedings of the 17th International Workshop on Digital Forensics and Watermarking, IWDW 2018, held on Jeju Island, Korea, in October 2018.The 25 papers presented in this volume were carefully reviewed and selected from 43 submissions. The contributions are covering the following topics: deep neural networks for digital forensics; steganalysis and identification; watermarking; reversible data hiding; steganographic algorithms; identification and security; deep generative models for forgery and its detection.
This book constitutes the refereed proceedings of the 5th International Workshop on Digital Watermarking Secure Data Management, IWDW 2006, held in Jeju Island, Korea in November 2006. The 34 revised full papers presented together with 3 invited lectures cover both theoretical and practical issues in digital watermarking.
This book illustrates the commonly used and novel approaches of audio watermarking for copyrights protection. The author examines the theoretical and practical step by step guide to the topic of data hiding in audio signal such as music, speech, broadcast. The book covers new techniques developed by the authors are fully explained and MATLAB programs, for audio watermarking and audio quality assessments and also discusses methods for objectively predicting the perceptual quality of the watermarked audio signals. Explains the theoretical basics of the commonly used audio watermarking techniques Discusses the methods used to objectively and subjectively assess the quality of the audio signals Provides a comprehensive well tested MATLAB programs that can be used efficiently to watermark any audio media