Digital Watermarking and Steganography 2nd Ed The Morgan Kaufmann Series In Multimedia Information And Systems


Digital Watermarking This book contains the thoroughly refereed post-conference proceedings of the 13th Information Hiding Conference, IH 2011, held in Prague, Czech Republic, in May 2011. Included in this volume are 23 carefully reviewed papers that were selected out of 69 submissions. The contributions are organized in topical sections on: fingerprinting, anonymity and privacy, steganography and steganalysis, watermarking, digital rights management and digital forensics, and digital hiding in unusual context. Also included are the papers that were presented as part of the special session dedicated to the BOSS (Break Our Steganographic System) contest.

Digital Forensics and Watermarking This book constitutes the refereed proceedings of the 8th International Workshop, IWDW 2009, held in Guildford, Surrey, UK, August 24-26, 2009. The 25 revised full papers, including 4 poster presentations, presented together with 3 invited papers were carefully reviewed and selected from 50 submissions. The papers are organized in topical sections on robust watermarking, video watermarking, steganography and steganalysis, multimedia watermarking and security protocols, as well as image forensics and authentication.

Digital Forensics and Watermarking This book intends to provide a comprehensive overview on different aspects of mechanisms and techniques for information security. It is written for students, researchers, and professionals studying in the field of multimedia security and steganography. Multimedia security and steganography is especially relevant due to the global scale of digital multimedia and the rapid growth of the Internet. Digital watermarking technology can be used to guarantee authenticity and can be applied as proof that the content has not been altered since insertion. Updated techniques and advances in watermarking are explored in this new edition. The combinational spatial and frequency domains watermarking technique provides a new concept of enlarging the embedding capacity of watermarks. The genetic algorithm (GA) based watermarking technique solves the rounding error problem and provide an efficient embedding approach. Each chapter provides the reader with a fundamental, theoretical framework, while developing the extensive advanced techniques and considering the essential principles of the digital watermarking and steganographic systems. Several robust algorithms that are presented throughout illustrate the framework and provide assistance and tools in understanding and implementing the fundamental principles.
Genetic and Evolutionary Computing This book intends to provide a comprehensive overview on different aspects of mechanisms and techniques for information security. It is written for students, researchers, and professionals studying in the field of multimedia security and steganography. Multimedia security and steganography is especially relevant due to the global scale of digital multimedia and the rapid growth of the Internet. Digital watermarking technology can be used to guarantee authenticity and can be applied as proof that the content has not been altered since insertion. Updated techniques and advances in watermarking are explored in this new edition. The combinational spatial and frequency domains watermarking technique provides a new concept of enlarging the embedding capacity of watermarks. The genetic algorithm (GA) based watermarking technique solves the rounding error problem and provide an efficient embedding approach. Each chapter provides the reader with a fundamental, theoretical framework, while developing the extensive advanced techniques and considering the essential principles of the digital watermarking and steganographic systems. Several robust algorithms that are presented throughout illustrate the framework and provide assistance and tools in understanding and implementing the fundamental principles.

Digital Forensics and Watermarking This book constitutes the thoroughly refereed postproceedings of the Second International Workshop on Digital Watermarking, IWDW 2003, held in Seoul, Korea, in October 2004. The 44 revised full papers presented together with 4 invited articles were carefully selected during two rounds of reviewing and improvement from more than 90 submissions. The papers address all current aspects of digital watermarking, in particular theoretical modeling, robustness, capacity, imperceptibility and the human perceptual system, security and attacks, watermarking systems and implementations, and integration of digital watermarking in digital rights management.

Multimedia Information Hiding Technologies and Methodologies for Controlling Data This volume constitutes the proceedings of the 19th International Workshop on Digital Forensics and Watermarking, IWDW 2020, held in Melbourne, VIC, Australia, in November 2020. The 20 full papers in this volume were carefully reviewed and selected from 43 submissions. They cover topics such as: novel research, development and application of digital watermarking and forensics techniques for multimedia security.

Digital Watermarking and Steganography, Second Edition Annotation This work explores the myriad of issues regarding multimedia security. It covers various issues, including perceptual fidelity analysis, image, audio, and 3D mesh object watermarking, medical watermarking, and error detection (authentication) and concealment.

Advances in Cyber Security In addition to providing students, researchers, and other professionals with mechanical information regarding digital watermarking and steganography, this work also provides them with the framework needed to develop extensive advanced algorithms. It shows how robust high-capacity watermarking techniques can be successfully used to enlarge the hiding capacity while maintaining the robustness of the watermark. Several robust algorithms are presented to illustrate the framework and provide assistance in understanding and implementing fundamental principles. Alternatives to traditional strategies are presented. The principles taught are illustrated with plentiful graphs and examples in order to simplify the problems and make highly complicated theories readily understandable.

Cryptographic and Information Security Approaches for Images and Videos This volume of Advances in Intelligent Systems and Computing contains accepted papers presented at ICGEC 2014, the 8th International Conference on Genetic and Evolutionary Computing. The conference this year was technically co-sponsored by Nanchang Institute of Technology in China, Kaohsiung University of Applied Science in Taiwan, and VSB-Technical University of Ostrava. ICGEC 2014 is held from 18-20 October 2014 in Nanchang, China. Nanchang is one of is the capital of Jiangxi Province in southeastern China, located in the north-central portion of the province. As it is bounded on the west by the Jiuling Mountains, and on the east by Poyang Lake, it is famous for its scenery, rich history and cultural sites. Because of its central location relative to the Yangtze and Pearl River Delta regions, it is a major railroad hub in Southern China. The conference is intended as an international forum for the researchers and professionals in all areas of genetic and evolutionary computing.

Digital-Forensics and Watermarking This six volume set LNCS 11063 – 11068 constitutes the thoroughly refereed conference proceedings of the 4th International Conference on Cloud Computing and Security, ICCCS 2018, held in Haikou, China, in June 2018. The 386 full papers of these six volumes were carefully reviewed and selected from 1743 submissions. The papers cover ideas and achievements in the theory and practice of all areas of inventive systems which includes control, artificial intelligence, automation systems, computing systems, electrical and informative systems. The six volumes are arranged according to the subject areas as follows: cloud computing, cloud security, encryption, information hiding, IoT security, multimedia forensics.
Digital Audio Watermarking This book constitutes the refereed proceedings of the 4th International Conference on Information Systems Security, ICISS 2008, held in Hyderabad, India, in December 2008. The 15 revised full papers, 4 short papers, and 2 research reports presented together with 4 keynote talks were carefully reviewed and selected from 81 submissions. The papers span a wide range of topics including access control, cryptography, forensics, formal methods and language-based security, intrusion detection, malware defense, network and Web security, operating system security, and privacy, and are organized in topical sections on languages and formal methods, protocols, ongoing research, intrusion detection, biometrics, forensics and steganography, and practical applications.

Machine Learning: Concepts, Methodologies, Tools and Applications 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.

Signal Processing, Image Processing and Pattern Recognition, This book presents covert, semi-covert and overt techniques for communication over printed media by modifying images, texts or barcodes within the document. Basic and advanced techniques are discussed aimed to modulate information into images, texts and barcodes. Conveying information over printed media can be useful for content authentication, author copyright, information and piracy product deterrent, side information for marketing, among other applications. Practical issues are discussed and experiments are provided to evaluate competitive approaches for hard-copy communication. This book is a useful resource for researchers, practitioners and graduate students in the field of hard-copy communication by providing the fundamentals, basic and advanced techniques as examples of approaches to address the hard-copy media distortions and particularities.

Digital Watermarking and Steganography 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.

Proceedings of All India Seminar on Biomedical Engineering 2012 (AISOBE 2012) Digital audio, video, images, and documents are flying through cyberspace to their respective owners. Unfortunately, along the way, individuals may choose to intervene and take this content for themselves. Digital watermarking and steganography technology greatly reduces the instances of this by limiting or eliminating the ability of third parties to decipher the content that he has taken. The many techniques of digital watermarking (embedding a code) and steganography (hiding information) continue to evolve as applications that necessitate them do the same. The authors of this second edition provide an update on the framework for applying these techniques that they provided researchers and professionals in the first well-received edition. Steganography and steganalysis (the art of detecting hidden information) have been added to a robust treatment of digital watermarking, as many in each field research and deal with the other. New material includes watermarking with side information, QIM, and dirty-paper codes. The revision and inclusion of new material by these influential authors has created a must-own book for anyone in this profession. This new edition now contains essential information on steganalysis and steganography New concepts and new applications including QIM introduced Digital watermark embedding is given a complete update with new processes and applications.

Information Hiding "This reference offers a wide-ranging selection of key research in a complex field of study, discussing topics ranging from using machine learning to improve the effectiveness of agents and multi-agent systems to developing machine learning software for high frequency trading in financial markets"--Provided by publishe

Multimedia Security This book presents refereed proceedings of the First International Conference on Advances in Cyber Security, AcSeS 2019, held in Penang, Malaysia, in July-August 2019. The 25 full papers and 1 short paper were carefully reviewed and selected from 87 submissions. The papers are organized in topical sections on internet of things, industry and blockchain, and cryptology; digital forensics and surveillance, botnet and malware, and DDoS and intrusion detection/prevention; ambient cloud and edge computing, wireless and cellular communication.
Digital Watermarking This book offers comprehensive coverage on the most important aspects of audio watermarking, from classic techniques to the latest advances, from commonly investigated topics to emerging research subdomains, and from the research and development achievements to date, to current limitations, challenges, and future directions. It also addresses key topics such as reversible audio watermarking, audio watermarking with encryption, and imperceptibility control methods. The book sets itself apart from the existing literature in three main ways. Firstly, it not only reviews classical categories of audio watermarking techniques, but also provides detailed descriptions, analysis and experimental results of the latest work in each category. Secondly, it highlights the emerging research topic of reversible audio watermarking, including recent research trends, unique features, and the potentials of this subdomain. Lastly, the joint consideration of audio watermarking and encryption is also reviewed. With the help of this concept, more secure audio watermarking systems can be developed, which meet the requirements for security and privacy in cloud-based networks and systems. Accordingly, the book serves as a tutorial suitable for readers with a general knowledge of audio signal processing as well as experts in related areas, helping these readers understand the basic principles and the latest advances, concepts and applications of audio watermarking.

Digital Forensics and Watermarking This book proposes new algorithms to ensure secured communications and prevent unauthorized data exchange in secured multimedia systems. Focusing on numerous applications’ algorithms and scenarios, it offers an in-depth analysis of data hiding technologies including watermarking, cryptography, encryption, copy control, and authentication. The authors present a framework for visual data hiding technologies that resolves emerging problems of modern multimedia applications in several contexts including the medical, healthcare, education, and wireless communication networking domains. Further, it introduces several intelligent security techniques with real-time implementation. As part of its comprehensive coverage, the book discusses contemporary multimedia authentication and fingerprinting techniques, while also proposing personal authentication/recognition systems based on hand images, surveillance system security using gait recognition, face recognition under restricted constraints such as dry/wet face conditions, and three-dimensional face identification using the approach developed here. This book equips perception technology professionals with the latest technologies, techniques, and strategies for multimedia security systems, offering a valuable resource for engineers and researchers working to develop security systems.

Handbook of Research on Threat Detection and Countermeasures in Network Security This book discusses digital audio watermarking copyright assurance. The author first outlines the topic of watermarking data that can be used for copyright assurance that incorporates text messages, copyright audio, handwritten text, logo and cell phone numbers. The objective of this book is to propose a new algorithm that can embed and extract the watermarking information. The execution of the newly proposed algorithm is surveyed by testing data utilizing a group of various audio file types and against various attacks. The book also presents a new digital watermark algorithm that preserves the copyright property of the audio files. To do this, the author uses two techniques -- DWT and SVD -- with the combination of other techniques (DFT and DSSS) to enhance security and also provide high robustness and imperceptibility against various malicious attacks.

Smart Innovations in Communication and Computational Sciences The revolutionary way in which modern technologies have enabled us to exchange information with ease has led to the emergence of interdisciplinary research in digital forensics and investigations, which aims to combat the abuses of computer technologies. Emerging Digital Forensics Applications for Crime Detection, Prevention, and Security presents various digital crime and forensic disciplines that use electronic devices and software for crime prevention and detection. This book provides theoretical and empirical research articles and case studies for a broad range of academic readers as well as professionals, industry consultants, and practitioners involved in the use, design, and development of techniques related to digital forensics and investigation.

Cloud Computing and Security This book contains the thoroughly refereed post-conference proceedings of the 14th Information Hiding Conference, IH 2012, held in Berkeley, CA, USA, in May 2012. The 18 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on multimedia forensics and counter-forensics, steganalysis, data hiding in unusual content, steganography, covert channels, anonymity and privacy, watermarking, and fingerprinting.

Networked Digital Technologies, Part I Steganography is the art and science of hiding information in inconspicuous cover data so that even the existence of a secret message is kept confidential, and steganalysis is the task of detecting secret messages in covers. This research monograph focuses on the role of cover signals, the distinguishing feature that requires us to treat steganography and steganalysis differently from other secrecy techniques. The main theoretical contribution of the book is a proposal to structure approaches to provably secure steganography according to their implied assumptions on the limits of the adversary and on the nature of covers. A further contribution is the emphasis on dealing with heterogeneity in cover distributions, crucial for security analyses. The author's work complements
earlier approaches based on information, complexity, probability and signal processing theory, and he presents numerous practical implications. The scientific advances are supported by a survey of the classical steganography literature; a new proposal for a unified terminology and notation that is maintained throughout the book; a critical discussion of the results achieved and their limitations; and an assessment of the possibility of transferring elements of this research's empirical perspective to other domains in information security. The book is suitable for researchers working in cryptography and information security, practitioners in the corporate and national security domains, and graduate students specializing in multimedia security and data hiding.

Information Hiding

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.

Information Systems Security

Contemporary society resides in an age of ubiquitous technology. With the consistent creation and wide availability of multimedia content, it has become imperative to remain updated on the latest trends and applications in this field. Digital Multimedia: Concepts, Methodologies, Tools, and Applications is an innovative source of scholarly content on the latest trends, perspectives, techniques, and implementations of multimedia technologies. Including a comprehensive range of topics such as interactive media, mobile technology, and data management, this multi-volume book is an ideal reference source for engineers, professionals, students, academics, and researchers seeking emerging information on digital multimedia.

Multimedia Analysis, Processing and Communications

Cyber attacks are rapidly becoming one of the most prevalent issues in the world. As cyber crime continues to escalate, it is imperative to explore new approaches and technologies that help ensure the security of the online community. The Handbook of Research on Threat Detection and Countermeasures in Network Security presents the latest methodologies and trends in detecting and preventing network threats. Investigating the potential of current and emerging security technologies, this publication is an all-inclusive reference source for academicians, researchers, students, professionals, practitioners, network analysts, and technology specialists interested in the simulation and application of computer network protection.

Digital Watermarking

"This book provides solutions to these challenges, practices and understanding of contemporary theories and empirical analysis for systems engineering in a way that achieves service excellence"--Provided by publisher.

Information Hiding

As future generation information technology (FGIT) becomes specialized and fragmented, it is easy to lose sight that many topics in FGIT have common threads and, because of this, advances in one discipline may be transmitted to others. Presentation of recent results obtained in different disciplines encourages this interchange for the advancement of FGIT as a whole. Of particular interest are hybrid solutions that combine ideas taken from multiple disciplines in order to achieve something more significant than the sum of the individual parts. Through such hybrid philosophy, a new principle can be discovered, which has the propensity to propagate throughout multifaceted disciplines. FGIT 2009 was the first mega-conference that attempted to follow the above idea of hybridization in FGIT in a form of multiple events related to particular disciplines of IT, conducted by separate scientific committees, but coordinated in order to expose the most important contributions. It included the following international conferences: Advanced Software Engineering and Its Applications (ASEA), Bio-Science and Bio-Technology (BSBT), Control and Automation (CA), Database Theory and Application (DTA), Disaster Recovery and Business Continuity (DRBC; published independently), Future Generation Communication and Networking (FGCN) that was combined with Advanced Communication and Networking (ACN), Grid and Distributed Computing (GDC), Multimedia, Computer Graphics and Broadcasting (MulGraB), Security Technology (SecTech), Signal Processing, Image Processing and Pattern Recognition (SIP), and e-Service, Science and Technology (UNESST).

Digital Watermarking and Steganography

This book constitutes the refereed proceedings of the 16th International Workshop on Digital Forensics and Watermarking, IWDW 2017, held in Magdeburg, Germany, in August 2017. The 30 papers presented in this volume were carefully reviewed and selected from 48 submissions. The contributions are covering the state-of-the-art theoretical and practical developments in the fields of digital watermarking, steganography and steganalysis, forensics and anti-forensics, visual cryptography, and other multimedia-related security issues. Also included are the papers on two special sessions on biometric image tampering detection and on emerging threats of criminal use of information hiding: usage scenarios and detection approaches.

Digital Watermarking and Steganography

This volume is a selected collection of papers presented and discussed at the International Conference "Advanced
Computing for Innovation (AComIn 2015)". The Conference was held at 10th -11th of November, 2015 in Sofia, Bulgaria and was aimed at providing a forum for international scientific exchange between Central/Eastern Europe and the rest of the world on several fundamental topics of computational intelligence. The papers report innovative approaches and solutions in hot topics of computational intelligence – advanced computing, language and semantic technologies, signal and image processing, as well as optimization and intelligent control.

Theoretical and Analytical Service-Focused Systems Design and Development The book presents the latest advances and research findings in the fields of computational science and communication. The areas covered include smart innovation; systems and technologies; embedded knowledge and intelligence; innovation and sustainability; advanced computing; and networking and informatics. It also focuses on the knowledge-transfer methodologies and the innovation strategies employed to make these effective. This fascinating compilation appeals to researchers, academics and engineers around the globe.

Digital Watermarking and Steganography The 22 full papers and 12 shorts papers presented in this volume were carefully reviewed and selected from 70 submissions. The contributions are covering the following topics: deep learning for multimedia security; digital forensics and anti-forensics; digital watermarking; information hiding; steganography and steganalysis; authentication and security.

Digital Forensics and Watermarking 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.

Robust and Secured Digital Audio Watermarking This book constitutes the thoroughly refereed post-proceedings of the 12th International Workshop on Digital-Forensics and Watermarking, IWDW 2013, held in Auckland, New Zealand, during October 2013. The 24 full and 13 poster papers, presented together with 2 abstracts, were carefully reviewed and selected from 55 submissions. The papers are organized in topical sections on steganography and steganalysis; visual cryptography; reversible data hiding; forensics; watermarking; anonymizing and plate recognition.

Innovative Approaches and Solutions in Advanced Intelligent Systems

Intelligent Techniques in Signal Processing for Multimedia Security This book has brought 24 groups of experts and active researchers around the world together in image processing and analysis, video processing and analysis, and communications related processing, to present their newest research results, exchange latest experiences and insights, and explore future directions in these important and rapidly evolving areas. It aims at increasing the synergy between academic and industry professionals working in the related field. It focuses on the state-of-the-art research in various essential areas related to emerging technologies, standards and applications on analysis, processing, computing, and communication of multimedia information. The target audience of this book is researchers and engineers as well as graduate students working in various disciplines linked to multimedia analysis, processing and communications, e.g., computer vision, pattern recognition, information technology, image processing, and artificial intelligence. The book is also meant to a broader audience including practicing professionals working in image/video applications such as image processing, video surveillance, multimedia indexing and retrieval, and so on. We hope that the researchers, engineers, students and other professionals who read this book would find it informative, useful and inspirational toward their own work in one way or another.

Fundamentals and Applications of Hardcopy Communication This book is a collection of articles presented by researchers and practitioners, including engineers, biologists, health professionals and informatics/computer scientists, interested in both theoretical advances and applications of information systems, artificial intelligence, signal processing, electronics and other engineering tools in areas related to biology and medicine in the All India Seminar on Biomedical Engineering 2012 (AISOB 2012), organized by The Institution of Engineers (India), Jabalpur Local Centre, Jabalpur, India during November 3-4, 2012. The content of the book is useful to doctors, engineers, researchers and academicians as well as industry professionals.
Emerging Digital Forensics Applications for Crime Detection, Prevention, and Security On behalf of the NDT 2010 conference, the Program Committee and Charles University in Prague, Czech Republic, we welcome you to the proceedings of the Second International Conference on ‘Networked Digital Technologies’ (NDT 2010). The NDT 2010 conference explored new advances in digital and Web technology applications. It brought together researchers from various areas of computer and information sciences who addressed both theoretical and applied aspects of Web technology and Internet applications. We hope that the discussions and exchange of ideas that took place will contribute to advancements in the technology in the near future. The conference received 216 papers, out of which 85 were accepted, resulting in an acceptance rate of 39%. These accepted papers are authored by researchers from 34 countries covering many significant areas of Web applications. Each paper was evaluated by a minimum of two reviewers. Finally, we believe that the proceedings document the best research in the studied areas. We express our thanks to the Charles University in Prague, Springer, the authors and the organizers of the conference.

Advanced Statistical Steganalysis This book presents essential principles, technical information, and expert insights on multimedia security technology. Illustrating the need for improved content security as the Internet and digital multimedia applications rapidly evolve, it presents a wealth of everyday protection application examples in fields including. Giving readers an in-depth introduction to different aspects of information security mechanisms and methods, it also serves as an instructional tool on the fundamental theoretical framework required for the development of advanced techniques.

Copyright code: 34d74c3dd5deba3c3982ecd4a6a341e3