

## Digital Image Processing Sanjay Sharma

The book presents a collection of peer-reviewed articles from the International Conference on Advances and Applications of Artificial Intelligence and Machine Learning - ICAAIML 2020. The book covers research in the areas of artificial intelligence, machine learning, and deep learning applications in healthcare, agriculture, business and security. This volume contains research papers from academicians, researchers as well as students. There are also papers on core concepts of computer networks, intelligent system design and deployment, real-time systems, wireless sensor network, sensors and sensor nodes, software engineering, and image processing. This book will be a valuable resource for students, academics and practitioners in industry working on AI applications.

The digital revolution is characterized by the convergence of technologies, rapidly advancing the 4th industrial revolution thereby blurring the lines between physical, digital and biological objects. The speed of the fourth revolution which evolves at an exponential rate cannot by any means be compared with any previous technologies. AI and IoT employ the interactions and operations in various fields such as home appliances, autonomous vehicles, nanotechnology, robotics, cognitive systems, self-driving cars and wearable devices. The potential of blockchain technology is realized in many sectors as security plays a crucial role everywhere. This book deeply discusses two of the most critical emerging fields of machine learning: blockchain technology and the Internet of Things.

Medical imaging is an important topic and plays a key role in robust diagnosis and patient care. It has experienced an explosive growth over the last few years due to imaging modalities such as X-rays, computed tomography (CT), magnetic resonance (MR) imaging, and ultrasound. This book focuses primarily on model-based segmentation techniques, which are applied to cardiac, brain, breast and microscopic cancer cell imaging. It includes contributions from authors working in industry and academia, and presents new material.

Spread in 133 articles divided in 20 sections the present treatises broadly discusses: Part 1: Image Processing Part 2: Radar and Satellite Image Processing Part 3: Image Filtering Part 4: Content Based Image Retrieval Part 5: Color Image Processing and Video Processing Part 6: Medical Image Processing Part 7: Biometric Part 8: Network Part 9: Mobile Computing Part 10: Pattern Recognition Part 11: Pattern Classification Part 12: Genetic Algorithm Part 13: Data Warehousing and Mining Part 14: Embedded System Part 15: Wavelet Part 16: Signal Processing Part 17: Neural Network Part 18: Nanotechnology and Quantum Computing Part 19: Image Analysis Part 20: Human Computer Interaction

This book constitutes the refereed proceedings of the First International Conference on Digital Image Processing and

Pattern Recognition, DPPR 2011, held in Tirunelveli, India, in September 2011. The 48 revised full papers were carefully reviewed and selected from about 400 submissions. The conference brought together leading researchers, engineers and scientists in the domain of Digital Image Processing and Pattern Recognition. The papers cover all theoretical and practical aspects of the field and present new advances and current research results in two tracks, namely: digital image processing and pattern recognition, and computer science, engineering and information technology.

Robotic marine vessels can be used for a wide range of purposes, including defence, marine science, offshore energy and hydrographic surveys, and environmental surveys and protection. Such vessels need to meet a variety of criteria: they must be able to operate in salt water, and to communicate and be controlled over large distances, even when submerged or in inclement weather. Further challenges include 3D navigation of individual vehicles, groups or squadrons. This book covers the current state of research in navigation, modelling and control of marine autonomous vehicles, and deals with various related topics, including collision avoidance, communication, and a range of applications. It provides valuable insights for an audience of researchers, academics and postgraduate students interested in autonomous marine vessels, robotics, and electrical and automobile engineering.

The definitive guide for ensuring data privacy and GDPR compliance Privacy regulation is increasingly rigorous around the world and has become a serious concern for senior management of companies regardless of industry, size, scope, and geographic area. The Global Data Protection Regulation (GDPR) imposes complex, elaborate, and stringent requirements for any organization or individuals conducting business in the European Union (EU) and the European Economic Area (EEA)—while also addressing the export of personal data outside of the EU and EEA. This recently-enacted law allows the imposition of fines of up to 5% of global revenue for privacy and data protection violations.

Despite the massive potential for steep fines and regulatory penalties, there is a distressing lack of awareness of the GDPR within the business community. A recent survey conducted in the UK suggests that only 40% of firms are even aware of the new law and their responsibilities to maintain compliance. The Data Privacy and GDPR Handbook helps organizations strictly adhere to data privacy laws in the EU, the USA, and governments around the world. This authoritative and comprehensive guide includes the history and foundation of data privacy, the framework for ensuring data privacy across major global jurisdictions, a detailed framework for complying with the GDPR, and perspectives on the future of data collection and privacy practices. Comply with the latest data privacy regulations in the EU, EEA, US, and others Avoid hefty fines, damage to your reputation, and losing your customers Keep pace with the latest privacy policies, guidelines, and legislation Understand the framework necessary to ensure data privacy today and gain insights on future privacy practices The Data Privacy and GDPR Handbook is an indispensable resource for Chief Data Officers,

Chief Technology Officers, legal counsel, C-Level Executives, regulators and legislators, data privacy consultants, compliance officers, and audit managers.

This volume constitutes the refereed proceedings of the International Conferences, FGCN and DCA 2012, held as part of the Future Generation Information Technology Conference, FGIT 2012, Kangwondo, Korea, in December 2012. The papers presented were carefully reviewed and selected from numerous submissions and focus on the various aspects of future generation communication and networking, and digital contents and applications.

The Department of Electronics and Communication Engineering of KIET Group of Institutions, Delhi-NCR organized the 4th International Conference ICCE-2020 during November 28-29, 2020. Information compiled in this book is based on the 114 research papers of excellent quality covering different domains of Electronics and Communication Engineering, Computer Science Engineering, Information Technology, Electrical Engineering, Electronics and Instrumentation Engineering. The subject areas treated in the book are: Satellite, Radar and Microwave Techniques, Secure, Smart, and Reliable Networks, Next Generation Networks, Devices & Circuits, Signal & Image Processing, New Emerging Technologies, having the central focus on Recent Trends in Communication & Electronics (ICCE-2020). In addition, a few themes based on Special Sessions have also been conducted in ICCE-2020. The objective of the book resulting from the 4th International Conference on Recent Trends in Communication & Electronics (ICCE-2020) is to provide a resource for the study and research work for an interested audience comprising of researchers, students, audience, and practitioners in the areas of Communications & Computing Systems. This book emphasizes the emerging building block of image processing domain, which is known as capsule networks for performing deep image recognition and processing for next-generation imaging science. Recent years have witnessed the continuous development of technologies and methodologies related to image processing, analysis and 3D modeling which have been implemented in the field of computer and image vision. The significant development of these technologies has led to an efficient solution called capsule networks [CapsNet] to solve the intricate challenges in recognizing complex image poses, visual tasks, and object deformation. Moreover, the breakneck growth of computation complexities and computing efficiency has initiated the significant developments of the effective and sophisticated capsule network algorithms and artificial intelligence [AI] tools into existence. The main contribution of this book is to explain and summarize the significant state-of-the-art research advances in the areas of capsule network [CapsNet] algorithms and architectures with real-time implications in the areas of image detection, remote sensing, biomedical image analysis, computer communications, machine vision, Internet of things, and data analytics techniques.

Medical imaging has transformed the ways in which various conditions, injuries, and diseases are identified, monitored, and treated. As various types of digital visual representations continue to advance and improve, new opportunities for their use in medical practice will likewise evolve. Medical Imaging: Concepts, Methodologies, Tools, and Applications presents a compendium of research on digital imaging technologies in a variety of healthcare settings. This multi-volume work contains practical examples

of implementation, emerging trends, case studies, and technological innovations essential for using imaging technologies for making medical decisions. This comprehensive publication is an essential resource for medical practitioners, digital imaging technologists, researchers, and medical students.

This book provides comprehensive details of all Swarm Intelligence based Techniques available till date in a comprehensive manner along with their mathematical proofs. It will act as a foundation for authors, researchers and industry professionals. This monograph will present the latest state of the art research being done on varied Intelligent Technologies like sensor networks, machine learning, optical fiber communications, digital signal processing, image processing and many more.

Nature-inspired computation is an interdisciplinary topic area that connects the natural sciences to computer science. Since natural computing is utilized in a variety of disciplines, it is imperative to research its capabilities in solving optimization issues. The Handbook of Research on Natural Computing for Optimization Problems discusses nascent optimization procedures in nature-inspired computation and the innovative tools and techniques being utilized in the field. Highlighting empirical research and best practices concerning various optimization issues, this publication is a comprehensive reference for researchers, academicians, students, scientists, and technology developers interested in a multidisciplinary perspective on natural computational systems.

Aims to produce a new understanding of the world significance of South Asian culture in multi-racist societies. It focuses on the role that contemporary South Asian dance music has played in the formation of a new urban cultural politics.

This book presents the proceedings of the International Conference on Wireless Intelligent and Distributed Environment for Communication (WIDECOM 2018), organized by SRM University, NCR Campus, New Delhi, India, February 16-18, 2018. The conference focuses on challenges with respect to the dependability of integrated applications and intelligence-driven security threats against the platforms supporting these applications. The WIDECOM 2018 proceedings features papers addressing issues related to the new dependability paradigms, design, control, and management of next generation networks, performance of dependable network computing and mobile systems, protocols that deal with network computing, mobile/ubiquitous systems, cloud systems, and Internet of Things (IoT) systems. The proceeding is a valuable reference for researchers, instructors, students, scientists, engineers, managers, and industry practitioners, in industry, in the aforementioned areas. The book's structure and content is organized in such a manner that makes it useful at a variety of learning levels. Presents the proceedings of the International Conference on Wireless Intelligent and Distributed Environment for Communication (WIDECOM 2018), organized by SRM University, NCR Campus, New Delhi, India, February 16-18, 2018; Includes an array of topics related to new dependability paradigms, design, control, and management of next generation networks, performance of dependable network computing and mobile systems, protocols that deal with network computing, mobile/ubiquitous systems, cloud systems, and Internet of Things (IoT) systems; Addresses issues related to the design and performance of dependable network computing and systems and to the security of these systems.

Over 75 exceptional electrocardiogram case studies curated from the libraries of 60 internationally recognized master teachers of

ECG interpretation are brought together in this one-of-a-kind resource for student and teacher alike. Organized by disease type, ECG case studies are presented in a clinical context followed by questions and discussion. Medical students, residents, fellows, physicians — anyone who is involved in caring for patients with various cardiovascular diseases and other systemic pathologies — will find this unique collection with a global perspective useful and practical in developing the skills necessary to reading ECGs.

Biography of Pullela Gopi Chand, b. 1973, Indian badminton player.

The effective use of business intelligence, communication, and productivity applications for supply chain management are essential for the achievement and analysis of information sharing. Management Innovations for Intelligent Supply Chains provides comprehensive coverage in the latest research and developments of supply chain management. This reference collection provides research, methodologies, and frameworks of the incorporation of information systems to better support supply chain management. Keshav is a small-town guy, who lands up in Delhi for his engineering degree in a well-known college. The twist in his tale is – he does not want to be an engineer. He wants to be an author. When fate brings him face to face with Aditi, he is stumped by her beauty and heavenly voice. Like him, her dreams lie elsewhere. She aspires to be a singer, and not an engineer. They bond over their dreams and passion, and a deep bond is forged. But just when things are going great between the two, a turning point pulls them apart. While she leaves him to pursue her dreams, he plunges into depression and anxiety. My Happily Ever After is a heartwarming tale of electrifying friendships, life-altering dreams, and everlasting love which will motivate you to live the life of your dreams.

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.

Industrial ecology, eco-efficiency, and green chemistry are guiding the development of the next generation of materials, products, and processes. Considerable growth has been seen in the use of biocomposites in the domestic sector, building materials, aerospace industry, circuit boards, and automotive applications over the past decade, but application in other sectors until now has been limited. Green Approaches to Biocomposite Materials Science and Engineering explores timely research on the various available types of natural fibers and the use of these fibers as a sustainable alternative to synthetic fibers and polymers. Emphasizing research-based solutions for sustainability across various industries, this publication is an essential reference source for engineers, researchers, environmental scientists, and graduate-level students.

The Book presents an overview of newly developed watermarking techniques in various independent and hybrid domains Covers the basics of digital watermarking, its types, domain in which it is implemented and the application of machine learning algorithms onto digital

watermarking Reviews hardware implementation of watermarking Discusses optimization problems and solutions in watermarking with a special focus on bio-inspired algorithms Includes a case study along with its MATLAB code and simulation results

The fields of computer vision and image processing are constantly evolving as new research and applications in these areas emerge. Staying abreast of the most up-to-date developments in this field is necessary in order to promote further research and apply these developments in real-world settings. Computer Vision: Concepts, Methodologies, Tools, and Applications is an innovative reference source for the latest academic material on development of computers for gaining understanding about videos and digital images. Highlighting a range of topics, such as computational models, machine learning, and image processing, this multi-volume book is ideally designed for academicians, technology professionals, students, and researchers interested in uncovering the latest innovations in the field.

Image Acquisition and Processing With LabVIEWä combines the general theory of image acquisition and processing, the underpinnings of LabVIEW and the NI Vision toolkit, examples of their applications, and real-world case studies in a clear, systematic, and richly illustrated presentation. Designed for LabVIEW programmers, it fills a significant gap in the technical literature by providing a general training manual for those new to National Instruments (NI) Vision application development and a reference for more experienced vision programmers. The downloadable resources contain libraries of the example images and code referenced in the text, additional technical white papers, a demonstration version of LabVIEW 6.0, and an NI IMAQ demonstration that guides you through its features. System Requirements: Using the code provided on the downloadable resources requires LabVIEW 6.1 or higher and LabVIEW Vision Toolkit 6.1 or higher. Some of the examples also require IMAQ Vision Builder 6.1 or higher, the IMAQ OCR toolkit, and IMAQ 1394 drivers.

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.

Maintaining a practical perspective, Python Programming: A Practical Approach acquaints you with the wonderful world of programming. The book is a starting point for those who want to learn Python programming. The backbone of any programming, which is the data structure and components such as strings, lists, etc., have been illustrated with many examples and enough practice problems to instill a level of self-confidence in the reader. Drawing on knowledge gained directly from teaching Computer Science as a subject and working on a wide range of projects related to ML, AI, deep learning, and blockchain, the authors have tried their best to present the necessary skills for a Python programmer. Once the foundation of Python programming is built and the readers are aware of the exact structure, dimensions, processing, building blocks, and representation of data, they can readily take up their specific problems from the area of interest and solve them with the help of Python. These include, but are not limited to, operators, control flow, strings, functions, module processing, object-oriented programming, exception and file handling, multithreading, synchronization, regular expressions, and Python database programming. This book on Python programming is specially designed to keep readers busy with learning fundamentals and generates a sense of confidence by attempting the assignment problems. We firmly believe that explaining any particular technology deviates from learning the fundamentals of a programming language. This book is focused on helping readers attempt implementation in their areas of interest through the skills imparted through this book. We have attempted to present the real essence of Python programming, which you can confidently apply in real life by using Python as a tool. Salient Features ? Based on real-world requirements and solution. ? Simple presentation without avoiding necessary details of the topic. ? Executable programs on almost every topic. ? Plenty of exercise questions, designed to test readers' skills and

understanding. Purposefully designed to be instantly applicable, Python Programming: A Practical Approach provides implementation examples so that the described subject matter can be immediately implemented due to the well-known versatility of Python in handling different data types with ease.

This two-volume set (CCIS 150 and CCIS 151) constitutes the refereed proceedings of the Second International Conference on Ubiquitous Computing and Multimedia Applications, UCMA 2011, held in Daejeon, Korea, in April 2011. The 86 revised full papers presented were carefully reviewed and selected from 570 submissions. Focusing on various aspects of advances in multimedia applications and ubiquitous computing with computational sciences, mathematics and information technology the papers present current research in the area of multimedia and ubiquitous environment including models and systems, new directions, novel applications associated with the utilization, and acceptance of ubiquitous computing devices and systems.

This book 'Signals and Systems' is a detailed textbook designed for undergraduate students of various branches of Engineering. The book uses a student-friendly approach to explain the fundamental concepts of Signals and Systems. It includes a large number of solved examples with step-by-step solutions for easier understanding of the theoretical concepts. Beginning with concepts of signals, the book moves on to other topics such as convolution and correlation of signals, CTFS, DTFS, CTFT, Sampling, Laplace Transform, and Z-Transform. Further, the subject matter is presented by illustrating the concepts first through theoretical concepts along with mathematical reasoning and then through solved examples. Solving the number of multiple choice questions and numerical exercises at the end of the chapters will help students to apply the concepts learnt in the chapters.

The book 'Digital Communications' is meant for the students of Electronics and Communication, Computer Science, Electrical Engineering, Electrical and Electronics Engineering and Information Technology branches, both at undergraduate and post-graduate levels. In this book, the basic principles involved in the analysis and design of Digital Communication Systems are presented with an overall aim of helping the students to develop an intuitive idea about the theory under discussion. It is a well-designed textbook for self-study as well as a reference for anyone who has interest in studying Digital Communications. The book, though comprehensive, has been developed in a reader-friendly fashion by providing numerous pedagogical aids for the study of Digital Communication Systems.

Our culture is one that speaks rather than listens. From reality TV to political rallies, there is a clamour to be heard, to narrate, and to receive attention. It reduces 'reality' to revelation and voyeurism. The Art of Listening argues that this way of life is having severe and damaging consequences in a world that is increasingly globalized and where time and space is ever more rare. It addresses the question: how can we listen more carefully? Theory is combined with real stories from the experiences of the desperate stowaways who hide in the undercarriage of jet planes in order to seek asylum, to the young working-class people who use tattooing to commemorate a lost love. Les Back shows how sociology is in a unique position to record 'life passed in living' and to listen to complex experiences with humility and ethical care, in opposition to the Babel of voyeurism that has taken hold in the mainstream media.

This book gathers selected research papers presented at the Second International Conference on Energy Systems, Drives and Automations (ESDA 2019), held in Kolkata on 28–29 December 2019. It covers a broad range of topics in the fields of renewable energy, power management, drive systems for electrical machines and automation. Also discussing a variety of related tools and techniques, the book offers a valuable resource for researchers, professionals and students in electrical and mechanical engineering disciplines.

Similar to the way in which computer vision and computer graphics act as the dual fields that connect image processing in modern computer

science, the field of image processing can be considered a crucial middle road between the vision and graphics fields. Research Developments in Computer Vision and Image Processing: Methodologies and Applications brings together various research methodologies and trends in emerging areas of application of computer vision and image processing. This book is useful for students, researchers, scientists, and engineers interested in the research developments of this rapidly growing field.

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