

Embedded System Design K Ezhilarasan

Glioblastoma Resistance to Chemotherapy: Molecular Mechanisms and Innovative Reversal Strategies brings current knowledge from an international team of experts on the science and clinical management of glioblastoma chemoresistance. The book discusses topics such as molecular mechanisms of chemoresistance, experimental models to study chemoresistance, chemoresistance to drugs other than Temozolomide, and specific strategies to reverse chemoresistance. Additionally, it encompasses information on how to mitigate chemoresistance by targeted enhancement of p53 function. This book is a valuable resource for cancer researchers, oncologists, neuro-oncologists and other members of the biomedical field. Glioblastoma (GBM) is the most invasive and malignant primary brain tumor in humans with poor survival after diagnosis, therefore it is imperative that molecular and cellular mechanisms behind therapy resistant GBM cells, as well as the therapeutic strategies available to counter the resistance are comprehensively understood. Provides comprehensive, core knowledge related to the entire discipline of glioblastoma chemoresistance, from its many etiological mechanisms, to specific strategies to reverse resistance Presents current information from an international team of experts on the basic science, pre-clinical research, and clinical management of glioblastoma chemoresistance Discusses molecular and cellular mechanisms behind therapy resistant glioblastoma cells, as well as the therapeutic strategies available to counter this resistance

Although governments worldwide have invested significantly in intelligent sensor network research and applications, few books cover intelligent sensor networks from a machine learning and signal processing perspective. Filling this void, Intelligent Sensor Networks: The Integration of Sensor Networks, Signal Processing and Machine Learning focuses on the close integration of sensing, networking, and smart signal processing via machine learning. Based on the world-class research of award-winning authors, the book provides a firm grounding in the fundamentals of intelligent sensor networks, including compressive sensing and sampling, distributed signal processing, and intelligent signal learning. Presenting recent research results of world-renowned sensing experts, the book is organized into three parts: Machine Learning—describes the application of machine learning and other AI principles in sensor network intelligence—covering smart sensor/transducer architecture and data representation for intelligent sensors Signal Processing—considers the optimization of sensor network performance based on digital signal processing techniques—including cross-layer integration of routing and application-specific signal processing as well as on-board image processing in wireless multimedia sensor networks for intelligent transportation systems Networking—focuses on network protocol design in order to achieve an intelligent sensor networking—covering energy-efficient opportunistic routing protocols for sensor

networking and multi-agent-driven wireless sensor cooperation. Maintaining a focus on "intelligent" designs, the book details signal processing principles in sensor networks. It elaborates on critical platforms for intelligent sensor networks and illustrates key applications—including target tracking, object identification, and structural health monitoring. It also includes a paradigm for validating the extent of spatiotemporal associations among data sources to enhance data cleaning in sensor networks, a sensor stream reduction application, and also considers the use of Kalman filters for attack detection in a water system sensor network that consists of water level sensors and velocity sensors.

A major new professional reference work on fingerprint security systems and technology from leading international researchers in the field. Handbook provides authoritative and comprehensive coverage of all major topics, concepts, and methods for fingerprint security systems. This unique reference work is an absolutely essential resource for all biometric security professionals, researchers, and systems administrators.

Early anthropological evidence for plant use as medicine is 60,000 years old as reported from the Neanderthal grave in Iraq. The importance of plants as medicine is further supported by archeological evidence from Asia and the Middle East. Today, around 1.4 billion people in South Asia alone have no access to modern health care, and rely instead on traditional medicine to alleviate various symptoms. On a global basis, approximately 50 to 80 thousand plant species are used either natively or as pharmaceutical derivatives for life-threatening conditions that include diabetes, hypertension and cancers. As the demand for plant-based medicine rises, there is an unmet need to investigate the quality, safety and efficacy of these herbals by the "scientific methods". Current research on drug discovery from medicinal plants involves a multifaceted approach combining botanical, phytochemical, analytical, and molecular techniques. For instance, high throughput robotic screens have been developed by industry; it is now possible to carry out 50,000 tests per day in the search for compounds, which act on a key enzyme or a subset of receptors. This and other bioassays thus offer hope that one may eventually identify compounds for treating a variety of diseases or conditions. However, drug development from natural products is not without its problems. Frequent challenges encountered include the procurement of raw materials, the selection and implementation of appropriate high-throughput bioassays, and the scaling-up of preparative procedures. Research scientists should therefore arm themselves with the right tools and knowledge in order to harness the vast potentials of plant-based therapeutics. The main objective of *Plant and Human Health* is to serve as a comprehensive guide for this endeavor. Volume 1 highlights how humans from specific areas or cultures use indigenous plants. Despite technological developments, herbal drugs still occupy a preferential place in a majority of the population in the third world and have slowly taken roots as alternative medicine in the West. The integration of modern science with traditional uses of herbal drugs is important for our understanding of this ethnobotanical relationship. Volume 2 deals with

the phytochemical and molecular characterization of herbal medicine. Specifically, it focuess on the secondary metabolic compounds, which afford protection against diseases. Lastly, Volume 3 discusses the physiological mechanisms by which the active ingredients of medicinal plants serve to improve human health. Together this three-volume collection intends to bridge the gap for herbalists, traditional and modern medical practitioners, and students and researchers in botany and horticulture.

The first book to comprehensively cover the field of systems genetics, gathering contributions from leading scientists. This volume covers the most important areas of glioblastoma – surgical resection, molecular pathology, targeted therapies, cancer stem cells, the role of DNA methylation, targeted sequencing for personalized therapy, animal models and advances in pediatric glioblastoma. Chapter authors are junior and senior investigators, who are well established in their particular areas and include neurosurgeons, neuropathologists, neurooncologists and basic scientists.

Now in a new edition—the most comprehensive, hands-on introduction to digital signal processing The first edition of Digital Signal Processing and Applications with the TMS320C6713 and TMS320C6416 DSK is widely accepted as the most extensive text available on the hands-on teaching of Digital Signal Processing (DSP). Now, it has been fully updated in this valuable Second Edition to be compatible with the latest version (3.1) of Texas Instruments Code Composer Studio (CCS) development environment. Maintaining the original's comprehensive, hands-on approach that has made it an instructor's favorite, this new edition also features: Added program examples that illustrate DSP concepts in real-time and in the laboratory Expanded coverage of analog input and output New material on frame-based processing A revised chapter on IIR, which includes a number of floating-point example programs that explore IIR filters more comprehensively More extensive coverage of DSP/BIOS All programs listed in the text—plus additional applications—which are available on a companion CD-ROM No other book provides such an extensive or comprehensive set of program examples to aid instructors in teaching DSP in a laboratory using audio frequency signals—making this an ideal text for DSP courses at the senior undergraduate and postgraduate levels. It also serves as a valuable resource for researchers, DSP developers, business managers, and technology solution providers who are looking for an overview and examples of DSP algorithms implemented using the TMS320C6713 and TMS320C6416 DSK.

This is an up-to-date treatment of the analysis and design of CMOS integrated digital logic circuits. The self-contained book covers all of the important digital circuit design styles found in modern CMOS chips, emphasizing solving design problems using the various logic styles available in CMOS.

Recently, understanding the molecular pathogenesis of malignant lymphomas has led to improvement in the diagnostic precision and to the identification of a variety of molecular therapeutic targets. In addition, new drugs have been

approved in the US and Europe, resulting in changes in the standard of care of several types of lymphoid malignancies. Comprehensive in scope and developed by a team of internationally renowned authors, *Lymphoma: Diagnosis and Treatment* provides a timely update on the most important advances in the biology, diagnosis, and therapy of lymphomas. As part of the Current Clinical Oncology series, *Lymphoma: Diagnosis and Treatment* will be of value to medical oncologists, hematologists, radiation oncologists, and all physicians involved in the care of patients with lymphoid malignancies.

Nanotechnology is expected to bring revolutionary changes in a variety of fields. This volume describes nanoparticles and their biomedical applications, and covers metal nanoparticles, metal oxide nanoparticles, rare earth based nanoparticles and graphene oxide nanoparticles. It elaborates on a number of biomedical applications, including therapeutic applications. It addresses the topic of green synthesis, in view of increasing health and environmental concerns.

The book covers self-healing concepts for all important material classes and their applications: polymers, ceramics, non-metallic and metallic coatings, alloys, nanocomposites, concretes and cements, as well as ionomers. Beginning with the inspiration from biological self-healing, its mimicry and conceptual transfer into approaches for the self-repair of artificially created materials, this book explains the strategies and mechanisms for the readers' basic understanding, then covers the different material classes and suitable self-healing concepts, giving examples for their application in practical situations. As the first book in this swiftly growing research field, it is of great interest to readers from many scientific and engineering disciplines, such as physics and chemistry, civil, architectural, mechanical, electronics and aerospace engineering.

A hands-on introduction to microcontroller project design with dozens of example circuits and programs. Presents practical designs for use in data loggers, controllers, and other small-computer applications. Example circuits and programs in the book are based on the popular 8052-BASIC microcontroller, whose on-chip BASIC programming language makes it easy to write, run, and test your programs. With over 100 commands, instructions, and operators, the BASIC-52 interpreter can do much more than other single-chip BASICs. Its abilities include floating-point math, string handling, and special commands for storing programs in EPROM, EEPROM, or battery-backed RAM.

"The third edition of this best-seller updates its detailed information about how to construct, evaluate, and use questionnaires, and adds an entirely new chapter on customer loyalty." "Readers will gain a sound grasp of the scientific methodology used to construct and use questionnaires utilizing the author's systematic approach. They will be able to pinpoint and focus on the most relevant topics, and study both the qualitative and quantitative aspects of questionnaire

design and evaluation. These and many more important scientific principles are presented in simple, understandable terms."--BOOK JACKET.

Handbook of Fingerprint Recognition Springer Science & Business Media

This book is designed to serve as a clear and concise clinical manual that covers all aspects of the current management of gingival recession, with a particular focus on surgical techniques with the adjunctive use of autogenous tissues or soft tissue substitutes for recession coverage. A structured overview of the various surgical techniques is provided with the aid of high-quality illustrations, delivering an evidence-based clinical treatment guideline. In addition, individual chapters are dedicated to the classification of gingival recession, etiology and prevalence, clinical examination and diagnosis, decision making, potential complications, and postsurgical care. Gingival recession is a common condition in the adult population and is related to several undesirable conditions such as unaesthetic appearance, root caries, and hypersensitivity. Periodontal plastic surgery is now an important tool in the armamentarium of the clinician treating gingival recessions, and practitioners at all levels will find this book to be an invaluable source of guidance.

This book offers insights into the current focus and recent advances in bioremediation and green technology applications for waste minimization and pollution control. Increasing urbanization has an impact on the environment, agriculture and industry, exacerbating the pollution problem and creating an urgent need for sustainable and green eco-friendly remediation technology. Currently, there is heightened interest in environmental research, especially in the area of pollution remediation and waste conversion, and alternative, eco-friendly methods involving better usage of agricultural residues as economically viable substrates for environmental cleanup are still required. The book offers researchers and scholars inspiration, and suggests directions for specific waste management and pollution control. The research presented makes a valuable contribution toward a sustainable and eco-friendly societal environment.

The book presents new approaches and methods for solving real-world problems. It offers, in particular, exploratory research that describes novel approaches in the fields of Cognitive Informatics, Cognitive Computing, Computational Intelligence, Advanced Computing, Hybrid Intelligent Models and Applications. New algorithms and methods in a variety of fields are also presented, together with solution-based approaches. The topics addressed include various theoretical aspects and applications of Computer Science, Artificial Intelligence, Cybernetics, Automation Control Theory and Software Engineering.

This book features selected research papers presented at the First International Conference on Computing, Communications, and Cyber-Security (IC4S 2019), organized by Northwest Group of Institutions, Punjab, India, Southern Federal University, Russia, and IAC Educational Trust, India along with KEC, Ghaziabad and ITS, College Ghaziabad as

an academic partner and held on 12–13 October 2019. It includes innovative work from researchers, leading innovators and professionals in the area of communication and network technologies, advanced computing technologies, data analytics and intelligent learning, the latest electrical and electronics trends, and security and privacy issues.

It is now well accepted that the consumption of plant-based foods is beneficial to human health. Fruits, vegetables, grains, and derived products can be excellent sources of minerals, vitamins, and fiber and usually have a favorable nutrient-to-energy ratio. Furthermore, plant foods are also a rich source of phytochemicals such as polyphenols, carotenoids, and betalains, with potential health benefits for humans. Many epidemiological studies have made a direct link between the consumption of plant foods and health. Human intervention studies have also shown that higher intake/consumption of plant foods can reduce the incidence of metabolic syndrome and other chronic diseases, especially in at-risk populations such as obese people. In addition to its health benefits, plant foods are also used as functional ingredients in food applications such as antioxidants, antimicrobials, and natural colorants. The Special Issue “Foods of Plant Origin” covers biodiscovery, functionality, the effect of different cooking/preparation methods on bioactive (plant food) ingredients, and strategies to improve the nutritional quality of plant foods by adding other food components using novel/alternative food sources or applying non-conventional preparation techniques.

This two-volume set LNCS 6691 and 6692 constitutes the refereed proceedings of the 11th International Work-Conference on Artificial Neural Networks, IWANN 2011, held in Torremolinos-Málaga, Spain, in June 2011. The 154 revised papers were carefully reviewed and selected from 202 submissions for presentation in two volumes. The first volume includes 69 papers organized in topical sections on mathematical and theoretical methods in computational intelligence; learning and adaptation; bio-inspired systems and neuro-engineering; hybrid intelligent systems; applications of computational intelligence; new applications of brain-computer interfaces; optimization algorithms in graphic processing units; computing languages with bio-inspired devices and multi-agent systems; computational intelligence in multimedia processing; and biologically plausible spiking neural processing.

Facial recognition software has improved by leaps and bounds over the past few decades, with error rates decreasing significantly within the past ten years. Though this is true, conditions such as poor lighting, obstructions, and profile-only angles have continued to persist in preventing wholly accurate readings. Face Recognition in Adverse Conditions examines how the field of facial recognition takes these adverse conditions into account when designing more effective applications by discussing facial recognition under real world PIE variations, current applications, and the future of the field of facial recognition research. The work is intended for academics, engineers, and researchers specializing in the field of facial recognition.

This volume constitutes the proceedings of the 11th International Conference on Intelligent Human Computer Interaction, IHCI 2019, held in Allahabad, India, in December 2019. The 25 full papers presented in this volume were carefully reviewed and selected from 73 submissions. The papers are grouped in the following topics: EEG and other biological signal based interactions; natural language, speech and dialogue processing; vision based interactions; assistive living and rehabilitation; and applications of HCI.

This book constitutes the thoroughly refereed post-conference proceedings of the First International Joint Conference on Advances in Signal Processing and Information Technology (SPIT 2011) and Recent Trends in Information Processing and Computing (IPC 2011) held in Amsterdam, The Netherlands, in December 2011. The 50 revised full papers presented were carefully selected from 298 submissions. Conference papers promote research and development activities in computer science, information technology, computational engineering, image and signal processing, and communication.

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.

This book describes the pathways of dissemination of primary liver, biliary, and pancreatic neoplasms and proposes a practical and clinically driven approach to their imaging. The typical dissemination pathways for hepatocellular carcinoma, cholangiocarcinoma, exocrine pancreatic carcinoma, and neuroendocrine pancreatic tumors are systematically reviewed, and more unusual pathways are also documented. The content is presented in an extremely schematic way, with numerous high-quality graphical illustrations and multimodality images (US, CT, MRI, and PET) that are accompanied by clear explanatory text. The clinical significance of findings and potential therapeutic options are explained whenever appropriate. In addition, relevant

background information is provided on the role of morphopathological drivers of cancer spread and anatomy.

The aim of the conference is to support exchange of information and experience in the field of automation, engineering and control systems in research, applications, and education. The conference will enable presentation of most recent advances in complex automation, robotics, modelling, control of production and technological processes, including quality control systems oriented to environment, means of support, information technologies and control in bioengineering. The five sister faculties of five universities of the Carpathian region (Kosice, Krakow, Ostrava, Miskolc, Craiova) founded this conference in order to promote the research cooperation and cultural exchanges.

Green Synthesis, Characterization and Applications of Nanoparticles shows how eco-friendly nanoparticles are engineered and used. In particular, metal nanoparticles, metal oxide nanoparticles and other categories of nanoparticles are discussed. The book outlines a range of methodologies and explores the appropriate use of each. Characterization methods include spectroscopic, microscopic and diffraction methods, but magnetic resonance methods are also included as they can be used to understand the mechanism of nanoparticle synthesis using organisms. Applications covered include targeted drug delivery, water purification and hydrogen generation. This is an important research resource for those wishing to learn more about how eco-efficient nanoparticles can best be used. Theoretical details and mathematical derivations are kept to a necessary minimum to suit the need of interdisciplinary audiences and those who may be relatively new to the field. Explores recent trends in growth, characterization, properties and applications of nanoparticles. Gives readers an understanding on how they are applied through the use of case studies and examples. Assesses the advantages and disadvantages of a variety of synthesis and characterization techniques for green nanoparticles in different situations.

The book is a collection of high-quality peer-reviewed research papers presented in the Proceedings of International Conference on Power Electronics and Renewable Energy Systems (ICPERES 2014) held at Rajalakshmi Engineering College, Chennai, India. These research papers provide the latest developments in the broad area of Power Electronics and Renewable Energy. The book discusses wide variety of industrial, engineering and scientific applications of the emerging techniques. It presents invited papers from the inventors/originators of new applications and advanced technologies.

Regulated turnover of extracellular matrix (ECM) is an important component of tissue homeostasis. In recent years, the enzymes that participate in, and control ECM turnover have been the focus of research that touches on development, tissue remodeling, inflammation and disease. This volume in the *Biology of Extracellular Matrix* series provides a review of the known classes of proteases that degrade ECM both outside and inside the cell. The specific EMC proteases that are discussed include cathepsins, bacterial collagenases, matrix metalloproteinases, meprins, serine proteases, and elastases. The volume also discusses the domains responsible for specific biochemical characteristics of the proteases and the physical interactions that occur when the protease interacts with substrate. The topics covered in this volume provide an important context for understanding the role that matrix-degrading proteases play in normal tissue remodeling and in diseases such as cancer and lung disease.

This book focuses on reversible steganography and authentication via transform encoding, fully discussing in detail the reversibility computation of six transformation techniques: DFT, DCT, wavelets, Z, binomial and grouplet, as well as chaos-based authentication. The book also describes algorithmic approaches based on all transformations along with implementation details and results. Further topics include embedding and extraction into the spatial domain, tuning using GA-based approaches and embedding into imaginary coefficients of the Z domain. Featuring detailed algorithms for encryption and descriptions of all techniques, including embedding techniques for all transform-based steganographic processes, the book also explores the adjustment of pixel values after embedding and presents numerical examples of reversible computations. In the context of chaos-based authentication, it also describes testing the quality of generator is using Monobit, Serial and Poker tests. The book then outlines 15 test cases recommended by NIST fifteen test cases, along with their implementation on six evolutionary algorithms for neural cryptographic systems in the context of wireless computations – TPM, KSOMSCT, DHLPSCT, CHDLPSCT, CTHLPSCT and CGTHLPSCT – and verifies their satisfiability based on the implementations of these six techniques. Lastly it presents various metrics of image processing systems. This book is a valuable reference resource for research scholars, PG/UG students and practicing engineers

This book discusses various challenges and solutions in the fields of operation, control, design, monitoring and protection of microgrids, and facilitates the integration of renewable energy and distribution systems through localization of generation, storage and consumption. It covers five major topics relating to microgrid i.e., operation, control, design, monitoring and protection. The book is primarily intended for electric power and control engineering researchers who are seeking factual information, but also appeals to professionals from other engineering disciplines wanting an overview of the entire field or specific information on one aspect of it. Featuring practical case studies and demonstrating different root causes of large power failures, it helps readers develop new concepts for mitigating blackout issues. This book is a comprehensive reference resource for graduate and postgraduate students, academic researchers, and practicing engineers working in the fields of power system and microgrid. This important text/reference presents the latest secure and privacy-compliant techniques in automatic human recognition. Featuring viewpoints from an international selection of experts in the field, the comprehensive coverage spans both theory and practical implementations, taking into consideration all ethical and legal issues. Topics and features: presents a unique focus on novel approaches and new architectures for unimodal and multimodal template protection; examines signal processing techniques in the encrypted domain, security and privacy leakage assessment, and aspects of standardization; describes real-world applications, from face and fingerprint-based user recognition, to biometrics-based electronic documents, and biometric systems employing smart cards; reviews the ethical implications of the ubiquity of biometrics in everyday life, and its impact on human dignity; provides guidance on best practices for the processing of biometric data within a legal framework.

Revealing essential roles of the tumor microenvironment in cancer progression, this book provides a comprehensive overview of the latest research on the tumor microenvironment in over thirty human organs, including the parathyroid

gland, heart, intestine, testicles, and more. Taken alongside its companion volumes, these books update us on what we know about the different aspects of the tumor microenvironments in distinct organs as well as future directions. Tumor Microenvironments in Organs: From the Brain to the Skin – Part A is essential reading for advanced cell biology and cancer biology students as well as researchers seeking an update on research in the tumor microenvironment.

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.

This book constitutes the refereed proceedings of the 5th International Conference on Information, Communication and Computing Technology, ICICCT 2020, held in New Delhi, India*, in May 2020. The 24 full papers and one short paper presented in this volume were carefully reviewed and selected from 220 submissions. The papers are organized in topical sections on data communication & networking; advanced computing using machine learning. *The conference was held virtually due to the COVID-19 pandemic.

Advanced Computing, Networking and Informatics are three distinct and mutually exclusive disciplines of knowledge with no apparent sharing/overlap among them. However, their convergence is observed in many real world applications, including cyber-security, internet banking, healthcare, sensor networks, cognitive radio, pervasive computing amidst many others. This two-volume proceedings explore the combined use of Advanced Computing and Informatics in the next generation wireless networks and security, signal and image processing, ontology and human-computer interfaces (HCI). The two volumes together include 148 scholarly papers, which have been accepted for presentation from over 640 submissions in the second International Conference on Advanced Computing, Networking and Informatics, 2014, held in Kolkata, India during June 24-26, 2014. The first volume includes innovative computing techniques and relevant research results in informatics with selective applications in pattern recognition, signal/image processing and HCI. The second volume on the other hand demonstrates the possible scope of the computing techniques and informatics in wireless communications, networking and security.

The goal of SmartTechCon 2017 is to provide an outstanding forum for researchers, practitioners, policy makers, and users to exchange ideas, techniques and tools, raise awareness, and share experience related to all practical and

theoretical aspects of Smart Technologies SmartTechCon 2017 will feature a comprehensive technical program including several special sessions symposiums and a number of short courses

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