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Analysis of Medical Modalities for Improved Diagnosis in Modern Healthcare

Varun Bajaj 2021-08-11 In modern healthcare, various medical modalities play an important role in improving the diagnostic performance in healthcare systems for various applications, such as prosthesis design, surgical implant design, diagnosis and prognosis, and detection of abnormalities in the treatment of various diseases. Analysis of Medical Modalities for Improved Diagnosis in Modern Healthcare discusses the uses of analysis, modeling, and manipulation of modalities, such as EEG, ECG, EMG, PCG, EOG, MRI, and FMRI, for an automatic identification, classification, and diagnosis of different types of disorders and physiological states. The analysis and applications for post-processing and diagnosis are much-needed topics for researchers and faculty members all across the world in the field of automated and efficient diagnosis using medical modalities. To meet this need, this book emphasizes real-time challenges in medical modalities for a variety of applications for analysis, classification, identification, and diagnostic processes of healthcare systems. Each chapter starts with the introduction, need and motivation of the medical modality, and a number of applications for the identification and improvement of healthcare systems. The chapters can be read independently or consecutively by research scholars, graduate students, faculty members, and practicing scientists who wish to explore various disciplines of healthcare systems, such as computer sciences, medical sciences, and biomedical engineering. This book aims to improve the direction of future research and strengthen research efforts of healthcare systems through analysis of behavior, concepts, principles, and case studies. This book also aims to overcome the gap between usage of medical modalities and healthcare systems. Several novel applications of medical modalities have been unlocked in recent years, therefore new applications, challenges, and solutions for healthcare systems are the focus of this book.

Data Deduplication Approaches Tin Their Thwel 2020-11-25 In the age of data science, the rapidly increasing amount of data is a major concern in numerous applications of computing operations and data storage. Duplicated data or redundant data is a main challenge in the field of data science research. Data Deduplication Approaches: Concepts, Strategies, and Challenges shows readers the various methods that can be used to eliminate multiple copies of the same files as well as duplicated segments or chunks of data within the associated files. Due to ever-increasing data duplication, its deduplication has become an especially useful field of research for storage environments, in particular persistent data storage. Data Deduplication Approaches provides readers with an overview of the concepts and background of data deduplication approaches, then proceeds to demonstrate in technical detail the strategies and challenges of real-time implementations of handling big data, data science, data backup, and recovery. The book also includes future research directions, case studies, and real-world applications of data deduplication, focusing on reduced storage, backup, recovery, and reliability. Includes data deduplication methods for a wide variety of applications Includes concepts and implementation strategies that will help the reader to use the suggested methods Provides a robust set of methods that will help readers to appropriately and judiciously use the suitable methods for their applications Focuses on reduced storage, backup, recovery, and reliability, which are the most important aspects of implementing data deduplication approaches Includes case studies

Organisational Behaviour Khushboo Pathak 2020-06-03 Organisational Behaviour by Khushboo Pathak is a publication of the SBPD Publishing House, Agra. The book extensively covers all major topics of Organisational Behaviour and helps the student understand all the basics and get a good command on the subject.

Development of Employability Skills Through Pragmatic Assessment of Student Learning Outcomes Subudhi, Bidyadhar 2022-06-24 The COVID-19 pandemic has shifted the teaching-learning experience dramatically, creating an opportunity for new online and blended learning techniques and tools. This has also added a new dimension to practices and methods already adopted for achieving sustainable development goals (SDGs) within education. This requires a new paradigm shift in the teaching-learning process through the systemic and pragmatic assessment of student learning outcomes so that employability skills and competence can be developed in students for competing at the global level. Development of Employability Skills Through Pragmatic Assessment of Student Learning Outcomes discusses the best practices in the assessment of student learning objectives (SLOs), the mapping of SLOs, and the ways of developing employability skills in young minds so that SDGs may be achieved. It elaborates the theory, practice, and importance of developing employability skills through research-based learning. Covering topics such as graduate employability, outcome-based education, and technical undergraduate programs, this premier reference source is an essential resource for employers, libraries, students and educators of higher education, faculty and administration of higher education, pre-service teachers, government organizations, business leaders and managers, human resource managers, researchers, and academicians.

Fuzzy Expert Systems for Disease Diagnosis Kumar, A.V. Senthil 2014-11-30 The development of fuzzy expert systems has provided new opportunities for problem solving amidst uncertainties. The medical field, in particular, has benefitted tremendously from advancing fuzzy system technologies. Fuzzy Expert Systems for Disease Diagnosis highlights the latest research and developments in fuzzy rule-based methods used in the detection of medical complications and illness. Offering emerging solutions and practical applications, this timely publication is designed for use by researchers, academicians, and students, as well as practitioners in the medical field.

Who's Who in Science and Engineering 2011-2012 Marquis Who's Who 2010-12

Machine Learning Approaches and Applications in Applied Intelligence for Healthcare Data Analytics Abhishek Kumar 2022-03-10 In the last two decades, machine learning has developed dramatically and is still experiencing a fast and everlasting change in paradigms, methodology, applications and other aspects. This book offers a compendium of current and emerging machine learning paradigms in healthcare informatics and reflects on their diversity and complexity. Machine Learning Approaches and Applications in Applied Intelligence for Healthcare Data Analytics presents a variety of techniques designed to enhance and empower multi-disciplinary and multi-institutional machine learning research. It provides many case studies and a panoramic view of data and machine learning techniques, providing the opportunity for novel insights and discoveries. The book explores the theory and practical applications in healthcare and includes a guided tour of machine learning algorithms, architecture design and interdisciplinary challenges. This book is useful for research scholars and students involved in critical condition analysis and computation models.

Cognitive Informatics, Computer Modelling, and Cognitive Science G. R. Sinha 2020-04-22 Cognitive Informatics, Computer Modelling, and Cognitive Science: Volume Two, Application to Neural Engineering, Robotics, and STEM presents the practical, real-world applications of Cognitive Science to help readers understand how it can help them in their research, engineering and academic pursuits. The book is presented in two volumes, covering Introduction and Theoretical Background, Philosophical and Psychological Theory, and Cognitive Informatics and Computing. Volume Two includes Statistics for Cognitive Science, Cognitive Applications and STEM Case Studies. Other sections cover Cognitive Informatics, Computer Modeling and Cognitive Science: Application to Neural Engineering, Robotics, and STEM. The book's authors discuss the current status of research in the field of Cognitive Science, including cognitive language processing that paves the ways for developing numerous tools for helping physically challenged persons, and more. Identifies how foundational theories and concepts in cognitive science are applicable in other fields Includes a comprehensive review of cognitive science applications in multiple domains, applying it to neural engineering, robotics, computer science and STEM Presents basic statistics and cognitive maps, testing strategies of hypothesis, maximum likelihood estimator, Bayesian statistics, and discrete probability

models of neural computation Contains in-depth technical coverage of cognitive applications and case studies, including neuro-computing, brain modeling, cognitive ability and cognitive robots

Wastewater Treatment Maulin P. Shah 2021-01-30 Wastewater Treatment: Cutting-Edge Molecular Tools, Techniques and Applied Aspects reports new findings in existing molecular biology strategies, including their limitations, challenges and potential application to remove environmental pollutants through advancements made in cutting edge tools. In addition, the book introduces new trends and advances in environmental bioremediation with thorough discussions on recent developments in this field. Describes the application of different omics tools in wastewater treatment plants (WWTPs) Describes the role of microorganisms in WWTPs Points out the reuse of treated wastewater through emerging technologies Includes the recovery of resources from wastewater Emphasizes the need for the use of cutting-edge molecular tools

Data Science and Innovations for Intelligent Systems Kavita Taneja 2021-10-01 Data science is an emerging field and innovations in it need to be explored for the success of society 5.0. This book not only focuses on the practical applications of data science to achieve computational excellence, but also digs deep into the issues and implications of intelligent systems. This book highlights innovations in data science to achieve computational excellence that can optimize performance of smart applications. The book focuses on methodologies, framework, design issues, tools, architectures, and technologies necessary to develop and understand data science and its emerging applications in the present era. This book will be useful for the research community, start-up entrepreneurs, academicians, and data centered industries and professors that are interested in exploring innovations in varied applications and areas of data science.

Applied Mathematics-I (CSVTU) Bikas Chandra Bhui Applied Mathematics-I has been written for the first year students of CSVTU. The entire book has been developed with an eye on the physical interpretations of concepts, application of the notions in engineering and technology, and precision through its solved examples. Author's long experience of teaching various grades of students has played an instrumental role towards this end. An emphasis on various techniques of solving complex problems will be of immense help to the students. KEY FEATURES • Brief but just discussion of theory • Examination oriented approach • Techniques of solving difficult questions • Solution for a large number of technical problems

Foundation of Engineering Mathematics-II Dr. Manju Sanghi And Dr.C. Ramesh Kumar 2020-07-16 This book is designed to build up a strong foundation for the new students entering in Engineering field. It is strictly as per the revised syllabus prescribed by AICTE model curriculum. It has been written to fulfil all the requirements of B.E/B.Tech second semester students (All Branches of Engineering) of Chhattisgarh Swami Vivekanand Technical University, Bhilai. The essential feature of this book is that apart from theoretical background, it

provides sufficient number of solved examples with detailed steps in easy and simple language along with problems for practice. Suitable figures have also been incorporated to ensure an easy understanding of the concepts. Short and very short answer type questions are also included. We hope that this book will be of great use for which it has been designed

Applied Mathematics III/IV (Bhilai)

Impact of COVID-19 on Emerging Contaminants Manish Kumar

Advances in Hydrology and Climate Change Surendra Kumar Chandniha 2022-11-24 Highlighting recent trends that employ innovative management and conservation approaches, this volume provides an informative overview of the issues and challenges in water resources affected by climate change, such as drought, flooding, glacier changes, and overbuilt-up urban areas. Focusing on surface and groundwater related issues, the book presents solutions that include such methods as morphometric assessment, parameter estimation, long-term trend analysis, sustainability indexes, storm water management models, entropy-based measurement of long-term precipitation, and more. The volume focuses on providing a better understanding of climatic uncertainty through hydrometeorological data sets and their application in hydrological modeling. These analyses help to serve as the basis for the design of flood-control and water-usage management policies.

Cognitive Informatics, Computer Modelling, and Cognitive Science Ganesh R. Sinha 2020-03-17 Cognitive Informatics, Computer Modelling, and Cognitive Science: Theory, Case Studies, and Applications presents the theoretical background and history of cognitive science to help readers understand its foundations, philosophical and psychological aspects, and applications in a wide range of engineering and computer science case studies. Cognitive science, a cognitive model of the brain, knowledge representation, and information processing in the human brain are discussed, as is the theory of consciousness, neuroscience, intelligence, decision-making, mind and behavior analysis, and the various ways cognitive computing is used for information manipulation, processing and decision-making. Mathematical and computational models, structures and processes of the human brain are also covered, along with advances in machine learning, artificial intelligence, cognitive knowledge base, deep learning, cognitive image processing and suitable data analytics.

Brain and Behavior Computing Mridu Sahu 2021-06-24 Brain and Behavior Computing offers insights into the functions of the human brain. This book provides an emphasis on brain and behavior computing with different modalities available such as signal processing, image processing, data sciences, statistics further it includes fundamental, mathematical model, algorithms, case studies, and future research scopes. It further illustrates brain signal sources and how the brain signal can process, manipulate, and transform in different domains allowing researchers and professionals to extract information about the physiological condition of the brain. Emphasizes real challenges in brain

signal processing for a variety of applications for analysis, classification, and clustering. Discusses data sciences and its applications in brain computing visualization. Covers all the most recent tools for analysing the brain and it's working. Describes brain modeling and all possible machine learning methods and their uses. Augments the use of data mining and machine learning to brain computer interface (BCI) devices. Includes case studies and actual simulation examples. This book is aimed at researchers, professionals, and graduate students in image processing and computer vision, biomedical engineering, signal processing, and brain and behavior computing.

Bioinformatics Dev Bukhsh Singh 2021-10-21 Bioinformatics: Methods and Applications provides a thorough and detailed description of principles, methods, and applications of bioinformatics in different areas of life sciences. It presents a compendium of many important topics of current advanced research and basic principles/approaches easily applicable to diverse research settings. The content encompasses topics such as biological databases, sequence analysis, genome assembly, RNA sequence data analysis, drug design, and structural and functional analysis of proteins. In addition, it discusses computational approaches for vaccine design, systems biology and big data analysis, and machine learning in bioinformatics. It is a valuable source for bioinformaticians, computer biologists, and members of biomedical field who needs to learn bioinformatics approaches to apply to their research and lab activities. Covers basic and more advanced developments of bioinformatics with a diverse and interdisciplinary approach to fulfill the needs of readers from different backgrounds Explains in a practical way how to decode complex biological problems using computational approaches and resources Brings case studies, real-world examples and several protocols to guide the readers with a problem-solving approach

Data Science and Its Applications Aakanksha Sharaff 2021-08-17 The term "data" being mostly used, experimented, analyzed, and researched, "Data Science and its Applications" finds relevance in all domains of research studies including science, engineering, technology, management, mathematics, and many more in wide range of applications such as sentiment analysis, social medial analytics, signal processing, gene analysis, market analysis, healthcare, bioinformatics etc. The book on Data Science and its applications discusses about data science overview, scientific methods, data processing, extraction of meaningful information from data, and insight for developing the concept from different domains, highlighting mathematical and statistical models, operations research, computer programming, machine learning, data visualization, pattern recognition and others. The book also highlights data science implementation and evaluation of performance in several emerging applications such as information retrieval, cognitive science, healthcare, and computer vision. The data analysis covers the role of data science depicting different types of data such as text, image, biomedical signal etc. useful for a wide range of real time applications. The salient features of the book are: Overview, Challenges and Opportunities in Data Science and Real Time Applications Addressing Big Data Issues Useful Machine Learning Methods Disease Detection and Healthcare Applications

utilizing Data Science Concepts and Deep Learning Applications in Stock Market, Education, Behavior Analysis, Image Captioning, Gene Analysis and Scene Text Analysis Data Optimization Due to multidisciplinary applications of data science concepts, the book is intended for wide range of readers that include Data Scientists, Big Data Analysts, Research Scholars engaged in Data Science and Machine Learning applications.

Social Pharmacy - Health Education and Community Pharmacy Monika Bhairam 2021-09-07 The textbook of Social Pharmacy has been written for students of diploma in pharmacy first-year students keeping in mind specific requirements of the Pharmacy Council of India (PCI), Education Regulation - 2020. This is a bilingual book in both English and Hindi for easy understanding to students. This book is covering the entire syllabus as per new PCI norms including practicals and previous year question papers. This book containing ten chapters with an introduction to social pharmacy. In preceding chapters role of pharmacists, environment and health, psychosocial pharmacy, nutrition and health, epidemiology, national health program and pharmacoeconomics have discussed. This book is basically health education and community pharmacy.

VLSI and Hardware Implementations using Modern Machine Learning Methods Sandeep Saini 2021-12-31 Machine learning is a potential solution to resolve bottleneck issues in VLSI via optimizing tasks in the design process. This book aims to provide the latest machine-learning-based methods, algorithms, architectures, and frameworks designed for VLSI design. The focus is on digital, analog, and mixed-signal design techniques, device modeling, physical design, hardware implementation, testability, reconfigurable design, synthesis and verification, and related areas. Chapters include case studies as well as novel research ideas in the given field. Overall, the book provides practical implementations of VLSI design, IC design, and hardware realization using machine learning techniques. Features: Provides the details of state-of-the-art machine learning methods used in VLSI design Discusses hardware implementation and device modeling pertaining to machine learning algorithms Explores machine learning for various VLSI architectures and reconfigurable computing Illustrates the latest techniques for device size and feature optimization Highlights the latest case studies and reviews of the methods used for hardware implementation This book is aimed at researchers, professionals, and graduate students in VLSI, machine learning, electrical and electronic engineering, computer engineering, and hardware systems.

New Opportunities for Sentiment Analysis and Information Processing Sharaff, Aakanksha 2021-06-25 Multinational organizations have begun to realize that sentiment mining plays an important role for decision making and market strategy. The revolutionary growth of digital marketing not only changes the market game, but also brings forth new opportunities for skilled professionals and expertise. Currently, the technologies are rapidly changing, and artificial intelligence (AI) and machine learning are contributing as game-changing technologies. These are not only trending but are also increasingly popular among data scientists and data analysts. New Opportunities for Sentiment

Analysis and Information Processing provides interdisciplinary research in information retrieval and sentiment analysis including studies on extracting sentiments from textual data, sentiment visualization-based dimensionality reduction for multiple features, and deep learning-based multi-domain sentiment extraction. The book also optimizes techniques used for sentiment identification and examines applications of sentiment analysis and emotion detection. Covering such topics as communication networks, natural language processing, and semantic analysis, this book is essential for data scientists, data analysts, IT specialists, scientists, researchers, academicians, and students.

Deep Learning for Personalized Healthcare Services Vishal Jain 2021-10-25 This book uncovers the stakes and possibilities involved in realising personalised healthcare services through efficient and effective deep learning algorithms, enabling the healthcare industry to develop meaningful and cost-effective services. This requires effective understanding, application and amalgamation of deep learning with several other computing technologies, such as machine learning, data mining, and natural language processing.

Microbial Remediation of Azo Dyes with Prokaryotes Maulin P Shah 2022-01-12 This book details microbial remediation of azo dyes from wastewater including information on existing methods and technologies, their graduation, the emergence of new technologies, industrial practices, and real-case studies. Emphasis is placed on industrial applications and the elimination of toxic pollutants from wastewater through bacterial approach. Specific aspects discussed include effective separation through new adsorbents / newcomers, ion exchange process, coagulation / formulations, separations, and biological methods from wastewater. This book explains a paradigm shift towards the recovery of materials and energy from azo dye containing wastewater. Features: Provides information on the topic of prokaryotic-based technologies for azo dye degradation in wastewater treatment plant. Describes microbial enzymes and their role in bioremediation of environmental pollutants. Covers industrial acid mine tailing wastes, plastic wastes, distillery, and pulp paper industry effluent. Discusses critical insight into limitations of related technologies. Explains concepts through illustrations, figures, tables, and trivia boxes. This book aims at Researchers, Professionals, Graduate Students in Bioremediation and Environmental Protection, Waste Management, Applied Microbiology, Botany and Plant Biotechnology.

Real Life Applications of Soft Computing Anupam Shukla 2010-05-21 Rapid advancements in the application of soft computing tools and techniques have proven valuable in the development of highly scalable systems and resulted in brilliant applications, including those in biometric identification, interactive voice response systems, and data mining. Although many resources on the subject adequately cover the theoretic concepts, few provide clear insight into practical application. Filling this need, Real Life Applications of Soft Computing explains such applications, including the underlying technology and its implementation. While these systems initially seem complex, the authors

clearly demonstrate how they can be modeled, designed, and implemented. Written in a manner that makes it accessible to novices, the book begins by covering the theoretical foundations of soft computing. It supplies a concise explanation of various models, principles, algorithms, tools, and techniques, including artificial neural networks, fuzzy systems, evolutionary algorithms, and hybrid algorithms. Supplying in-depth exposure to real life systems, the text provides: Multi-dimensional coverage supported by references, figures, and tables Warnings about common pitfalls in the implementation process, as well as detailed examinations of possible solutions A timely account of developments in various areas of application Solved examples and exercises in each chapter Detailing a wide range of contemporary applications, the text includes coverage of those in biometric systems, including physiological and behavioral biometrics. It also examines applications in legal threat assessment, robotic path planning, and navigation control. The authors consider fusion methods in biometrics and bioinformatics and also provide effective disease identification techniques. Complete with algorithms for robotic path planning, the book addresses character recognition and presents the picture compression technique by using a customized hybrid algorithm. The authors conclude with a discussion of parallel architecture for artificial neural networks and supply guidelines for creating and implementing effective soft computing designs.

Advanced Oxidation Processes for Effluent Treatment Plants Maulin P. Shah
2020-07-03 Advanced Oxidation Processes for Effluent Treatment Plants provides a complete overview of the recent advances made in oxidation-based water treatment processes, including their limitations, challenges and potential applications in removing environmental pollutants. The book introduces new trends and advances in environmental bioremediation technology with a thorough discussion of recent developments in this field, with multiple biological and chemical wastewater treatment processes presented in detail. Additionally, every chapter explains the wastewater treatment plants that utilize these methods, illustrating them in terms of plant size, layout, design and installation location. New trends and advances in environmental bioremediation technology are also covered. This is the go-to resources for engineers and scientists requiring an introduction to the principles of environmental bioremediation technologies. Illustrates the importance of various advance oxidation processes in effluent treatment plants Highlights the reuse and recovery of resources from wastewater Examines the occurrence of novel micro-pollutants Emphasizes the role of nanotechnology in the bioremediation of pollutants Introduces new trends in environmental bioremediation

Aquacultural Facilities and Equipment Bimal Chandra Mal 2021-06-19 Aquaculture Facilities and Equipment is a practical resource on the technical aspects needed for experts in the field to understand a high-performance aquaculture facility, its design and form, and the materials and systems used within the facility. The book is written at a level suitable for both field experts and students alike. It includes topics such as pond construction machinery, pumps for aquaculture, aeration for aquaculture, fish feeders, filtration systems in aquaculture, hatchery, raceways and tanks, and cage and pen culture. This book

is based on 30 years of research that is presented as a useful reference to enhance efficient aquaculture production. It will be very helpful for experts working in related fields of fishery development and for those teaching fishery science and engineering courses. Includes numerical equations for solving practical problems within an aquacultural facility Combines knowledge of aquaculture science that is supported by relevant engineering inputs that boost production Presents information on different types of traditional breeding, including hapa breeding, glass jar incubators, bundh breeding, induced carp breeding, hypophysation, and GnRH based inducing agents

Modelling and Simulation in Science, Technology and Engineering Mathematics

Surajit Chattopadhyay 2018-10-24 This volume contains the peer-reviewed proceedings of the International Conference on Modelling and Simulation (MS-17), held in Kolkata, India, 4th-5th November 2017, organized by the Association for the Advancement of Modelling and Simulation Techniques in Enterprises (AMSE, France) in association with the Institution of Engineering Technology (IET, UK), Kolkata Network. The contributions contained here showcase some recent advances in modelling and simulation across various aspects of science and technology. This book brings together articles describing applications of modelling and simulation techniques in fields as diverse as physics, mathematics, electrical engineering, industrial electronics, control, automation, power systems, energy and robotics. It includes a special section on mechanical, fuzzy, optical and opto-electronic control of oscillations. It provides a snapshot of the state of the art in modelling and simulation methods and their applications, and will be of interest to researchers and engineering professionals from industry, academia and research organizations.

Assessment Tools for Mapping Learning Outcomes With Learning Objectives Sinha, G. R. 2020-09-25 In educational institutions, outcome-based education (OBE) remains crucial in measuring how certain teaching techniques are impacting the students' ability to learn. Currently, these changes in students are mapped by analyzing the objectives and outcomes of certain learning processes. International accreditation agencies and quality assessment networks are all focusing on mapping between outcomes and objectives. The need of assessment tools arises that can provide a genuine mapping in the global context so that students or learners can achieve expected objectives. *Assessment Tools for Mapping Learning Outcomes With Learning Objectives* is a pivotal reference source that provides vital research on the implementation of quality assessment methods for measuring the outcomes of select learning processes on students. While highlighting topics such as quality assessment, effective employability, and student learning objectives, this book is ideally designed for students, administrators, policymakers, researchers, academicians, practitioners, managers, executives, strategists, and educators seeking current research on the application of modern mapping tools for assessing student learning outcomes in higher education.

Advances in Biometrics G.R. Sinha 2019-12-13 This book provides a framework for

robust and novel biometric techniques, along with implementation and design strategies. The theory, principles, pragmatic and modern methods, and future directions of biometrics are presented, along with in-depth coverage of biometric applications in driverless cars, automated and AI-based systems, IoT, and wearable devices. Additional coverage includes computer vision and pattern recognition, cybersecurity, cognitive computing, soft biometrics, and the social impact of biometric technology. The book will be a valuable reference for researchers, faculty, and practicing professionals working in biometrics and related fields, such as image processing, computer vision, and artificial intelligence. Highlights robust and novel biometrics techniques Provides implementation strategies and future research directions in the field of biometrics Includes case studies and emerging applications

The Future of Effluent Treatment Plants Maulin P. Shah 2021-05-24 The Future of Effluent Treatment Plants: Biological Treatment Systems is an advanced and updated version of existing biological technologies that includes their limitations, challenges, and potential application to remove chemical oxygen demand (COD), refractory chemical oxygen demand, biochemical oxygen demand (BOD), color removal and environmental pollutants through advancements in microbial bioremediation. The book introduces new trends and advances in environmental bioremediation with thorough discussions of recent developments. In addition, it illustrates that the application of these new emerging innovative technologies can lead to energy savings and resource recovery. The importance of respiration, nitrogen mineralization, nitrification, denitrification and biological phosphorus removal processes in the development of a fruitful and applicable solution for the removal of toxic pollutants from wastewater treatment plants is highlighted. Equally important is the knowledge and theoretical modeling of water movement through wastewater ecosystems. Finally, emphasis is given to the function of constructed wetlands and activated sludge processes. Considers different types of industrial wastewater Focuses on biological wastewater treatments Introduces new trends in bioremediation Addresses the future of WWTPs

Membrane-based Hybrid Processes for Wastewater Treatment Maulin P. Shah 2021-05-27 Membrane-Based Hybrid Processes for Wastewater Treatment analyzes and discusses the potential of membrane-based hybrid processes for the treatment of complex industrial wastewater, the recovery of valuable compounds, and water reutilization. In addition, recent and future trends in membrane technology are highlighted. Industrial wastewater contains a large variety of compounds, such as heavy metals, salts and nutrients, which makes its treatment challenging. Thus, the use of conventional water treatment methods is not always effective. Membrane-based hybrid processes have emerged as a promising technology to treat complex industrial wastewater. Discusses the properties, mechanisms, advantages, limitations and promising solutions of different types of membrane technologies Addresses the optimization of process parameters Describes the performance of different membranes Presents the potential of Nanotechnology to improve the treatment efficiency of wastewater treatment plants (WWTPs) Covers the application of membrane and membrane-based hybrid

treatment technologies for wastewater treatment Includes forward osmosis, electrodialysis, and diffusion dialysis Considers hybrid membrane systems expanded to cover zero liquid discharge, salt recovery, and removal of trace contaminants

Applied Mathematicsiii & Iv Dr. K. N. Mishra N. P. Bali

Advances in Modern Sensors G R Sinha 2020-11-19 Sensors are integral to modern living and are found in a huge number of applications in science, engineering and technology thus it is critical for scientists and technologists to understand the physical principles behind sensor types as well as their characteristics, applications, and how they can be suitably employed in sensor technologies. Whilst there exists a vast literature on the physics and characteristics of traditional sensors, this book provides a broad overview of the range of sensor technologies and attendant topics needed to optimise and utilise these devices in the modern world. Not only reviewing sensors by classification, the book encompasses the physics, design characteristics, simulation and interface electronics, and it includes case studies, future challenges and several other aspects of wider sensor technology to provide an overview of modern sensors and their applications. The broad scope will appeal to industrial and academic researchers and application engineers, especially those developing and implementing real-time hardware implementations employing smart sensors for emerging applications. Key Features Features a broad review of sensor types, including MEMS, wearable and smart sensors Presents application of modern sensors and emerging research directions Incorporates case studies Reviews wider associated technologies such as simulation, materials and interface electronics Interdisciplinary appeal making the text suitable for industrial and academic researchers as well as application engineers

Orchids for Jennie Frost Noel P T 2021-08-16 "Is there a time so-called 'right time' to express love?" This story revolves around the life of a 23-year-old boy, Joy Clive, who swamps in love with an oceanic-blue-eyed girl, Jennie Frost. This one-sided love tale is a profound poetic experience of romance that progresses as he develops and follows his self-created 'Slowly approaching love theory' to woo, win, and wed her. The time element is depicted as the deadly antagonist, but the question is, "Will his love thrive battling against this unalterable phenomenon?"

Higher Education in the 21st Century: Challenges and Opportunities Prof. Dr. S. Jeelani

Pharmacy Law and Ethics Monika Bhairam 2022-04-15 The textbook of Pharmacy Ethics and Law has been written for students of diploma in pharmacy second year students keeping in mind specific requirements of the Pharmacy Council of India (PCI), Education Regulation - 2020. The book is covering the entire syllabus as per new PCI norms including practicals and MCQs. This book containing twenty one chapters including general principals of law, pharmacy act, drug and

cosmetic act, medicinal and toilet preparation act, narcotic and psychotropic substance act, drug and magic remedies act, prevention cruelty to animals act, poison act, FSSAI, DPCO, code of ethics, medical termination pregnancy act, CDSCO, IPC, GRP, blood bank, biowaste management, bioethics, consumer protection act and medical devices.

Fingerprinting Analysis and Quality Control Methods of Herbal Medicines

Ravindra Kumar Pandey 2018-07-03 Due to the increase in the consumption of herbal medicine, there is a need to know which scientifically based methods are appropriate for assessing the quality of herbal medicines. Fingerprinting has emerged as a suitable technique for quality estimation. Chemical markers are used for evaluation of herbal medicines. Identification and quantification of these chemical markers are crucial for quality control of herbal medicines. This book provides updated knowledge on methodology, quality assessment, toxicity analysis and medicinal values of natural compounds.

Next Generation Healthcare Systems Using Soft Computing Techniques Rekh Ram

Janghel 2022-09-21 This book presents soft computing techniques and applications used in healthcare systems, along with the latest advancements. Written as a guide for assessing the roles that these techniques play, the book also highlights implementation strategies, lists problem-solving solutions, and paves the way for future research endeavors in smart and next-generation healthcare systems. This book provides applications of soft computing techniques related to healthcare systems and can be used as a reference guide for assessing the roles that various techniques, such as machine learning, fuzzy logic, and statical mathematics, play in the advancements of smart healthcare systems. The book presents the basics as well as the advanced concepts to help beginners, as well as industry professionals, get up to speed on the latest developments in healthcare systems. The book examines descriptive, predictive, and social network techniques and discusses analytical tools and the important role they play in finding solutions to problems in healthcare systems. A framework of robust and novel healthcare techniques is highlighted, as well as implementation strategies and a setup for future research endeavors. Healthcare Systems Using Soft Computing Techniques is a valuable resource for researchers and postgraduate students in healthcare systems engineering, computer science, information technology, and applied mathematics. The book introduces beginners to—and at the same time brings industry professionals up to speed with—the important role soft computing techniques play in smart healthcare systems.

Computer-aided Design and Diagnosis Methods for Biomedical Applications Varun

Bajaj 2021-04-28 Computer-aided design (CAD) plays a key role in improving biomedical systems for various applications. It also helps in the detection, identification, predication, analysis, and classification of diseases, in the management of chronic conditions, and in the delivery of health services. This book discusses the uses of CAD to solve real-world problems and challenges in biomedical systems with the help of appropriate case studies and research simulation results. Aiming to overcome the gap between CAD and biomedical

science, it describes behaviors, concepts, fundamentals, principles, case studies, and future directions for research, including the automatic identification of related disorders using CAD. Features: Proposes CAD for the study of biomedical signals to understand physiology and to improve healthcare systems' ability to diagnose and identify health disorders. Presents concepts of CAD for biomedical modalities in different disorders. Discusses design and simulation examples, issues, and challenges. Illustrates bio-potential signals and their appropriate use in studying different disorders. Includes case studies, practical examples, and research directions. Computer-Aided Design and Diagnosis Methods for Biometrical Applications is aimed at researchers, graduate students in biomedical engineering, image processing, biomedical technology, medical imaging, and health informatics.