Fuzzy Logic Based Sugarcane Leaf Disease Identification

#fuzzy logic #sugarcane leaf disease #disease identification #crop health monitoring #agricultural AI

Explore an innovative solution for sugarcane leaf disease identification utilizing fuzzy logic. This advanced system enables precise and early detection of various pathologies affecting sugarcane crops, thereby supporting crop health monitoring and enhancing overall agricultural AI applications for sustainable farming practices.

Image Processing and Capsule Networks

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.

Sugar-cane Diseases

This three volume book contains the Proceedings of 5th International Conference on Advanced Computing, Networking and Informatics (ICACNI 2017). The book focuses on the recent advancement of the broad areas of advanced computing, networking and informatics. It also includes novel ap-proaches devised by researchers from across the globe. This book brings together academic scientists, professors, research scholars and students to share and disseminate information on knowledge and scientific research works related to computing, networking, and informatics to discuss the practical challenges encountered and the solutions adopted. The book also promotes translation of basic research into applied investigation and convert applied investigation into practice.

Recent Findings in Intelligent Computing Techniques

Bioinspired systems, technologies and techniques known as “biomimetics” or the “mimicry of nature,” represent a ground-breaking method of scientific research based on innovation and a creative design approach of the ‘nature’ laboratory to be applied to any scientific discipline. This approach and the associated way of thinking facilitates the cross-fertilization of scientific fields, integrating biology and the interdisciplinary knowledge featuring the evolution of models that have refined in nature within any scientific discipline.

Biomimetics

Infrastructure Possibilities and Human-Centered Approaches With Industry 5.0 is a research book that serves as a comprehensive exploration of the potential impact of Industry 5.0 and the research opportunities presented by it, a new era of industrial revolution that integrates advanced technologies with human expertise and creativity. This book delves into the transformative effects of Industry 5.0 on society, with a particular focus on human-centric approaches and the key areas of agriculture, transportation, healthcare, and more. The book examines the revolutionary impact of Industry 5.0 in various domains. It explores the application of AI and machine learning in revolutionizing agriculture, improving livestock management, optimizing fertilizer usage, and detecting agricultural diseases. Additionally, it delves into the integration of advanced technologies in healthcare, including wearable devices, sensors, and robotics, to provide personalized and efficient healthcare services. Furthermore, the book explores the implications of Industry 5.0 on transportation, smart grid systems, and education. Throughout the discussion, the book addresses the ethical and social considerations associated with Industry 5.0, such as privacy, data protection, and social inequality. Written for research scholars, graduate engineering students, and postgraduate students in the fields of computer science, agriculture, and health engineering, this book serves as a valuable resource for understanding the transformative potential of Industry 5.0.

Infrastructure Possibilities and Human-Centered Approaches With Industry 5.0

The book features research papers presented at the International Conference on Emerging Technologies in Data Mining and Information Security (IEMIS 2018) held at the University of Engineering & Management, Kolkata, India, on February 23–25, 2018. It comprises high-quality research by academics and industrial experts in the field of computing and communication, including full-length papers, research-in-progress papers, case studies related to all the areas of data mining, machine learning, IoT and information security.

Emerging Technologies in Data Mining and Information Security

This book consolidates and summarizes smart technologies like IoT, edge computing, and AI used in different aspects of waste material management, mitigation, and recycling for a sustainable environment. One of the cases explains how IoT-based systems and wireless sensors can be used to continuously detect common pollutants such as volatile organic compounds (VOCs), carbon monoxide, and particulate matter (PM) and how the data collected are used to assess the overall air quality and determine actions for improvements. A collection of practical case studies, this book provides a comprehensive knowledge in smart waste management to readers in universities, research centers, and industries.

IoT-Based Smart Waste Management for Environmental Sustainability

In recent years, the advent of biosensors and bioelectronics has facilitated the swift and precise detection of numerous biomolecules or pathogens in animal samples, aquatic habitats, and plants. These technologies have emerged as potent assets for the agriculture and aquaculture industries. Many experts have raised the question; how might the integration of biosensors into portable devices or automated monitoring systems enable on-site and real-time detection of diverse biomolecules or pathogens? Agriculture and Aquaculture Applications of Biosensors and Bioelectronics presents the recent developments in biological recognition elements, transducer materials, and signal processing techniques for biosensors and bioelectronics used in agriculture and aquaculture applications. Sophisticated biosensors and bioelectronics operate through the immobilization of biological recognition components—such as enzymes or antibodies—on a transducer surface. This immobilization process allows for the targeted recognition and binding of biomolecules or pathogens. The resulting electrical, optical, or chemical changes triggered by the recognition event are quantifiable through various methods and are often enhanced by applications utilizing artificial intelligence (AI). The necessity for

high sensitivity and selectivity, the optimization of biocompatibility and stability, and the integration of biosensors with AI-aided solutions are just some of the challenges and opportunities in developing biosensors for high-tech agriculture and aquaculture. This book targets a mixed audience of biotechnology engineers, biosensors scientists, bioelectronics researchers, high-tech agriculture analysts, Ph.D. scholars, researchers, academics, professionals, engineers, and students.

Agriculture and Aquaculture Applications of Biosensors and Bioelectronics

This book presents focussed information related to dynamic cropland transformation, agriculture development, climate change, and environment with the application of advance geospatial technology. It describes research using geospatial tools and techniques to develop the models, design, and planning for agricultural land use optimization especially in south Asian countries. It covers agriculture production, water scarcity, industrial development, natural resources, environmental degradation, and sustainable development. Features: Provides the adaptation strategy from a multidisciplinary resilience perspective Addresses contemporary agricultural resilience to various climate change issues Develops novel approaches for sustainability with environmentally sound practices Discusses methodological and innovative approaches at local to global perspective Reports research using geospatial tools and techniques to develop the models, design, and planning for agricultural land use optimization The book is aimed at researchers, professionals, and graduate students in GIS, environmental engineering, geography, agriculture, and climate studies.

Agriculture and Climatic Issues in South Asia

Hybrid Computational Intelligence: Challenges and Utilities is a comprehensive resource that begins with the basics and main components of computational intelligence. It brings together many different aspects of the current research on HCI technologies, such as neural networks, support vector machines, fuzzy logic and evolutionary computation, while also covering a wide range of applications and implementation issues, from pattern recognition and system modeling, to intelligent control problems and biomedical applications. The book also explores the most widely used applications of hybrid computation as well as the history of their development. Each individual methodology provides hybrid systems with complementary reasoning and searching methods which allow the use of domain knowledge and empirical data to solve complex problems. Provides insights into the latest research trends in hybrid intelligent algorithms and architectures Focuses on the application of hybrid intelligent techniques for pattern mining and recognition, in big data analytics, and in human-computer interaction Features hybrid intelligent applications in biomedical engineering and healthcare informatics

Hybrid Computational Intelligence

This book covers the emerging applications of different computational and optimization techniques in order to achieve a sustainable agriculture. A sustainable agricultural management requires tools in providing integrated, area-specifi c, and interpreted prediction or forecasting and guidance in every aspect in agriculture.

Soft Computing and Optimization Techniques for Sustainable Agriculture

This book presents interdisciplinary research on cognition, mind and behavior from an information processing perspective. It includes chapters on Artificial Intelligence, Decision Support Systems, Machine Learning, Data Mining and Support Vector Machines, chiefly with regard to the data obtained and analyzed in Medical Informatics, Bioinformatics and related disciplines. The book reflects the state-of-the-art in Artificial Intelligence and Cognitive Science, and covers theory, algorithms, numerical simulation, error and uncertainty analysis, as well novel applications of new processing techniques in Biomedical Informatics, Computer Science and its applied areas. As such, it offers a valuable resource for students and researchers from the fields of Computer Science and Engineering in Medicine and Biology.

Bibliography of Agriculture

This three volume book contains the Proceedings of 5th International Conference on Advanced Computing, Networking and Informatics (ICACNI 2017). The book focuses on the recent advancement of the broad areas of advanced computing, networking and informatics. It also includes novel approaches devised by researchers from across the globe. This book brings together academic scientists,

professors, research scholars and students to share and disseminate information on knowledge and scientific research works related to computing, networking, and informatics to discuss the practical challenges encountered and the solutions adopted. The book also promotes translation of basic research into applied investigation and convert applied investigation into practice.

Cognitive Science and Artificial Intelligence

It is with greatpleasure that we present the proceedings of the 4th International Symposium on Visual Computing (ISVC 2008) in Las Vegas, Nevada. ISVC o?ers a common umbrella for the four main areas of visual computing including vision, graphics, visualization, and virtual reality. Its goal is to provide a forum for researchers, scientists, engineers and practitioners throughout the world to present their latest research ?ndings, ideas, developments and applications in the broader area of visual computing. This year,ISVC grew signi?cantly; the programconsisted of 15 oralsessions, 1 poster session, 8 special tracks, and 6 keynote presentations. The response to the call for papers was very strong; we received over 340 submissions for the main symposium from which we accepted 102 papers for oral presentation and 70 papers for poster presentation. Special track papers were solicited separately through the Organizing and Program Committees of each track. A total of 56 papers were accepted for oral presentation and 8 papers for poster presentation in the special tracks. All papers were reviewed with an emphasis on potential to contribute to the state of the art in the ?eld. Selection criteria included accuracy and originality of ideas, clarity and signi?cance of results, and presentation quality. The review process was quite rigorous, involving two to three independent blind reviews followed by several days of discussion. During the discussion period we tried to correct anomalies and errors that might have existed in the initial reviews.

Recent Findings in Intelligent Computing Techniques

Includes abstracts of the annual meetings of the American Society of Agronomy; Soil Science Society of America; Crop Science Society of America (- of its Agronomic Education Division).

Advances in Visual Computing

This book discusses the applications of different soft computing techniques for the web-based systems and services. The respective chapters highlight recent developments in the field of soft computing applications, from web-based information retrieval to online marketing and online healthcare. In each chapter author endeavor to explain the basic ideas behind the proposed applications in an accessible format for readers who may not possess a background in these fields. This carefully edited book covers a wide range of new applications of soft computing techniques in Web recommender systems, Online documents classification, Online documents summarization, Online document clustering, Online market intelligence, Web usage profiling, Web data extraction, Social network extraction, Question answering systems, Online health care, Web knowledge management, Multimedia information retrieval, Navigation guides, User profiles extraction, Web-based distributed information systems, Web security applications, Internet of Things Applications and so on. The book is aimed for researchers and practitioner who are engaged in developing and applying intelligent systems principles for solving real-life problems. Further, it has been structured so that each chapter can be read independently of the others.

Agronomy Abstracts

The field of healthcare is seeing a rapid expansion of technological advancement within current medical practices. The implementation of technologies including neural networks, multi-model imaging, genetic algorithms, and soft computing are assisting in predicting and identifying diseases, diagnosing cancer, and the examination of cells. Implementing these biomedical technologies remains a challenge for hospitals worldwide, creating a need for research on the specific applications of these computational techniques. Deep Neural Networks for Multimodal Imaging and Biomedical Applications provides research exploring the theoretical and practical aspects of emerging data computing methods and imaging techniques within healthcare and biomedicine. The publication provides a complete set of information in a single module starting from developing deep neural networks to predicting disease by employing multi-modal imaging. Featuring coverage on a broad range of topics such as prediction models, edge computing, and quantitative measurements, this book is ideally designed for researchers, academicians, physicians, IT consultants, medical software developers, practitioners, policymakers,

scholars, and students seeking current research on biomedical advancements and developing computational methods in healthcare.

Toward Enhanced and Sustainable Agricultural Productivity in the 2000's

This book includes selected papers from the 5th International Conference on Computational Vision and Bio Inspired Computing (ICCVBIC 2021), held in Coimbatore, India, during November 25–26, 2021. This book presents state-of-the-art research innovations in computational vision and bio-inspired techniques. The book reveals the theoretical and practical aspects of bio-inspired computing techniques, like machine learning, sensor-based models, evolutionary optimization and big data modeling and management that make use of effectual computing processes in the bio-inspired systems. It also contributes to the novel research that focuses on developing bio-inspired computing solutions for various domains, such as human–computer interaction, image processing, sensor-based single processing, recommender systems and facial recognition, which play an indispensable part in smart agriculture, smart city, biomedical and business intelligence applications.

Applications of Soft Computing for the Web

This book presents best selected papers presented at the First Global Conference on Artificial Intelligence and Applications (GCAIA 2020), organized by the University of Engineering & Management, Jaipur, India, during 8–10 September 2020. The proceeding will be targeting the current research works in the domain of intelligent systems and artificial intelligence.

Entering the RNA Wonderland: Opportunities and Challenges for RNA Therapeutics in the Cardiovascular System

Plant improvement has shifted its focus from yield, quality and disease resistance to factors that will enhance commerical export, such as early maturity, shelf life and better processing quality. Conventional plant breeding methods aiming at the improvement of a self-pollinating crop, such as wheat, usually take 10-12 years to develop and release of the new variety. During the past 10 years, significant advances have been made and accelerated methods have been developed for precision breeding and early release of crop varieties. This work summarizes concepts dealing with germplasm enhancement and development of improved varieties based on innovative methodologies that include doubled haploidy, marker assisted selection, marker assisted background selection, genetic mapping, genomic selection, high-throughput genotyping, high-throughput phenotyping, mutation breeding, reverse breeding, transgenic breeding, shuttle breeding, speed breeding, low cost high-throughput field phenotyping, etc. It is an important reference with special focus on accelerated development of improved crop varieties.

Deep Neural Networks for Multimodal Imaging and Biomedical Applications

Every year we see a remarkable increase in scientific knowledge. We are learning more each day about the world around us, about the numerous biological organisms of the biosphere, about the physical and chemical processes that shaped and continue to change our planet. The cataloging, retrieval, dissemination, and use of this new information along with the continued development of new computer technology provide some of the most challenging problems in science as we enter the Information Age. With the explosion of knowledge in science, it is especially important that students in introductory courses learn not only the basic material of a subject, but also about the newest developments in that subject. With this goal in mind, we have prepared a second edition of Introduction to Plant Diseases: Identification and Management. We prepared this edition with the same general purpose that we had for the first edition - to provide practical, up-to-date information that helps in the successful management of diseases on food, fiber, and landscape plants for students who do not have a strong background in the biological sciences. We included new information on (1) the precise identification of diseases and the pathogens that cause them, (2) the development of epidemics of plant diseases, (3) the application of biotechnology in plant pathology, (4) the use of alternative methods of crop production and disease management that help protect the environment, and (5) diseases that have become more important since the first edition was published.

Computational Vision and Bio-Inspired Computing

Remote Sensing in Precision Agriculture: Transforming Scientific Advancement into Innovation compiles the latest applications of remote sensing in agriculture using spaceborne, airborne and drones' geospatial data. The book presents case studies, new algorithms and the latest methods surrounding crop sown area estimation, determining crop health status, assessment of vegetation dynamics, crop diseases identification, crop yield estimation, soil properties, drone image analysis for crop damage assessment, and other issues in precision agriculture. This book is ideal for those seeking to explore and implement remote sensing in an effective and efficient manner with its compendium of scientifically and technologically sound information. Presents a well-integrated collection of chapters, with quality, consistency and continuity Provides the latest RS techniques in Precision Agriculture that are addressed by leading experts Includes detailed, yet geographically global case studies that can be easily understood, reproduced or implemented Covers geospatial data, with codes available through shared links

Applications of Artificial Intelligence in Engineering

This book was created with the intention of informing an international audience about the latest technological aspects for developing smart agricultural applications. As artificial intelligence (AI) takes the main role in this, the majority of the chapters are associated with the role of AI and data analytics components for better agricultural applications. The first two chapters provide alternative, wide reviews of the use of AI, robotics, and the Internet of Things as effective solutions to agricultural problems. The third chapter looks at the use of blockchain technology in smart agricultural scenarios. In the fourth chapter, a future view is provided of an Internet of Things-oriented sustainable agriculture. Next, the fifth chapter provides a governmental evaluation of advanced farming technologies, and the sixth chapter discusses the role of big data in smart agricultural applications. The role of the blockchain is evaluated in terms of an industrial view under the seventh chapter, and the eighth chapter provides a discussion of data mining and data extraction, which is essential for better further analysis by smart tools. The ninth chapter evaluates the use of machine learning in food processing and preservation, which is a critical issue for dealing with issues concerns regarding insufficient foud sources. The tenth chapter also discusses sustainability, and the eleventh chapter focuses on the problem of plant disease prediction, which is among the critical agricultural issues. Similarly, the twelfth chapter considers the use of deep learning for classifying plant diseases. Finally, the book ends with a look at cyber threats to farming automation in the thirteenth chapter and a case study of India for a better, smart, and sustainable agriculture in the fourteenth chapter. This book presents the most critical research topics of today's smart agricultural applications and provides a valuable view for both technological knowledge and ability that will be helpful to academicians, scientists, students who are the future of science, and industrial practitioners who collaborate with academia.

Bibliography of Agriculture with Subject Index

It was a compliment to me to be asked to prepare the fourth edition of Westcott's Plant Disease Handbook, and the decision to accept the responsi bility for the fourth edition and now the fifth edition was not taken lightly. The task has been a formidable one. I have always had a great respect professionally for Dr. Cynthia Westcott. That respect has grown considerably with the completion of the two editions. I now fully realize the tremendous amount of effort expended by Dr. Westcott in developing the Handbook. A book such as this is never finished, since one is never sure that everything has been included that should be. I would quote and endorse the words of Dr. Westcott in her preface to the first edition: "It is easy enough to start a book on plant disease. It is impossible to finish it. " This revision of the Handbook retains the same general format contained in the previous editions. The chemicals and pesticides regulations have been updated; a few taxonomic changes have been made in the bacteria, fungi, and mistletoes; the changing picture in diseases caused by viruses and/or viruslike agents has been described. A few new host plants have been added, and many recently reported diseases as well as previously known diseases listed now on new hosts have been included. In addition, photographs have been replaced where possible, and the color photograph section has been retained.

Accelerated Plant Breeding, Volume 1

This book discusses new cognitive informatics tools, algorithms and methods that mimic the mechanisms of the human brain which lead to an impending revolution in understating a large amount of data generated by various smart applications. The book is a collection of peer-reviewed best selected research papers presented at the International Conference on Data Intelligence and Cognitive

Informatics (ICDICI 2020), organized by SCAD College of Engineering and Technology, Tirunelveli, India, during 8–9 July 2020. The book includes novel work in data intelligence domain which combines with the increasing efforts of artificial intelligence, machine learning, deep learning and cognitive science to study and develop a deeper understanding of the information processing systems.

Introduction to Plant Diseases

Plant diseases play an important role on our daily lives. Most of plant diseases are visible and are caused by biotic and/or abiotic factors. Symptoms are usually the results of a morphological change, alteration or damage to plant tissue and/or cells due to an interference of the plant’s metabolism. All basic structures of vascular plants are subject to attack by pathogens. The failure in accurate disease diagnosis and management may lead to huge losses in plant production and related commodities, which causes nutritional food scarcity. Typically, the appearance of a biotic symptom will indicate the relatively late stage of an infection and/or colonization of a pathogen. Expert detection, accurate diagnosis, and timely management play a significant role in keeping plants free from pathogens. In this book expert scholars share their research knowledge and key literature which are vital toward the diagnosis of plant diseases across the globe, addressing traditional plant pathology techniques, as well as advanced molecular diagnostic approach.

Remote Sensing in Precision Agriculture

"The applied research indicates that, to improve awareness, park education programs should be targeted specifically to the user groups primarily through outreach programs. Further, the Park's management programs should be highlighted, particularly the beneficial, tangible products and services (benefits) the Park provides to each user group... The closer the tie between reef conditions and business earnings, the greater the users' support for reef conservation." Coral reefs are sometimes referred to as "canaries of the sea" because of their early warning ability to show near-shore oceanic stress. Because of their biological diversity, they are also called "rainforests of the sea." Coral reefs are vital to the well being of millions of people. Coral reef managers and government officials trying to save their valuable national resources have turned to research on coral reefs for help. The research presented in this publication merits a great deal of notice because the output is useful for decision support and training tools in integrated coastal zone management (ICZM). The work on cost-effectiveness analysis has developed integrated economic and ecological models, relying extensively on fuzzy logic procedures to model impacts and effects of interventions within the reef environment. By contrast, the marine system valuation work provides economic valuations of coral reefs, demonstrating the use of different modeling methods and treating key policy issues within this context. This publication will interest coastal zone experts and managers worldwide

Artificial Intelligence and Smart Agriculture Technology

Virus and MLO diseases; Bacterial diseases; Fungus diseases - foliage diseases; Fungus diseases - diseases of stem, leaf sheath and root; Fungus diseases - seedling diseases; Fungus diseases - diseases of grain and inflorescence; Diseases caused by nematodes; Physiological diseases.

Soils and Fertilizers

The issue of biofuels has already been much debated, but the focus to date has largely been on Latin America and deforestation - this highly original work breaks fresh ground in looking at the African perspective. Most African governments see biofuels as having the potential to increase agricultural productivity and export incomes and thus strengthen their national economies, improving energy balances and rural employment. At the same time climate change may be addressed through reduction of green house gas emissions. There are, however, a number of uncertainties mounting that challenge this scenario. Using cutting-edge empirical case studies, this knowledge gap is addressed in a variety of chapters examining the effects of large-scale biofuel production on African agriculture. In particular, 'land grabbing' and food security issues are scrutinised, both of which have become vital topics in regard to the environmental and developmental governance of African countries. A revealing book for anyone wishing to understand the startling impact of biofuels and land grabbing on Africa.

Westcott’s Plant Disease Handbook

Nowadays, the degree and scale of flood hazards has been massively increasing as a result of the changing climate, and large-scale floods jeopardize lives and properties, causing great economic losses, in the inundation-prone areas of the world. Early flood warning systems are promising countermeasures against flood hazards and losses. A collaborative assessment according to multiple disciplines, comprising hydrology, remote sensing, and meteorology, of the magnitude and impacts of flood hazards on inundation areas significantly contributes to model the integrity and precision of flood forecasting. Methodologically oriented countermeasures against flood hazards may involve the forecasting of reservoir inflows, river flows, tropical cyclone tracks, and flooding at different lead times and/or scales. Analyses of impacts, risks, uncertainty, resilience, and scenarios coupled with policy-oriented suggestions will give information for flood hazard mitigation. Emerging advances in computing technologies coupled with big-data mining have boosted data-driven applications, among which Machine Learning technology, with its flexibility and scalability in pattern extraction, has modernized not only scientific thinking but also predictive applications. This book explores recent Machine Learning advances on flood forecast and management in a timely manner and presents interdisciplinary approaches to modelling the complexity of flood hazards-related issues, with contributions to integrative solutions from a local, regional or global perspective.

Data Intelligence and Cognitive Informatics

The application of imaging techniques in plant and agricultural sciences had previously been confined to images obtained through remote sensing techniques. Technological advancements now allow image analysis for the nondestructive and objective evaluation of biological objects. This has opened a new window in the field of plant science. Plant Image

Current Trends in Plant Disease Diagnostics and Management Practices

In recent years, especially with the approach of the 21st Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris in late 2015, the number of publications, conferences and meetings on climate change has been growing exponentially. Yet uncertainties remain concerning rural tropical areas where models are forecasting the onset of multiple disorders and trends are unclear. Meanwhile, the impact of climate change on the poorest communities is regularly documented, often prompting alarmist reactions. How can food security be achieved while adapting to and mitigating climate change? What are the main threats to agriculture in developing countries? How do farmers in these countries cope with the threats? What does agricultural research propose? What options have yet to be investigated? A broad scope of scientific research is underway to address these challenges. Diverse solutions are available, including new agricultural practices, water management, agricultural waste recycling, diagnosis of emerging diseases, payment for ecosystem services, etc. Gaining insight into the financial and political mechanisms that underlie international climate negotiations is also essential to design practical ways to deal with climate issues and meet sustainable development requirements in collaboration with farmers. This book pools the wealth of experience of dozens of researchers and development officers from a range of disciplines. We have focused on making it detailed, accurate and hopefully easy to read for researchers, students and all other informed readers.

2018 International Conference on Design Innovations for 3Cs Compute Communicate Control (ICDI3C).

This book highlights recent research on bio-inspired computing and its various innovative applications in information and communication technologies. It presents 80 high-quality papers from the 12th International Conference on Innovations in Bio-Inspired Computing and Applications (IBICA 2021) and 11th World Congress on Information and Communication Technologies (WICT 2021), which was held online during December 16–18, 2021. As a premier conference, IBICA–WICT brings together researchers, engineers and practitioners whose work involves bio-inspired computing, computational intelligence and their applications in information security, real-world contexts, etc. Including contributions by authors from 25 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

Integrated Coastal Zone Management of Coral Reefs

Smart Computational Intelligence in Biomedical and Health Informatics presents state-of-the-art innovations; research, design, and implementation of methodological and algorithmic solutions to data

processing problems, including analysis of evolving trends in health informatics and computer-aided diagnosis. This book describes practical, applications-led research regarding the use of methods and devices in clinical diagnosis, disease prevention, and patient monitoring and management. It also covers simulation and modeling, measurement and control, analysis, information extraction and monitoring of physiological data in clinical medicine and the biological sciences. FEATURES Covers evolutionary approaches to solve optimization problems in biomedical engineering Discusses IoT, Cloud computing, and data analytics in healthcare informatics Provides computational intelligence-based solution for diagnosis of diseases Reviews modelling and simulations in designing of biomedical equipment Promotes machine learning-based approaches to improvements in biomedical engineering problems This book is for researchers, graduate students in healthcare, biomedical engineers, and those interested in health informatics, computational intelligence, and machine learning.

Rice Diseases

Biofuels, Land Grabbing and Food Security in Africa