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Data Driven Approach Towards Disruptive Technologies Proceedings of MIDAS 2020 Springer Nature This book is a compilation of peer-reviewed papers presented at the International Conference on Machine Intelligence and Data Science Applications, organized by the School of Computer Science, University of Petroleum & Energy Studies, Dehradun, India, during 4–5 September 2020. The book addresses the algorithmic aspect of machine intelligence which includes the framework and optimization of various states of algorithms. Variety of papers related to wide applications in various fields like data-driven industrial IoT, bioinformatics, network and security, autonomous computing and various other aligned areas. The book concludes with interdisciplinary applications like legal, health care, smart society, cyber-physical system and smart agriculture. All papers have been carefully reviewed. The book is of interest to computer science engineers, lecturers/researchers in machine intelligence discipline and engineering graduates. **A Course in Multivariable Calculus and Analysis** Springer Science & Business Media This self-contained textbook gives a thorough exposition of multivariable calculus. The emphasis is on correlating general concepts and results of multivariable calculus with their counterparts in one-variable calculus. Further, the book includes genuine analogues of basic results in one-variable calculus, such as the mean value theorem and the fundamental theorem of calculus. This book is distinguished from others on the subject: it examines topics not typically covered, such as monotonicity, bimonotonicity, and convexity, together with their relation to partial differentiation, cubature rules for approximate evaluation of double integrals, and conditional as well as unconditional convergence of double series and improper double integrals. Each chapter contains detailed proofs of relevant results, along with numerous examples and a wide collection of exercises of varying degrees of difficulty, making the book useful to undergraduate and graduate students alike. **Internet of Things and Big Data Analytics Toward Next-Generation Intelligence** Springer This book highlights state-of-the-art research on big data and the Internet of Things (IoT), along with related areas to ensure efficient and Internet-compatible IoT systems. It not only discusses big data security and privacy challenges, but also energy-efficient approaches to improving virtual machine placement in cloud computing environments. Big data and the Internet of Things (IoT) are ultimately two sides of the same coin, yet extracting, analyzing and managing IoT data poses a serious challenge. Accordingly, proper analytics infrastructures/platforms should be used to analyze IoT data. Information technology (IT) allows people to upload, retrieve, store and collect information, which ultimately forms big data. The use of big data analytics has grown tremendously in just the past few years. At the same time, the IoT has entered the public consciousness, sparking people's imaginations as to what a fully connected world can offer. Further, the book discusses the analysis of real-time big data to derive actionable intelligence in enterprise applications in several domains, such as in industry and agriculture. It explores possible automated solutions in daily life, including structures for smart cities and automated home systems based on IoT technology, as well as health care systems that manage large amounts of data (big data) to improve clinical decisions. The book addresses the security and privacy of the IoT and big data technologies, while also revealing the impact of IoT technologies on several scenarios in smart cities design. Intended as a comprehensive introduction, it offers in-depth analysis and provides scientists, engineers and professionals the latest techniques, frameworks and strategies used in IoT and big data technologies. **Interdisciplinary Research in Technology and Management Proceedings of the International Conference on Interdisciplinary Research in Technology and Management (IRTM, 2021), 26-28 February, 2021, Kolkata, India** CRC Press The conference on 'Interdisciplinary Research in Technology and Management' was a bold experiment in deviating from the traditional approach of conferences which focus on a specific topic or theme. By attempting to bring diverse inter-related topics on a common platform, the conference has sought to answer a long felt need and give a fillip to interdisciplinary research not only within the technology domain but across domains in the management field as well. The spectrum of topics covered in the research papers is too wide to be singled out for specific mention but it is noteworthy that these papers addressed many important and relevant concerns of the day. **Image Processing Principles and Applications** John Wiley & Sons Image processing-from basics to advanced applications Learn how to master image processing and compression with this outstanding state-of-the-art reference. From fundamentals to sophisticated applications, Image Processing: Principles and Applications covers multiple topics and provides a fresh perspective on future directions and innovations in the field, including: * Image transformation techniques, including wavelet transformation and developments * Image enhancement and restoration, including noise modeling and filtering * Segmentation schemes, and classification and recognition of objects * Texture and shape analysis techniques * Fuzzy set theoretical approaches in image processing, neural networks, etc. * Content-based image retrieval and image mining * Biomedical image analysis and interpretation, including biometrical algorithms such as face recognition and signature verification * Remotely sensed images and their applications * Principles and applications of dynamic scene analysis and moving object detection and tracking * Fundamentals of image compression, including the JPEG standard and the new JPEG2000 standard Additional features include problems and solutions with each chapter to help you apply the theory and techniques, as well as bibliographies for researching specialized topics. With its extensive use of examples and illustrative figures, this is a superior title for students and practitioners in computer science, wireless and multimedia communications, and engineering. **Advances in Industrial and Production Engineering Select Proceedings of FLAME 2020** Springer Nature This book comprises the select proceedings of the 2nd International Conference on Future Learning Aspects of Mechanical Engineering (FLAME) 2020. In particular, this volume discusses different topics of industrial and production engineering such as sustainable manufacturing processes, logistics, Industry 4.0 practices, circular economy, lean six sigma, agile manufacturing, additive manufacturing, IoT and Big Data in manufacturing, 3D printing, simulation, manufacturing management and automation, surface roughness, multi-objective optimization and modelling for production processes, developments in casting, welding, machining, and machine tools. The contents of this book will be useful for researchers as well as industry professionals. **Knowledge Management in Organizations 14th International Conference, KMO 2019, Zamora, Spain, July 15-18, 2019, Proceedings** Springer This book contains the refereed proceedings of the 14th International Conference on Knowledge Management in Organizations, KMO 2019, held in Zamora, Spain, in July 2019. The 46 papers accepted for KMO 2019 were selected from 109 submissions and are organized in topical sections on: knowledge management models and analysis; knowledge transfer and learning; knowledge creation; knowledge and organization; information systems and information science; data mining and intelligent science; social networks and social aspects of KM; big data and IoT; and new trends in IT. **Handbook of Automotive Power Electronics and Motor Drives** CRC Press Initially, the only electric loads encountered in an automobile were for lighting and the starter motor. Today, demands on performance, safety, emissions, comfort, convenience, and entertainment, and communications have seen the working-in of seemingly innumerable advanced electronic devices. Consequently, vehicle electric systems require larger capacities and more complex configurations to deal with these demands. Covering applications in conventional, hybrid-electric, and electric vehicles, the Handbook of Automotive Power Electronics and Motor Drives provides a comprehensive reference for automotive electrical systems. This authoritative handbook features contributions from an outstanding international panel of experts from industry and academia, highlighting existing and emerging technologies. Divided into five parts, the Handbook of Automotive Power Electronics and Motor Drives offers an overview of automotive power systems, discusses semiconductor devices, sensors, and other components, explains different power electronic converters, examines electric machines and associated drives, and details various advanced electrical loads as well as battery technology for automobile applications. As we seek to answer the call for safer, more efficient, and lower-emission vehicles from regulators and consumer insistence on better performance, comfort, and entertainment, the technologies outlined in this book are vital for engineering advanced vehicles that will satisfy these criteria. **Electric Drives and Electromechanical Systems Applications and Control** Butterworth-Heinemann Electric Drives and Electromechanical Devices: Applications and Control, Second Edition, presents a unified approach to the design and application of modern drive system. It explores problems involved in assembling complete, modern electric drive systems involving mechanical, electrical, and electronic elements. This book provides a global overview of design, specification applications, important design information, and methodologies. This new edition has been restructured to present a seamless, logical discussion on a wide range of topical problems relating to the design and specification of the complete motor-drive system. It is organized to establish immediate solutions to specific application problems. Subsidiary issues that have a considerable impact on the overall performance and reliability, including environmental protection and costs, energy efficiency, and cyber security, are also considered. Presents a comprehensive consideration of electromechanical systems with insights into the complete drive system, including required sensors and mechanical components Features in-depth discussion of control schemes, particularly focusing on practical operation Includes extensive references to modern application domains and real-world case studies, such as electric vehicles Considers the cyber aspects of drives, including networking and security **Agile Software Development Quality Assurance** IGI Global "This book provides the research and instruction used to develop and implement software quickly, in small iteration cycles, and in close cooperation with the customer in an adaptive way, making it possible to react to changes set by the constant changing business environment. It presents four values explaining extreme programming (XP), the most widely adopted agile methodology"--Provided by publisher. **Information—Consciousness—Reality How a New Understanding of the Universe Can Help Answer Age-Old Questions of Existence** Springer This open access book chronicles the rise of a new scientific paradigm offering novel insights into the age-old enigmas of existence. Over 300 years ago, the human mind discovered the machine code of reality: mathematics. By utilizing abstract thought systems, humans began to decode the workings of the cosmos. From this understanding, the current scientific paradigm emerged, ultimately discovering the gift of technology. Today, however, our island of knowledge is surrounded by ever longer shores of ignorance. Science appears to have hit a dead end when confronted with the nature of reality and consciousness. In this fascinating and accessible volume, James Glattfelder explores a radical paradigm shift uncovering the ontology of reality. It is found to be information-theoretic and participatory, yielding a computational and programmable universe. **EEG Signal Processing** John Wiley & Sons Electroencephalograms (EEGs) are becoming increasingly important measurements of brain activity and they have great potential for the diagnosis and treatment of mental and brain diseases and abnormalities. With appropriate interpretation methods they are emerging as a key methodology to satisfy the increasing global demand for more affordable and effective clinical and healthcare services. Developing and understanding advanced signal processing techniques for the analysis of EEG signals is crucial in the area of biomedical research. This book focuses on these techniques, providing expansive coverage of algorithms and tools from the field of digital signal processing. It discusses their applications to medical data, using graphs and topographic images to show simulation results that assess the efficacy of the methods. Additionally, expect to find: explanations of the significance of EEG signal analysis and processing (with examples) and a useful theoretical and mathematical background for the analysis and processing of EEG signals; an exploration of normal and abnormal EEGs, neurological symptoms and diagnostic information, and representations of the EEGs; reviews of theoretical approaches in EEG modelling, such as restoration, enhancement, segmentation, and the removal of different internal and external artefacts from the EEG and ERP (event-

related potential) signals; coverage of major abnormalities such as seizure, and mental illnesses such as dementia, schizophrenia, and Alzheimer's disease, together with their mathematical interpretations from the EEG and ERP signals and sleep phenomenon; descriptions of nonlinear and adaptive digital signal processing techniques for abnormality detection, source localization and brain-computer interfacing using multi-channel EEG data with emphasis on non-invasive techniques, together with future topics for research in the area of EEG signal processing. The information within EEG Signal Processing has the potential to enhance the clinically-related information within EEG signals, thereby aiding physicians and ultimately providing more cost effective, efficient diagnostic tools. It will be beneficial to psychiatrists, neurophysiologists, engineers, and students or researchers in neurosciences. Undergraduate and postgraduate biomedical engineering students and postgraduate epileptology students will also find it a helpful reference. **Multi-Objective Decision Making** Morgan & Claypool Publishers Many real-world decision problems have multiple objectives. For example, when choosing a medical treatment plan, we want to maximize the efficacy of the treatment, but also minimize the side effects. These objectives typically conflict, e.g., we can often increase the efficacy of the treatment, but at the cost of more severe side effects. In this book, we outline how to deal with multiple objectives in decision-theoretic planning and reinforcement learning algorithms. To illustrate this, we employ the popular problem classes of multi-objective Markov decision processes (MOMDPs) and multi-objective coordination graphs (MO-CoGs). First, we discuss different use cases for multi-objective decision making, and why they often necessitate explicitly multi-objective algorithms. We advocate a utility-based approach to multi-objective decision making, i.e., that what constitutes an optimal solution to a multi-objective decision problem should be derived from the available information about user utility. We show how different assumptions about user utility and what types of policies are allowed lead to different solution concepts, which we outline in a taxonomy of multi-objective decision problems. Second, we show how to create new methods for multi-objective decision making using existing single-objective methods as a basis. Focusing on planning, we describe two ways to creating multi-objective algorithms: in the inner loop approach, the inner workings of a single-objective method are adapted to work with multi-objective solution concepts; in the outer loop approach, a wrapper is created around a single-objective method that solves the multi-objective problem as a series of single-objective problems. After discussing the creation of such methods for the planning setting, we discuss how these approaches apply to the learning setting. Next, we discuss three promising application domains for multi-objective decision making algorithms: energy, health, and infrastructure and transportation. Finally, we conclude by outlining important open problems and promising future directions. **Frontiers in Intelligent Computing: Theory and Applications Proceedings of the 7th International Conference on FICTA (2018), Volume 2** Springer Nature This book presents the proceedings of the 7th International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA 2018), held at Duy Tan University, Da Nang, Vietnam. The event brought together researchers, scientists, engineers, and practitioners to exchange ideas and experiences in the domain of intelligent computing theories with prospective applications in various engineering disciplines. These proceedings are divided into two volumes. Covering broad areas of intelligent engineering informatics, with papers exploring both the theoretical and practical aspects of various areas like ANN and genetic algorithms, human-computer interaction, intelligent control optimization, intelligent e-learning systems, machine learning, mobile computing, and multi-agent systems, this volume is a valuable resource for postgraduate students in various engineering disciplines. **Theory of Finite and Infinite Graphs** Springer Science & Business Media To most graph theorists there are two outstanding landmarks in the history of their subject. One is Euler's solution of the Konigsberg Bridges Problem, dated 1736, and the other is the appearance of Denes Konig's textbook in 1936. "From Konigsberg to Konig's book" sings the poetess, "So runs the graphic tale . . ." [10]. There were earlier books that took note of graph theory. Veb len's Analysis Situs, published in 1931, is about general combinato rial topology. But its first two chapters, on "Linear graphs" and "Two-Dimensional Complexes," are almost exclusively concerned with the territory still explored by graph theorists. Rouse Ball's Mathematical Recreations and Essays told, usually without proofs, of the major graph-theoretical advances of the nineteenth century, of the Five Colour Theorem, of Petersen's Theorem on I-factors, and of Cayley's enumerations of trees. It was Rouse Ball's book that kindled my own graph-theoretical enthusiasm. The graph-theoretical papers of Hassler Whitney, published in 1931-1933, would have made an excellent textbook in English had they been collected and published as such. But the honour of presenting Graph Theory to the mathe matical world as a subject in its own right, with its own textbook, belongs to Denes Konig. Low was the prestige of Graph Theory in the Dirty Thirties. It is still remembered, with resentment now shading into amuse ment, how one mathematician scorned it as "The slums of Topol ogy." **Railway Management and Engineering** Routledge In a rapidly changing world, with increasing competition in all sectors of transportation, railways are in a period of restructuring their management and technology. New methods of organization are introduced, commercial and tariff policies change radically, a more entrepreneurial spirit is required. At the same time, new high-speed tracks are being constructed and old tracks are renewed, high-comfort rolling stock vehicles are being introduced, logistics and combined transport are being developed. Awareness of environmental issues and search for greater safety give to the railways a new role within the transportation system. Meanwhile, methods of analysis have significantly evolved, principally due to computer applications and new ways of thinking and approaching old problems. Therefore it becomes necessary to come up with a new scientific approach to tackle management and engineering aspects of railways, to understand in-depth the origins and inter-relationships of the various situations and phenomena and to suggest the appropriate methods and solutions to solve the various emerging problems. This book aims to cover the need for a new scientific approach for railways. It is written for railway managers, economists and engineers, consulting economists and engineers, students of schools of engineering, transportation and management. The book is divided into three distinct parts: Part A deals with the management of railways, Part B deals with the track and, Part C deals with rolling stock and environmental topics. Each chapter of the book contains the necessary theoretical analysis of the phenomena studied, the recommended solutions, applications, charts and design of the specific railway component. In this way, both the requirement for a theoretical analysis is met, and the need of the railway manager and engineer for tables, nomographs, regulations, etc. is satisfied. Railways in Europe have separated activities of infrastructure from those of operation. In other parts of the world, however, railways remain unified. The book addresses both situation. Railways present great differences in their technologies. Something may be valid for one such technology, but not for another. To overcome this problem, regulations of the International Union of Railways (UIC) as well as European Standardization (CEN) have been used to the greatest extent possible. Whenever a specific technology or method is presented, the limits of its application are clearly emphasized. **Nanotechnology For Dummies** John Wiley & Sons **The Art of Network Architecture Business-Driven Design** Cisco Press The Art of Network Architecture Business-Driven Design The business-centered, business-driven guide to architecting and evolving networks The Art of Network Architecture is the first book that places business needs and capabilities at the center of the process of architecting and evolving networks. Two leading enterprise network architects help you craft solutions that are fully aligned with business strategy, smoothly accommodate change, and maximize future flexibility. Russ White and Denise Donohue guide network designers in asking and answering the crucial questions that lead to elegant, high-value solutions. Carefully blending business and technical concerns, they show how to optimize all network interactions involving flow, time, and people. The authors review important links between business requirements and network design, helping you capture the information you need to design effectively. They introduce today's most useful models and frameworks, fully addressing modularity, resilience, security, and management. Next, they drill down into network structure and topology, covering virtualization, overlays, modern routing choices, and highly complex network environments. In the final section, the authors integrate all these ideas to consider four realistic design challenges: user mobility, cloud services, Software Defined Networking (SDN), and today's radically new data center environments. • Understand how your choices of technologies and design paradigms will impact your business • Customize designs to improve workflows, support BYOD, and ensure business continuity • Use modularity, simplicity, and network management to prepare for rapid change • Build resilience by addressing human factors and redundancy • Design for security, hardening networks without making them brittle • Minimize network management pain, and maximize gain • Compare topologies and their tradeoffs • Consider the implications of network virtualization, and walk through an MPLS-based L3VPN example • Choose routing protocols in the context of business and IT requirements • Maximize mobility via ILNP, LISP, Mobile IP, host routing, MANET, and/or DDNS • Learn about the challenges of removing and changing services hosted in cloud environments • Understand the opportunities and risks presented by SDNs • Effectively design data center control planes and topologies **Fuzzy Regression Analysis** Physica Regression analysis is a relatively simple yet extremely useful and widely employed tool for determining relationship between some variables on the basis of some observed values taken by these variables. Fuzzy regression analysis has been recently devised to accommodate in the framework of regression analysis vaguely specified data which are omnipresent in many applications, notably in all areas where human judgements are used. Fuzzy sets theory provides here proper tools. This book is a collection of papers written by virtually all major contributors to fuzzy regression. Its main issue is that vague, imprecise, etc. data may now be used in regression analysis. This is new. Apart from this it gives an extensive coverage of the whole field of fuzzy regression, both in a strictly mathematical and applicational perspective. Most approaches are algorithmic, and can be readily implemented. Information on software is provided. **Sand and Sustainability Finding New Solutions for Environmental Governance of Global Sand Resources : Synthesis for Policy Makers** Sand and gravels are the unrecognised foundational material of our economies. They are mined the world over, with aggregates accounting for the largest volume of solid material extracted globally (Peduzzi, 2014; Beiser, 2018). At the same time, these materials cannot be produced from our terrestrial, riverine and marine environments in quantities needed to meet demand from a world of 10 billion people without effective policy, planning, regulation and management. Such actions remain largely unaddressed by decision makers in public or private sectors. It is time to challenge the paradigm of infinite sand resources through constructive dialogue and solution-finding. This report aims to be the starting point from which a productive global conversation on sand extraction can begin. This synthesis was produced following a United Nations Environment Programme expert roundtable event held on 11 October 2018 in Geneva, Switzerland. The discussions emphasised potential solutions for mitigating mineral sands and aggregates extraction impacts and generating adequate support for responsible consumption pathways. Expert views were collated and complemented with additional research and consultation to distil key messages on an agenda for tackling this issue in 2019 and beyond. **Manufacturing Processes 2 Grinding, Honing, Lapping** Springer Science & Business Media The future of manufacturing companies depends largely on their ability to adapt to swiftly changing global conditions. These are exemplified by international com- tition, rapidly growing intercommunication and the increased significance of en- ronmental issues [KLOC98a, ENGE02]. Precision machining with geometrically undefined cutting edges represents a key production engineering technology with high efficiency, security and machining quality. DIN norm 8589 subsumes within the group "machining with geometrically - defined cutting edges" the following material removal manufacturing processes: grinding, honing, lapping, free abrasive grinding and abrasive blast cutting. - chining is carried out in these production methods by means of more or less - regularly formed grains composed of hard substances brought into contact with the material. Of all methods understood as machining with geometrically undefined cutting edges, only grinding, honing and lapping can, strictly speaking, be considered p- cision machining. Free abrasive grinding and abrasive blast cutting, also treated in this book, represent a special group, as they generally cannot bring about geom- rical change in the material. **Hotel Revenue Management: From Theory to Practice** Zangador This research monograph aims at developing an integrative framework of hotel revenue management. It elaborates the fundamental theoretical concepts in the field of hotel revenue management like the revenue management system, process, metrics, analysis, forecasting, segmentation and profiling, and ethical issues. Special attention is paid on the pricing and non-pricing revenue management tools used by hoteliers to maximise their revenues and gross operating profit. The monograph investigates the revenue management practices of accommodation establishments in Bulgaria and provides recommendations for their improvement. The book is suitable for undergraduate and graduate students in tourism, hospitality, hotel management, services studies programmes, and researchers interested in revenue/yield management. The book may also be used by hotel general managers, marketing managers, revenue managers and other practitioners looking for ways to improve their knowledge in the field. **Measurement Systems Analysis Reference Manual Neutrosophy Neutrosophic Probability, Set, and Logic : Analytic Synthesis & Synthetic Analysis** Wind Energy Generation: Modelling and Control John Wiley & Sons WIND ENERGY GENERATION MODELLING AND CONTROL WIND ENERGY GENERATION MODELLING AND CONTROL With increasing concern over climate change and the security of energy supplies, wind power is emerging as an important source of electrical energy throughout the world. Modern wind turbines use advanced power electronics to provide efficient generator control and to ensure compatible operation with the power system. Wind Energy Generation describes the fundamental principles and modelling of the electrical generator and power electronic systems used in large wind turbines. It also discusses how they interact with the power system and the influence of wind turbines on power system operation and stability. Key features: Includes a comprehensive account of power electronic equipment used in wind turbines and for their grid connection. Describes enabling technologies which facilitate the connection of large-scale onshore and offshore wind farms. Provides detailed modelling and control of wind turbine systems. Shows a number of simulations and case studies which explain the dynamic interaction between wind power and conventional generation. **Medical Image Processing Techniques and Applications** Springer Science & Business Media The book is designed for end users in the field of digital imaging, who wish to update their skills and understanding with the latest techniques

in image analysis. The book emphasizes the conceptual framework of image analysis and the effective use of image processing tools. It uses applications in a variety of fields to demonstrate and consolidate both specific and general concepts, and to build intuition, insight and understanding. Although the chapters are essentially self-contained they reference other chapters to form an integrated whole. Each chapter employs a pedagogical approach to ensure conceptual learning before introducing specific techniques and "tricks of the trade". The book concentrates on a number of current research applications, and will present a detailed approach to each while emphasizing the applicability of techniques to other problems. The field of topics is wide, ranging from compressive (non-uniform) sampling in MRI, through automated retinal vessel analysis to 3-D ultrasound imaging and more. The book is amply illustrated with figures and applicable medical images. The reader will learn the techniques which experts in the field are currently employing and testing to solve particular research problems, and how they may be applied to other problems. **Atlas of Full Breast Ultrasonography** Springer This atlas describes and illustrates a novel approach, referred to as full breast ultrasonography (FBU), that represents a challenge to conventional breast imaging diagnosis. The coverage encompasses examination technique, diagnostic criteria, the imaging features of a wide variety of lesions, and role in follow-up. FBU involves anatomic ultrasound scanning based on the ductal echography technique proposed by Michel Teboul, supplemented by Doppler and real-time sonoelastography. The approach offers a variety of advantages. Compared with MRI it has a lower cost, wider availability, better resolution, and improved correlation with anatomy. Compared with mammography it has the benefits of absence of irradiation and pain, applicability in all cases, and better overall accuracy. Furthermore, the standardized technique of acquisition and interpretation means that it is suitable as a screening test, unlike classic ultrasonography. FBU is applicable in ultrasound BI-RADS assessment and is of value in depicting both benign and malignant conditions. It can be recommended as a first-line method of diagnosis and for the follow-up of treated breasts, regardless of the patient's age, sex, or physical condition. **Balanced Scorecard Diagnostics Maintaining Maximum Performance** John Wiley & Sons The complete guide to analyzing and maximizing a company's balanced scorecard Presenting the next step for balanced scorecard implementation, **Balanced Scorecard Diagnostics** provides a step-by-step methodology for analyzing the effectiveness of a company's balanced scorecard and the tools to reevaluate balanced scorecard measures to drive maximum performance. CEOs, CFOs, CIOs, vice presidents, department managers, and business consultants will find all the essential tools for analyzing a balanced scorecard methodology to determine if it's running at maximum performance and for seamlessly implementing changes into the scorecard. Paul R. Niven (San Marcos, CA) is President of the Senalosa Group, a consulting firm exclusively dedicated to helping businesses get best-in-class performance. He is the author of two successful books, **Balanced Scorecard Step-by-Step (0-471-07872-7)** and **Balanced Scorecard Step-by-Step for Government and Nonprofit Agencies (0-471-42328-9)**, both from Wiley. **New Foundations for Physical Geometry The Theory of Linear Structures** Oxford University Press Topology is the mathematical study of the most basic geometrical structure of a space. Mathematical physics uses topological spaces as the formal means for describing physical space and time. Tim Maudlin proposes a completely new mathematical structure for describing geometrical notions such as continuity, connectedness, boundaries of sets, and so on, in order to provide a better mathematical tool for understanding space-time. He begins with a brief historical review of the development of mathematics as it relates to geometry and an overview of standard topology, and goes on to develop his original Theory of Linear Structures. **Music Emotion Recognition** CRC Press Providing a complete review of existing work in music emotion developed in psychology and engineering, **Music Emotion Recognition** explains how to account for the subjective nature of emotion perception in the development of automatic music emotion recognition (MER) systems. Among the first publications dedicated to automatic MER, it begins with **Introduction to Logistics Systems Planning and Control** John Wiley & Sons **Text Segmentation and Recognition for Enhanced Image Spam Detection An Integrated Approach** Springer Nature This book discusses email spam detection and its challenges such as text classification and categorization. The book proposes an efficient spam detection technique that is a combination of Character Segmentation and Recognition and Classification (CSRC). The author describes how this can detect whether an email (text and image based) is a spam mail or not. The book presents four solutions: first, to extract the text character from the image by segmentation process which includes a combination of Discrete Wavelet Transform (DWT) and skew detection. Second, text characters are via text recognition and visual feature extraction approach which relies on contour analysis with improved Local Binary Pattern (LBP). Third, extracted text features are classified using improvised K-Nearest Neighbor search (KNN) and Support Vector Machine (SVM). Fourth, the performance of the proposed method is validated by the measure of metric named as sensitivity, specificity, precision, recall, F-measure, accuracy, error rate and correct rate. Presents solutions to email spam detection and discusses its challenges such as text classification and categorization; Analyzes the proposed techniques' performance using precision, F-measure, recall and accuracy; Evaluates the limitations of the proposed research thereby recommending future research. **Feature Selection and Enhanced Krill Herd Algorithm for Text Document Clustering** Springer This book puts forward a new method for solving the text document (TD) clustering problem, which is established in two main stages: (i) A new feature selection method based on a particle swarm optimization algorithm with a novel weighting scheme is proposed, as well as a detailed dimension reduction technique, in order to obtain a new subset of more informative features with low-dimensional space. This new subset is subsequently used to improve the performance of the text clustering (TC) algorithm and reduce its computation time. The k-mean clustering algorithm is used to evaluate the effectiveness of the obtained subsets. (ii) Four krill herd algorithms (KHAs), namely, the (a) basic KHA, (b) modified KHA, (c) hybrid KHA, and (d) multi-objective hybrid KHA, are proposed to solve the TC problem; each algorithm represents an incremental improvement on its predecessor. For the evaluation process, seven benchmark text datasets are used with different characterizations and complexities. Text document (TD) clustering is a new trend in text mining in which the TDs are separated into several coherent clusters, where all documents in the same cluster are similar. The findings presented here confirm that the proposed methods and algorithms delivered the best results in comparison with other, similar methods to be found in the literature. **Fault-Tolerant Design** Springer Science & Business Media This textbook serves as an introduction to fault-tolerance, intended for upper-division undergraduate students, graduate-level students and practicing engineers in need of an overview of the field. Readers will develop skills in modeling and evaluating fault-tolerant architectures in terms of reliability, availability and safety. They will gain a thorough understanding of fault tolerant computers, including both the theory of how to design and evaluate them and the practical knowledge of achieving fault-tolerance in electronic, communication and software systems. Coverage includes fault-tolerance techniques through hardware, software, information and time redundancy. The content is designed to be highly accessible, including numerous examples and exercises. Solutions and powerpoint slides are available for instructors. **Cereals Processing Technology** Elsevier Cereals processing is one of the oldest and most important of all food technologies. Written by a distinguished international team of contributors, this collection reviews the range of cereal products and the technologies used to produce them. It is designed for all those involved in cereals processing, whether raw material producers and refiners needing to match the needs of secondary processors manufacturing the final product for the consumer, or secondary processors benchmarking their operations against best practice in their sector and across cereals processing as a whole. The authoritative guide to key technological developments within cereal processing Reviews the range of cereal products and the technologies used to produce them **Process Control and Yarn Quality in Spinning** CRC Press The book outlines the concepts of raw material selection, control of various process parameters in the preparatory processes like blow room, carding, combing preparatory and comber to optimize the process conditions, and analysis and interpretation of various types of test reports to find out the source of fault. **Interval Methods for Systems of Equations** Cambridge University Press Mathematics of Computing -- Numerical Analysis. **Propensity Score Analysis** SAGE Fully updated to reflect the most recent changes in the field, the Second Edition of Propensity Score Analysis provides an accessible, systematic review of the origins, history, and statistical foundations of propensity score analysis, illustrating how it can be used for solving evaluation and causal-inference problems. With a strong focus on practical applications, the authors explore various strategies for employing PSA, discuss the use of PSA with alternative types of data, and delineate the limitations of PSA under a variety of constraints. Unlike existing textbooks on program evaluation and causal inference, this book delves into statistical concepts, formulas, and models within the context of a robust and engaging focus on application. **Global Optimization Using Interval Analysis Revised And Expanded** CRC Press Employing a closed set-theoretic foundation for interval computations, **Global Optimization Using Interval Analysis** simplifies algorithm construction and increases generality of interval arithmetic. This Second Edition contains an up-to-date discussion of interval methods for solving systems of nonlinear equations and global optimization problems. It expands and improves various aspects of its forerunner and features significant new discussions, such as those on the use of consistency methods to enhance algorithm performance. Provided algorithms are guaranteed to find and bound all solutions to these problems despite bounded errors in data, in approximations, and from use of rounded arithmetic. **Search in Artificial Intelligence** Springer Science & Business Media Search is an important component of problem solving in artificial intelligence (AI) and, more generally, in computer science, engineering and operations research. Combinatorial optimization, decision analysis, game playing, learning, planning, pattern recognition, robotics and theorem proving are some of the areas in which search algorithms play a key role. Less than a decade ago the conventional wisdom in artificial intelligence was that the best search algorithms had already been invented and the likelihood of finding new results in this area was very small. Since then many new insights and results have been obtained. For example, new algorithms for state space, AND/OR graph, and game tree search were discovered. Articles on new theoretical developments and experimental results on backtracking, heuristic search and constraint propagation were published. The relationships among various search and combinatorial algorithms in AI, Operations Research, and other fields were clarified. This volume brings together some of this recent work in a manner designed to be accessible to students and professionals interested in these new insights and developments.