A Fuzzy Fault Diagnosis Method For Large Radar Based On

As recognized, adventure as skillfully as experience very nearly lesson, amusement, as well as contract can be gotten by just checking out a book **a fuzzy fault diagnosis method for large radar based on** as a consequence it is not directly done, you could agree to even more roughly speaking this life, with reference to the world.

We have enough money you this proper as well as simple pretentiousness to acquire those all. We meet the expense of a fuzzy fault diagnosis method for large radar based on and numerous books collections from fictions to scientific research in any way. among them is this a fuzzy fault diagnosis method for large radar based on that can be your partner.

Computer Supported Cooperative Work and Social Computing - Yuqing Sun 2021-05-06
This book constitutes the refereed post-conference proceedings of the 15th CCF Conference on Computer Supported Cooperative Work and Social Computing, ChineseCSCW 2020, held in Shenzhen, China, in November 2020. The 40 revised full papers and 15 revised short papers were carefully reviewed and selected from 137 submissions. The papers of this volume are organized in topical sections on: crowdsourcing, crowd intelligence, and crowd cooperative computing; domain-specific collaborative applications; collaborative mechanisms, models, approaches, algorithms, and systems; social media and online communities; and short papers.

Fault Diagnosis of Nonlinear Systems Using a Hybrid Approach - Ehsan Sobhani-Tehrani 2009-06-22
Theincreasingcomplexityofspacevehiclessuchassatellites,andthecostreduction measures that have affected satellite operators are increasingly driving the need for more autonomy in satellite diagnostics and control systems. Current methods for detecting and correcting anomalies onboard the spacecraft as well as on the ground are primarily manual and labor intensive, and therefore, tend to be slow. Operators inspect telemetry data to determine the current satellite health. They use various statisticaltechniques andmodels,buttheanalysisandevaluation ofthelargevolume of data still require extensive human intervention and expertise that is prone to error. Furthermore, for spacecraft and most of these satellites, there can be potentially unduly long delays in round-trip communications between the ground station and the satellite. In this context, it is desirable to have onboard fault-diagnosis system that is capable of detecting, isolating, identifying or classifying faults in the system withouttheinvolvementandinterventionofoperators.Towardthisend,theprinciple goal here is to improve the ef?ciency, accuracy, and reliability of the trend analysis and diagnostics techniques through utilization of intelligent-based and hybrid-based methodologies.

Recent Research in Control Engineering and Decision Making - Olga Dolinina 2019-01-28
This book constitutes the full papers and short monographs developed on the base of the refereed proceedings of the International Conference on Information Technologies: Information and Communication Technologies for Research and Industry (ICIT-2019), held in Saratov, Russia in February 2019. The book brings accepted papers which present new approaches and methods of solving problems in the sphere of control engineering and decision making for the various fields of studies: industry and research, ontology-based data simulation, smart city technologies, theory and use of digital signal processing, cognitive systems, robotics, cybernetics, automation control theory, image recognition technologies, and computer vision. Particular emphasis is laid on modern trends, new approaches, algorithms and methods in selected fields of interest. The presented papers were accepted after careful reviews made by at least three independent reviewers in a double-blind way. The acceptance level was about 60%. The chapters are organized thematically in several areas within the following tracks: • Models, Methods & Approaches in Decision Making Systems • Mathematical Modelling for Industry & Research • Smart City Technologies The conference is focused on development and globalization of information and communication technologies (ICT), methods of control engineering and decision making along with innovations and networking, ICT for sustainable development and technological change, and global challenges. Moreover, the ICIT-2019 served as a discussion area for the actual above-mentioned topics. The editors believe that the readers will find the proceedings interesting and useful for their own research work.
Failure Characteristics Analysis and Fault Diagnosis for Liquid

Rocket Engines - Wei Zhang 2016-05-25
This book concentrates on the subject of health monitoring technology of Liquid Rocket Engine (LRE), including its failure analysis, fault diagnosis and fault prediction. Since no similar issue has been published, the failure pattern and mechanism analysis of the LRE from the system stage are of particular interest to the readers. Furthermore, application cases used to validate the efficacy of the fault diagnosis and prediction methods of the LRE are different from the others. The readers can learn the system stage modeling, analyzing and testing methods of the LRE system as well as corresponding fault diagnosis and prediction methods. This book will benefit researchers and students who are pursuing aerospace technology, fault detection, diagnostics and corresponding applications.

Model-based Fault Diagnosis in Dynamic Systems Using Identification Techniques - Silvio Simani 2013-11-11
Safety in industrial process and production plants is a concern of rising importance but because the control devices which are now exploited to improve the performance of industrial processes include both sophisticated digital system design techniques and complex hardware, there is a higher probability of failure. Control systems must include automatic supervision of closed-loop operation to detect and isolate malfunctions quickly. A promising method for solving this problem is "analytical redundancy", in which residual signals are obtained and an accurate model of the system mimics real process behaviour. If a fault occurs, the residual signal is used to diagnose and isolate the malfunction. This book focuses on model identification oriented to the analytical approach of fault diagnosis and identification covering: choice of model structure; parameter identification; residual generation; and fault diagnosis and isolation. Sample case studies are used to demonstrate the application of these techniques.
Advances in Intelligent Systems and Interactive Applications - Fatos Xhafa 2017-10-30
This book presents research papers from diverse areas on novel Intelligent Systems and Interactive Systems and Applications. It gathers selected research papers presented at the 2nd International Conference on Intelligent and Interactive Systems and Applications (IISA2017), which was held on June 17–18, 2017 in Beijing, China. Interactive Intelligent Systems (IIS) are systems that interact with human beings, media or virtual agents in intelligent computing environments. The emergence of Big Data and the Internet of Things have now opened new opportunities in both academic and industrial research for the successful design and development of intelligent interactive systems. This book explores how novel interactive systems can be used to overcome various challenges and limitations previously encountered by human beings by combining machine learning algorithms and the analysis of recent trends. The book presents 125 contributions, which have been categorized into seven sections, namely: i) Autonomous Systems; ii) Pattern Recognition and Vision Systems; iii) E-Enabled Systems; iv) Mobile Computing and Intelligent Networking; v) Internet and Cloud Computing; vi) Intelligent Systems, and vii) Various Applications. It not only offers readers extensive theoretical information on Intelligent and Interactive Systems, but also introduces them to various applications in different domains.
Applied Mechanics Reviews - 1996

Issues of Fault Diagnosis for Dynamic Systems - Ron J. Patton 2013-06-29
Since the time our first book Fault Diagnosis in Dynamic Systems: Theory and Applications was published in 1989 by Prentice Hall, there has been a surge in interest in research and applications into reliable methods for diag nosing faults in complex systems. The first book sold more than 1,200 copies and has become the main text in fault diagnosis

for dynamic systems. This book will follow on this excellent record by focusing on some of the advances in this subject, by introducing new concepts in research and new application topics. The work cannot provide an exhaustive discussion of all the recent research in fault diagnosis for dynamic systems, but nevertheless serves to sample some of the major issues. It has been valuable once again to have the co-operation of experts throughout the world working in industry, gov emment establishments and academic institutions in writing the individual chapters. Sometimes dynamical systems have associated numerical models available in state space or in frequency domain format. When model infor mation is available, the quantitative model-based approach to fault diagnosis can be taken, using the mathematical model to generate analytically redun dant alternatives to the measured signals. When this approach is used, it becomes important to try to understand the limitations of the mathematical models i. e. , the extent to which model parameter variations occur and the effect of changing the systems point of operation.

Fault-Diagnosis Systems - Rolf Isermann 2005-10-13
With increasing demands for efficiency and product quality plus progress in the integration of automatic control systems in high-cost mechatronic and safety-critical processes, the field of supervision (or monitoring), fault detection and fault diagnosis plays an important role. The book gives an introduction into advanced methods of fault detection and diagnosis (FDD). After definitions of important terms, it considers the reliability, availability, safety and systems integrity of technical processes. Then fault-detection methods for single signals without models such as limit and trend checking and with harmonic and stochastic models, such as Fourier analysis, correlation and wavelets are treated. This is followed by fault detection with process models using the relationships between signals such as parameter estimation, parity equations, observers and principal component analysis. The treated fault-diagnosis methods include classification methods from Bayes classification to neural networks with decision trees and inference methods from approximate reasoning with fuzzy logic to hybrid fuzzy-neuro systems. Several practical examples for fault detection and diagnosis of DC motor drives, a centrifugal pump, automotive suspension and tire demonstrate applications.

Big Data Analytics for Cyber-Physical System in Smart City - Mohammed Atiquzzaman 2020-12-17
This book gathers a selection of peer-reviewed papers presented at the second Big Data Analytics for Cyber-Physical System in Smart City (BDCPS 2020) conference, held in Shanghai, China, on 28–29 December 2020. The contributions, prepared by an international team of scientists and engineers, cover the latest advances made in the field of machine learning, and big data analytics methods and approaches for the data-driven co-design of communication, computing, and control for smart cities. Given its scope, it offers a valuable resource for all researchers and professionals interested in big data, smart cities, and cyber-physical systems.

Big Data and Security - Yuan Tian 2022-03-09
This book constitutes the refereed proceedings of the Third International Conference on Big Data and Security, ICBDS 2021, held in Shenzhen, China, in November 2021 The 46 revised full papers and 13 short papers were carefully reviewed and selected out of 221 submissions. The papers included in this volume are organized according to the topical sections on cybersecurity and privacy; big data; blockchain and internet of things, and artificial intelligence/ machine learning security.

Applications of Artificial Intelligence in Process Systems Engineering - Jingzheng Ren 2021-06-05
Applications of Artificial Intelligence in Process Systems Engineering offers a broad perspective on the issues related to artificial intelligence technologies and their applications in chemical and process engineering. The book comprehensively introduces the methodology and applications of AI technologies in process systems engineering, making it an indispensable reference for researchers and students. As chemical processes and systems are usually non-linear and complex, thus making it challenging to apply AI methods and technologies, this book is an ideal resource on emerging areas such as cloud computing, big data, the industrial Internet of Things and deep learning. With process systems engineering's potential to become one of the driving forces for the development of AI technologies, this book covers all the right bases. Explains the concept of machine learning, deep learning and state-of-the-art intelligent algorithms Discusses AI-based applications in process modeling and simulation, process integration and optimization, process control, and fault detection and diagnosis Gives direction to future development trends of AI technologies in chemical and process engineering

Advances in Swarm Intelligence - Ying Tan 2010-06
The LNCS series reports state-of-the-art results in computer science research, development, and education, at a high level and in both printed and electronic form. Enjoying tight cooperation with the R&D community, with numerous individuals, as well as with prestigious organizations and societies, LNCS has grown into the most comprehensive computer science research forum available. The scope of LNCS, including its subseries LNAI and LNBI, spans the whole range of computer science and information technology including interdisciplinary topics in a variety of application fields. In parallel to the printed book, each new volume is published electronically in LNCS Online.

Progress in Artificial Intelligence and Pattern Recognition - Yanio Hernández Heredia 2021-11-03
This book constitutes the refereed proceedings of the 7th International Workshop on Artificial Intelligence and Pattern Recognition, IWAIPR 2021, held in Havana, Cuba, in October 2021. The 42 full papers presented were carefully reviewed and selected from 73 submissions. The papers promote and disseminate ongoing research on mathematical methods and computing techniques for artificial intelligence and pattern recognition, in particular in bioinformatics, cognitive and humanoid vision, computer vision, image analysis and intelligent data analysis.

Fault Diagnosis and Sustainable Control of Wind Turbines - Silvio Simani 2018-01-02
Fault Diagnosis and Sustainable Control of Wind Turbines: Robust Data-Driven and Model-Based Strategies discusses the development of reliable and robust fault diagnosis and fault-tolerant ('sustainable') control schemes by means of data-driven and model-based approaches. These strategies are able to cope with unknown nonlinear systems and noisy measurements. The book also discusses simpler solutions relying on data-driven and model-based methodologies, which are key when on-line implementations are considered for the proposed schemes. The book targets both professional engineers working in industry and researchers in academic and scientific institutions. In order to improve the safety, reliability and efficiency of wind turbine systems, thus avoiding expensive unplanned maintenance, the accommodation of faults in their early occurrence is fundamental. To highlight the potential of the proposed methods in real applications, hardware–in–the–loop test facilities (representing realistic wind turbine systems) are considered to analyze the digital implementation of the designed solutions. The achieved results show that the developed schemes are able to maintain the desired performances, thus validating their reliability and viability in real-time implementations. Different groups of readers—ranging from industrial engineers wishing to gain insight into the applications' potential of new fault diagnosis and sustainable control methods, to the academic control community looking for new problems to tackle—will find much to learn from this work. Provides wind turbine models with varying complexity, as well as the solutions proposed and developed by the authors Addresses in detail the design, development and realistic implementation of fault diagnosis and fault tolerant control strategies for wind turbine systems Addresses the development of sustainable control solutions that, in general, do not require the introduction of further or redundant measurements Proposes active fault tolerant ('sustainable') solutions that are able to maintain the wind turbine working conditions with gracefully degraded performance before required maintenance can occur Presents full coverage of the diagnosis and fault tolerant control problem, starting from the modeling and identification and finishing with diagnosis and fault tolerant control approaches Provides MATLAB and Simulink codes for the solutions proposed

A fault detection method for FADS system based on interval-valued neutrosophic sets, belief rule base, and D-S evidence reasoning - Qianlei Jia
Fault detection, with the characteristics of strong uncertainty and randomness, has always been one of the research hotspots in the field of aerospace. Considering that devices will inevitably encounter various unknown interference in the process of use, which greatly limits the performance of many traditional fault detection methods. Therefore, the main aim of this paper is to address this problem from the perspective of uncertainty and randomness of measurement signal. In information engineering, interval-valued neutrosophic sets (IVNSs), belief rule base (BRB), and Dempster-Shafer (D-S) evidence reasoning are always characterized by the strong ability in revealing uncertainty, but each has its drawbacks. As a result, the three theories are firstly combined in this paper to form a powerful fault detection algorithm. Besides, a series of

innovations are proposed to improve the method, including a new score function based on p-norm for IVNSs and a new approach of calculating the similarity between IVNSs, which are both proved by authoritative prerequisites. To illustrate the effectiveness of the proposed method, flush air data sensing (FADS), a technologically advanced airborne sensor, is adopted in this paper. The aerodynamic model of FADS is analyzed in detail using knowledge of aerodynamics under subsonic and supersonic conditions, meanwhile, the high-precision model is established based on the aerodynamic database obtained from CFD software.

Nuclear Power Plants: Innovative Technologies for Instrumentation and Control Systems - Yang Xu 2022
This book is a compilation of selected papers from the Sixth International Symposium on Software Reliability, Industrial Safety, Cyber Security and Physical Protection of Nuclear Power Plant, held in October 2021 in Zhuji, Zhejiang, China. The purpose of this symposium is to discuss Inspection, test, certification and research for the software and hardware of Instrument and Control (I & C) systems in nuclear power plants (NPP), such as sensors, actuators and control system. It aims to provide a platform of technical exchange and experience sharing for those broad masses of experts and scholars and nuclear power practitioners, and for the combination of production, teaching and research in universities and enterprises to promote the safe development of nuclear power plant. Readers will find a wealth of valuable insights into achieving safer and more efficient instrumentation and control systems.

Intelligent Systems Design and Applications - Ajith Abraham 2022-03-26
This book highlights recent research on intelligent systems and nature-inspired computing. It presents 132 selected papers from the 21st International Conference on Intelligent Systems Design and Applications (ISDA 2021), which was held online. The ISDA is a premier conference in the field of computational intelligence, and the latest installment brought together researchers, engineers and practitioners whose work involves intelligent systems and their applications in industry. Including contributions by authors from 34 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

Computational Intelligence in Fault Diagnosis - Vasile Palade 2006-12-22
This book presents the most recent concerns and research results in industrial fault diagnosis using intelligent techniques. It focuses on computational intelligence applications to fault diagnosis with real-world applications used in different chapters to validate the different diagnosis methods. The book includes one chapter dealing with a novel coherent fault diagnosis distributed methodology for complex systems.

Handbook On Computational Intelligence (In 2 Volumes) - Angelov Plamen Parvanov 2016-03-18
With the Internet, the proliferation of Big Data, and autonomous systems, mankind has entered into an era of 'digital obesity'. In this century, computational intelligence, such as thinking machines, have been brought forth to process complex human problems in a wide scope of areas — from social sciences, economics and biology, medicine and social networks, to cyber security.The Handbook of Computational Intelligence (in two volumes) prompts readers to look at these problems from a non-traditional angle. It takes a step by step approach, supported by case studies, to explore the issues that have arisen in the process. The Handbook covers many classic paradigms, as well as recent achievements and future promising developments to solve some of these very complex problems. Volume one explores the subjects of fuzzy logic and systems, artificial neural networks, and learning systems. Volume two delves into evolutionary computation, hybrid systems, as well as the applications of computational intelligence in decision making, the process industry, robotics, and autonomous systems.This work is a 'one-stop-shop' for beginners, as well as an inspirational source for more advanced researchers. It is a useful resource for lecturers and learners alike.

Knowledge-Based Intelligent System Advancements: Systemic and Cybernetic Approaches - Jozefczyk, Jerzy 2010-08-31
Knowledge-Based Intelligent System Advancements: Systemic and Cybernetic Approaches presents selected new AI–based ideas and methods for analysis and decision making in intelligent information systems derived using systemic and cybernetic approaches. This book is useful for researchers, practitioners and students interested intelligent information retrieval and processing, machine learning and adaptation, knowledge discovery, applications of fuzzy based methods and neural networks.

Diagnosis and Fault-tolerant Control 1 - Vicenc Puig 2021-12-29
This book presents recent advances in fault diagnosis strategies for complex dynamic systems. Its impetus derives from the need for an overview of the challenges of the fault diagnosis technique, especially for those demanding systems that require reliability, availability, maintainability and safety to ensure efficient operations. Moreover, the need for a high degree of tolerance with respect to possible faults represents a further key point, primarily for complex systems, as modeling and control are inherently challenging, and maintenance is both expensive and safety-critical. Diagnosis and Fault-tolerant Control 1 also presents and compares different diagnosis schemes using established case studies that are widely used in related literature. The main features of this book regard the analysis, design and implementation of proper solutions for the problems of fault diagnosis in safety critical systems. The design of the considered solutions involves robust data-driven, model-based approaches.

Foundations and Practical Applications of Cognitive Systems and Information Processing - Fuchun Sun 2013-09-21
"Foundations and Practical Applications of Cognitive Systems and Information Processing" presents selected papers from the First International Conference on Cognitive Systems and Information Processing, held in Beijing, China on December 15-17, 2012 (CSIP2012). The aim of this conference is to bring together experts from different fields of expertise to discuss the state-of-the-art in artificial cognitive systems and advanced information processing, and to present new findings and perspectives on future development. This book introduces multidisciplinary perspectives on the subject areas of Cognitive Systems and Information Processing, including cognitive sciences and technology, autonomous vehicles, cognitive psychology, cognitive metrics, information fusion, image/video understanding, brain-computer interfaces, visual cognitive processing, neural computation, bioinformatics, etc. The book will be beneficial for both researchers and practitioners in the fields of Cognitive Science, Computer Science and Cognitive Engineering. Fuchun Sun and Huaping Liu are both professors at the Department of Computer Science & Technology, Tsinghua University, China. Dr. Dewen Hu is a professor at the College of Mechatronics and Automation, National University of Defense Technology, Changsha, China.

Multimedia Technology and Enhanced Learning - Yu-Dong Zhang 2020-07-18
This two-volume book constitutes the refereed proceedings of the Second International Conference on Multimedia Technology and Enhanced Learning, ICMTEL 2020, held in Leicester, United Kingdom, in April 2020. Due to the COVID-19 pandemic all papers were presented in YouTubeLive. The 83 revised full papers have been selected from 158 submissions. They describe new learning technologies which range from smart school, smart class and smart learning at home and which have been developed from new technologies such as machine learning, multimedia and Internet of Things.

A Hybrid Approach for Power Plant Fault Diagnostics - Tamiru Alemu Lemma 2017-12-30
This book provides a hybrid approach to fault detection and diagnostics. It presents a detailed analysis related to practical applications of the fault detection and diagnostics framework, and highlights recent findings on power plant nonlinear model identification and fault diagnostics. The effectiveness of the methods presented is tested using data acquired from actual cogeneration and cooling plants (CCPs). The models presented were developed by applying Neuro-Fuzzy (NF) methods. The book offers a valuable resource for researchers and practicing engineers alike.

Advanced Intelligent Technologies for Industry - Kazumi Nakamatsu
The book includes new research results of scholars from the Second International Conference on Advanced Intelligent Technologies (ICAIT 2021) subtitled Intelligent Technology and Industry organized by IRNet International Academic Communication Center, held during October 15-17, 2021. The book covers research work from active researchers who are working on collaboration of industry and various intelligent technologies such as intelligent technologies applicable/applied to manufacturing and distribution of industrial products, factory automation, business, etc. The book focuses on theory, design, development, testing, and evaluation of all intelligent technologies applicable/applied to various parts of industry and its infrastructure. The topics included are all computational intelligence techniques applicable/applied to industry, intelligent techniques in data science

applicable/applied to business and management, intelligent network systems applicable/applied to industrial production, intelligent technologies applicable to smart agriculture, and intelligent information systems for agriculture.

Data-driven Detection and Diagnosis of Faults in Traction Systems of High-speed Trains - Hongtian Chen 2020-04-25
This book addresses the needs of researchers and practitioners in the field of high-speed trains, especially those whose work involves safety and reliability issues in traction systems. It will appeal to researchers and graduate students at institutions of higher learning, research labs, and in the industrial R&D sector, catering to a readership from a broad range of disciplines including intelligent transportation, electrical engineering, mechanical engineering, chemical engineering, the biological sciences and engineering, economics, ecology, and the mathematical sciences.

Intelligent Marine Robotics Modelling, Simulation and Applications - Cheng Siong Chin 2020-04-24
The biennial Congress of the Italian Society of Oral Pathology and Medicine (SIPMO) is an International meeting dedicated to the growing diagnostic challenges in the oral pathology and medicine field. The III International and XV National edition will be a chance to discuss clinical conditions which are unusual, rare, or difficult to define. Many consolidated national and international research groups will be involved in the debate and discussion through special guest lecturers, academic dissertations, single clinical case presentations, posters, and degree thesis discussions. The SIPMO Congress took place from the 17th to the 19th of October 2019 in Bari (Italy), and the enclosed copy of Proceedings is a non-exhaustive collection of abstracts from the SIPMO 2019 contributions.

Condition Assessment of High Voltage Insulation in Power System Equipment - R.E. James 2008
This book covers major components of a high voltage system and the different insulating materials applied in equipment, identifying measurable materials suitable for condition assessment, and also analyses insulation fault scenarios that may occur in power equipment.

Advances in Neural Networks – ISNN 2019 - Huchuan Lu 2019-06-26
This two-volume set LNCS 11554 and 11555 constitutes the refereed proceedings of the 16th International Symposium on Neural Networks, ISNN 2019, held in Moscow, Russia, in July 2019. The 111 papers presented in the two volumes were carefully reviewed and selected from numerous submissions. The papers were organized in topical sections named: Learning System, Graph Model, and Adversarial Learning; Time Series Analysis, Dynamic Prediction, and Uncertain Estimation; Model Optimization, Bayesian Learning, and Clustering; Game Theory, Stability Analysis, and Control Method; Signal Processing, Industrial Application, and Data Generation; Image Recognition, Scene Understanding, and Video Analysis; Bio-signal, Biomedical Engineering, and Hardware.

Safety Theory and Control Technology of High-Speed Train Operation - Junfeng Wang 2017-10-24
Safety Theory and Technology of High-Speed Train Operation puts forward solutions for train dispatching and signal control. Frequent railway incidents have threatened the safety of rail transport. In 2013, more than 12 trains collided. In the same year, a Spanish train derailed due to speed, and two of China's high-speed trains collided. In 2016, Germany and Italy both experienced serious train collisions. Global railway security is essential. Many accidents are caused by train dispatching errors and signal system failure. Chinese high-speed railway has developed very quickly and at a very large scale. However, many issues reagrding safety has not been addressed. This book considers the issue from the perspective of a system. A train operation control system structure is put forward in order to ensure safety. Five key technologies (namely system-level fail-safe, parallel monitoring, completeness of train control data, data sharing and fusion and prevention of common errors in monitoring), are proposed. In order to prevent collision, over-speed, derailment, and rear-end collision accidents, the concept and corresponding parallel monitoring technology of five core control items (train route, speed, tracking interval, temporary speed limit, train running state) is proposed. Puts forward solutions for train dispatching and signal control Views high-speed train safety and technology from a systems-theory perspective Describes five key technologies to ensure safety Proposes five parallel monitoring technologies to prevent collision, over-speed, derailment and rear-end collision incidents Considers the very quick and large-scale development of Chinese high-speed rail

Mechanical Engineering and Control Systems - Xiaolong Li 2016-01-15
This book consists of 113 selected papers presented at the 2015

International Conference on Mechanical Engineering and Control Systems (MECS2015), which was held in Wuhan, China during January 23–25, 2015. All accepted papers have been subjected to strict peer review by two to four expert referees, and selected based on originality, ability to test ideas and contribution to knowledge. MECS2015 focuses on eight main areas, namely, Mechanical Engineering, Automation, Computer Networks, Signal Processing, Pattern Recognition and Artificial Intelligence, Electrical Engineering, Material Engineering, and System Design. The conference provided an opportunity for researchers to exchange ideas and application experiences, and to establish business or research relations, finding global partners for future collaborations. The conference program was extremely rich, profound and featured high-impact presentations of selected papers and additional late-breaking contributions. Contents:Mechanical Engineering and Manufacturing TechnologiesAutomation and Control EngineeringCommunication Networking and Computing TechnologiesSignal Processing and Image ProcessingPattern Recognition and Artificial IntelligenceMicro Electromechanical Systems Technology and ApplicationMaterial Science and Material EngineeringSystem Design and SimulationSustainable City and Sustainable Development Readership: Researchers and graduate students interested in mechanical engineering and control systems. Key Features:It is one of the leading international conferences for presenting novel and fundamental advances in the fields of Mechanical Engineering and Control SystemsThe proceedings put together the most up-to-date, comprehensive and worldwide state-of-the-art knowledge in Mechanical Engineering and Control SystemsMany of the articles are the output of research funded by Chinese research agencies, representing the state-of-the-art technologies in Chinese engineering R&DKeywords:Mechanical Engineering;Automation;Computer Networks;Signal Processing;Pattern Recognitions and Artificial Intelligence;Electrical Engineering;Material Engineering;System Design

Advanced Solutions in Diagnostics and Fault Tolerant Control - Jan M. Kościelny 2017-07-28
This book highlights the latest achievements concerning the theory, methods and practice of fault diagnostics, fault tolerant systems and cyber safety. When considering the diagnostics of industrial processes and systems, increasingly important safety issues cannot be ignored. In this context, diagnostics plays a crucial role as a primary measure of the improvement of the overall system safety integrity level. Obtaining the desired diagnostic coverage or providing an appropriate level of inviolability of the integrity of a system is now practically inconceivable without the use of fault detection and isolation methods. Given the breadth and depth of its coverage, the book will be of interest to researchers faced with the challenge of designing technical and medical diagnosis systems, as well as junior researchers and students in the fields of automatic control, robotics, computer science and artificial intelligence.

Condition Monitoring with Vibration Signals - Hosameldin Ahmed 2020-01-07
Provides an extensive, up-to-date treatment of techniques used for machine condition monitoring Clear and concise throughout, this accessible book is the first to be wholly devoted to the field of condition monitoring for rotating machines using vibration signals. It covers various feature extraction, feature selection, and classification methods as well as their applications to machine vibration datasets. It also presents new methods including machine learning and compressive sampling, which help to improve safety, reliability, and performance. Condition Monitoring with Vibration Signals: Compressive Sampling and Learning Algorithms for Rotating Machines starts by introducing readers to Vibration Analysis Techniques and Machine Condition Monitoring (MCM). It then offers readers sections covering: Rotating Machine Condition Monitoring using Learning Algorithms; Classification Algorithms; and New Fault Diagnosis Frameworks designed for MCM. Readers will learn signal processing in the time-frequency domain, methods for linear subspace learning, and the basic principles of the learning method Artificial Neural Network (ANN). They will also discover recent trends of deep learning in the field of machine condition monitoring, new feature learning frameworks based on compressive sampling, subspace learning techniques for machine condition monitoring, and much more. Covers the fundamental as well as the state-of-the-art approaches to machine condition monitoringguiding readers from the basics of rotating machines to the generation of knowledge using vibration signals Provides new methods, including machine learning and compressive sampling, which offer significant improvements in accuracy with reduced computational costs Features

learning algorithms that can be used for fault diagnosis and prognosis Includes previously and recently developed dimensionality reduction techniques and classification algorithms Condition Monitoring with Vibration Signals: Compressive Sampling and Learning Algorithms for Rotating Machines is an excellent book for research students, postgraduate students, industrial practitioners, and researchers.

Automotive, Mechanical and Electrical Engineering - Lin Liu 2017-06-26 The 2016 International Conference on Automotive Engineering, Mechanical and Electrical Engineering (AEMEE 2016) was held December 9-11, 2016 in Hong Kong, China. AEMEE 2016 was a platform for presenting excellent results and new challenges facing the fields of automotive, mechanical and electrical engineering. Automotive, Mechanical and Electrical Engineering brings together a wide range of contributions from industry and governmental experts and academics, experienced in engineering, design and research. Papers have been categorized under the following headings: Automotive Engineering and Rail Transit Engineering. Mechanical, Manufacturing, Process Engineering. Network, Communications and Applied Information Technologies. Technologies in Energy and Power, Cell, Engines, Generators, Electric Vehicles. System Test and Diagnosis, Monitoring and Identification, Video and Image Processing. Applied and Computational Mathematics, Methods, Algorithms and Optimization. Technologies in Electrical and Electronic, Control and Automation. Industrial Production, Manufacturing, Management and Logistics.

International Congress and Workshop on Industrial AI 2021 - Ramin Karim 2022-02-07 This proceedings of the International Congress and Workshop on Industrial AI 2021 encompasses and integrates the themes and topics of three conferences, eMaintenance, Condition Monitoring and Diagnostic Engineering management (COMADEM), and Advances in Reliability, Maintainability and Supportability (ARMS) into a single resource. The 21st century is witnessing the emerging extensive applications of Artificial Intelligence (AI) and Information Technologies (IT) in industry. Industrial Artificial Intelligence (IAI) integrates IT with Operational Technologies (OT) and Engineering Technologies (ET) to achieve operational excellence through enhanced analytics in operation and maintenance of industrial assets. This volume provides insight into opportunities and challenges caused by the implementation of AI in industries apart from future developments with special reference to operation and maintenance of industrial assets. Industry practitioners in the maintenance field as well as academics seeking applied research in maintenance will find this text useful.

Computational Intelligence in Fault Diagnosis - Vasile Palade 2010-10-22 This book presents the most recent concerns and research results in industrial fault diagnosis using intelligent techniques. It focuses on computational intelligence applications to fault diagnosis with real-world applications used in different chapters to validate the different diagnosis methods. The book includes one chapter dealing with a novel coherent fault diagnosis distributed methodology for complex systems.

PV System Design and Performance - Wilfried van Sark 2019-11-22 Photovoltaic solar energy technology (PV) has been developing rapidly in the past decades, leading to a multi-billion-dollar global market. It is of paramount importance that PV systems function properly, which requires the generation of expected energy both for small-scale systems that consist of a few solar modules and for very large-scale systems containing millions of modules. This book increases the understanding of the issues relevant to PV system design and correlated performance; moreover, it contains research from scholars across the globe in the fields of data analysis and data mapping for the optimal performance of PV systems, faults analysis, various causes for energy loss, and design and integration issues. The chapters in this book demonstrate the importance of designing and properly monitoring photovoltaic systems in the field in order to ensure continued good performance.

Proceedings of the 1st International Workshop on High-Speed and Intercity Railways - Yi-Qing Ni 2012-02-13 This book contains the papers included in the proceedings of the 1st International Workshop on High-speed and Intercity Railways (IWHIR 2011) held in Shenzhen and Hong Kong, China from July 19 to July 22, 2011, which is organized by The Hong Kong Polytechnic University, in collaboration with Southwest Jiaotong University, Beijing Jiaotong University, Dalian Jiaotong University, China Engineering Consultants, Inc., Zhejiang University, and Tsinghua University. Continuing the great initiatives and momentums of the rapid development in high-speed and intercity railways worldwide in recent years, IWHIR 2011 aims at providing a platform for academic scholars and practicing engineers to share knowledge and experience, to promote collaboration, and to strengthen R&D activities related to railway engineering. Engineers, scientists, professors, and students from universities, research institutes, and related industrial companies have been cordially invited to participate in the workshop. These papers have covered a wide range of issues concerning high-speed and intercity railways in the theoretical, numerical, and experimental work pertaining to high-speed and intercity railways. Showcasing diversity and quality, these papers report the state-of-the-art and point to future directions of research and development in this exciting area.

Fuzzy Information and Engineering Volume 2 - Bingyuan Cao 2009-10-14 This book is the proceedings of the Third International Conference on Fuzzy Information and Engineering (ICFIE 2009) held in the famous mountain city Chongqing in Southwestern China, from September 26-29, 2009. Only high-quality papers are included. The ICFIE 2009, built on the success of previous conferences, the ICFIE 2007 (Guangzhou, China), is a major symposium for scientists, engineers and practitioners in the world to present their updated results, ideas, developments and applications in all areas of fuzzy information and engineering. It aims to strengthen relations between industry research laboratories and universities, and to create a primary symposium for world scientists in fuzzy fields as follows: Fuzzy Information; Fuzzy Sets and Systems; Soft Computing; Fuzzy Engineering; Fuzzy Operation Research and Management; Artificial Intelligence; Fuzzy Mathematics and Systems in Applications, etc.