Machinery Fault Diagnosis And Advanced Signal Processing

This volume comprises papers presented at the 2nd International Conference on Advanced Nondestructive Evaluation (ANDE 2007) held in Busan, Korea, on October 17-19, 2007. Many of the excellent papers included in this book show the current state of nondestructive technologies, which are experiencing rapid progress with the integration of emerging technologies in various fields. As such, this volume provides an avenue for both specialists and scholars to share their ideas and the results of their findings in the field of nondestructive evaluation.
This Encyclopedia of Control Systems, Robotics, and Automation is a component of the global Encyclopedia of Life Support Systems EOLSS, which is an integrated compendium of twenty one Encyclopedias. This 22-volume set contains 240 chapters, each of size 5000-30000 words, with perspectives, applications and extensive illustrations. It is the only publication of its kind carrying state-of-the-art knowledge in the fields of Control Systems, Robotics, and Automation and is aimed, by virtue of the several applications, at the following five major target audiences: University and College Students, Educators, Professional Practitioners, Research Personnel and Policy Analysts, Managers, and Decision Makers and NGOs.
"This book provides advanced techniques for precision compensation and fault diagnosis of precision motion systems and rotating machinery. Techniques and applications through experiments and case studies for intelligent precision compensation and fault diagnosis are offered along with the introduction of machine learning and deep learning methods. Machine Learning-Based Fault Diagnosis for Industrial Engineering Systems discusses how to formulate and solve precision compensation and fault diagnosis problems. The book includes experimental results on hardware equipment used as practical examples throughout the book. Machine learning and deep learning methods used in intelligent precision compensation and intelligent fault diagnosis are introduced. Applications to deal with relevant problems concerning CNC machining and rotating machinery in industrial engineering systems are provided in detail along with applications used in precision motion systems. Methods, applications, and concepts offered in this book can help all professional engineers and students across many areas of engineering and operations management that are involved in any part of Industry 4.0 transformation"--
The 2011 International Conference on Chemical, Mechanical and Materials Engineering (CMME 2011) was held in Guangzhou, China, on the 8-10th July, 2011, and served as a platform for expertise exchange; drawing the attention of researchers from disciplines such as chemical, mechanical and materials engineering, etc. Volume is indexed by Thomson Reuters CPCI-S (WoS). The proceedings, with 57 peer-reviewed papers, offer an up-to-date review of the subject matter.
Fault-Diagnosis Applications
Advanced Manufacturing and Automation X
Second International Conference, NCAA 2021, Guangzhou, China, August 27-30, 2021, Proceedings
Proceedings of a Conference Held at NASA George C. Marshall Space Flight Center, Marshall Space Flight Center, May 17-19, 1994
Advanced Nondestructive Evaluation II
Advanced Intelligent Computing. Theories and Applications

Intelligent Fault Diagnosis and Remaining Useful Life Prediction of Rotating Machinery provides a comprehensive introduction of intelligent fault diagnosis and RUL prediction based on the current achievements of the author's research group. The main contents include multi-domain signal processing and feature extraction, intelligent diagnosis models, clustering algorithms, hybrid intelligent diagnosis strategies, and RUL prediction approaches, etc. This book presents fundamental theories and advanced methods of identifying the occurrence, locations, and degrees of faults, and also includes information on how to predict the RUL of rotating machinery. Besides experimental demonstrations, many application cases are presented and illustrated to test the methods mentioned in the book. This valuable reference provides an essential guide on machinery fault diagnosis that helps readers understand basic concepts and fundamental theories. Academic researchers with mechanical engineering or computer science backgrounds, and engineers or practitioners who are in charge of machine safety, operation, and maintenance will find this book very useful. Provides a detailed background and roadmap of intelligent diagnosis and RUL prediction of rotating machinery, involving fault mechanisms, vibration characteristics, health indicators, and diagnosis and prognostics Presents basic theories, advanced methods, and the latest contributions in the field of intelligent fault diagnosis and RUL prediction Includes numerous application cases, and the methods, algorithms, and models introduced in the book are demonstrated by industrial experiences
Computational modeling and simulation has developed and expanded into a diverse range of fields such as digital signal processing, image processing, robotics, systems biology, and many more; enhancing the need for a diversifying problem solving applications in this area. Efficiency and Scalability Methods for Computational Intellect presents various theories and methods for approaching the problem of modeling and simulating intellect in order to target computation efficiency and scalability of proposed methods. Researchers, instructors, and graduate students will benefit from this current research and will in turn be able to apply the knowledge in an effective manner to gain an understanding of how to improve this field.
The International Institute of Knowledge Innovation and Invention (IIKII, http://www.iikii.org) promotes the exchange of innovations and inventions and establishes a communication platform for international innovations and research. In 2019, IIKII cooperates with the IEEE Tainan Section Sensors Council to hold IEEE conferences, such as IEEE ICIASE 2019, IEEE ECBIOS 2019, IEEE ICKII 2019, ICUSA-GAME 2019, and IEEE ECICE 2019. This Special Issue, entitled "Selected Papers from IIKII 2019 conferences", aims to showcase outstanding papers from IIKII 2019 conferences, including symmetry in physics, chemistry, biology, mathematics, and computer science, etc. It selected 21 outstanding papers from 750 papers presented in IIKII 2019 conferences on the topic of symmetry. The main goals of this Special Issue are to encourage scientists to publish their experimental and theoretical results in as much detail as possible, and to discover new scientific knowledge relevant to the topic of symmetry.
This book presents the main advanced signal processing techniques for fault detection and diagnosis in electromechanical systems. It focuses on presenting these advanced tools from time-frequency representation and time-scale analysis to demodulation techniques, including innovative and recently developed approaches.
Proceedings of International Conference on Advanced Manufacturing Technologies at CMERI, Durgapur During 29-30th November 2007
From Diagnosis to Prognosis
Advanced Computational Intelligence for Object Detection, Feature Extraction and Recognition in Smart Sensor Environments
Model-Based Condition Monitoring: Actuators, Drives, Machinery, Plants, Sensors, and Fault-tolerant Systems
Advanced Condition Monitoring and Fault Diagnosis of Electric Machines
Modeling, Condition Monitoring, and Fault Diagnosis

Mass production companies have become obliged to reduce their production costs and sell more products with lower profit margins in order to survive in competitive market conditions. The complexity and automation level of machinery are continuously growing. This development calls for some of the most critical issues that are reliability and dependability of automatic systems. In the future, machines will be monitored remotely, and computer-aided techniques will be employed to detect faults in the future, and also there will be unmanned factories where machines and systems communicate to each other, detect their own faults, and can remotely intercept their faults. The pioneer studies of such systems are fault diagnosis studies. Thus, we hope that this book will contribute to the literature in this regard.
This book reflects the latest research trends, methods and experimental results in the field of electrical and information technologies for rail transportation, which covers abundant state-of-the-art research theories and ideas. As a vital field of research that is highly relevant to current developments in a number of technological domains, the subjects it covered include intelligent computing, information processing, Communication Technology, Automatic Control, etc. The objective of the proceedings is to provide a major interdisciplinary forum for researchers, engineers, academicians as well as industrial professionals to present the most innovative research and development in the field of rail transportation electrical and information technologies. Engineers and researchers in academia, industry, and the government will also explore an insight view of the solutions that combine ideas from multiple disciplines in this field. The volumes serve as an excellent reference work for researchers and graduate students working on rail transportation, electrical and information technologies.
This two-volume set constitutes the post-conference proceedings of the 4th EAI International Conference on Advanced Hybrid Information Processing, ADHIP 2020, held in Binzhou, China, in September 2020. Due to COVID-19 the conference was held virtually. The 89 papers presented were selected from 190 submissions and focus on theory and application of hybrid information processing technology for smarter and more effective research and application. The theme of ADHIP 2020 was “Industrial applications of aspects with big data”. The papers are named in topical sections as follows: Industrial application of multi-modal information processing; Industrialized big data processing; Industrial automation and intelligent control; Visual information processing.
This book highlights the latest advances and trends in advanced signal processing (such as wavelet theory, time-frequency analysis, empirical mode decomposition, compressive sensing and sparse representation, and stochastic resonance) for structural health monitoring (SHM). Its primary focus is on the utilization of advanced signal processing techniques to help monitor the health status of critical structures and machines encountered in our daily lives: wind turbines, gas turbines, machine tools, etc. As such, it offers a key reference guide for researchers, graduate students, and industry professionals who work in the field of SHM.
Fourth International Conference on Intelligent Computing, ICIC 2008 Shanghai, China, September 15-18, 2008 Proceedings
Concepts, Methodologies, Tools, and Applications
Fault Detection
Fault Diagnosis and Detection
Chemical, Mechanical and Materials Engineering
Intelligent Fault Diagnosis and Remaining Useful Life Prediction of Rotating Machinery
Recent years have seen a vast development in various methodologies for object detection and feature extraction and recognition, both in theory and in practice. When processing images, videos, or other types of multimedia, one needs efficient solutions to perform fast and reliable processing. Computational intelligence is used for medical screening where the detection of disease symptoms is carried out, in prevention monitoring to detect suspicious behavior, in agriculture systems to help with growing plants and animal breeding, in transportation systems for the control of incoming and outgoing transportation, for unmanned vehicles to detect obstacles and avoid collisions, in optics and materials for the detection of surface damage, etc. In many cases, we use developed techniques which help us to recognize some special features. In the context of this innovative research on computational intelligence, the Special Issue “Advanced Computational Intelligence for Object Detection, Feature Extraction and Recognition in Smart Sensor Environments” present an excellent opportunity for the dissemination of recent results and achievements for further innovations and development. It is my pleasure to present this collection of excellent contributions to the research community. - Prof. Marcin Woźniak, Silesian University of Technology, Poland –
This volume comprises papers presented at the 2nd International Conference on Advanced Nondestructive Evaluation (ANDE 2007) held in Busan, Korea, on October 17–19, 2007. Many of the excellent papers included in this book show the current state of nondestructive technologies, which are experiencing rapid progress with the integration of emerging technologies in various fields. As such, this volume provides an avenue for both specialists and scholars to share their ideas and the results of their findings in the field of nondestructive evaluation.
This book covers the theory, design and applications of computer networks, distributed computing and information systems. Networks of today are going through a rapid evolution, and there are many emerging areas of information networking and their applications. Heterogeneous networking supported by recent technological advances in low-power wireless communications along with silicon integration of various functionalities such as sensing, communications, intelligence and actuations is emerging as a critically important disruptive computer class based on a new platform, networking structure and interface that enable novel, low-cost and high-volume applications. Several of such applications have been difficult to realize because of many interconnections problems. To fulfill their large range of applications, different kinds of networks need to collaborate, and wired and next-generation wireless systems should be integrated in order to develop high-performance computing solutions to problems arising from the complexities of these networks. The aim of the book "Advanced Information Networking and Applications" is to provide latest research findings, innovative research results, methods and development techniques from both theoretical and practical perspectives related to the emerging areas of information networking and applications.
Machinery Vibration Analysis and Predictive Maintenance provides a detailed examination of the detection, location and diagnosis of faults in rotating and reciprocating machinery using vibration analysis. The basics and underlying physics of vibration signals are first examined. The acquisition and processing of signals is then reviewed followed by a discussion of machinery fault diagnosis using vibration analysis. Hereafter the important issue of rectifying faults that have been identified using vibration analysis is covered. The book also covers the other techniques of predictive maintenance such as oil and particle analysis, ultrasound and infrared thermography. The latest approaches and equipment used together with the latest techniques in vibration analysis emerging from current research are also highlighted. Understand the basics of vibration measurement Apply vibration analysis for different machinery faults Diagnose machinery-related problems with vibration analysis techniques
Signal Processing for Fault Detection and Diagnosis in Electric Machines and Systems
Advanced Intelligent Computing Theories and Applications. With Aspects of Theoretical and Methodological Issues
Electrical Systems 2
Rail Transportation System Safety and Maintenance Technologies
Selected Contributions from the International Conference on Sustainable Vital Technologies in Engineering and Informatics, BUE ACE1 2016, 7-9 November 2016, Cairo, Egypt

This book reports on cutting-edge technologies that have been fostering sustainable development in a variety of fields, including built and natural environments, structures, energy, advanced mechanical technologies as well as electronics and communication technologies. It reports on the applications of Geographic Information Systems (GIS), Internet-of-Things, predictive maintenance, as well as modeling and control techniques to reduce the environmental impacts of buildings, enhance their environmental contribution and positively impact the social equity. The different chapters, selected on the basis of their timeliness and relevance for an audience of engineers and professionals, describe the major trends in the field of sustainable engineering research, providing them with a snapshot of current issues together with important technical information for their daily work, as well as an interesting source of new ideas for their future research. The works included in this book were selected among the contributions to the BUE ACE1, the first event, held in Cairo, Egypt, on 8-9 November 2016, of a series of Annual Conferences & Exhibitions (ACE) organized by the British University in Egypt (BUE).
This book provides advanced techniques for precision compensation and fault diagnosis of precision motion systems and rotating machinery. Techniques and applications through experiments and case studies for intelligent precision compensation and fault diagnosis are offered along with the introduction of machine learning and deep learning methods. Machine Learning-Based Fault Diagnosis for Industrial Engineering Systems discusses how to formulate and solve precision compensation and fault diagnosis problems. The book includes experimental results on hardware equipment used as practical examples throughout the book. Machine learning and deep learning methods used in intelligent precision compensation and intelligent fault diagnosis are introduced. Applications to deal with relevant problems concerning CNC machining and rotating machinery in industrial engineering systems are provided in detail along with applications used in precision motion systems. Methods, applications, and concepts offered in this book can help all professional engineers and students across many areas of engineering and operations management that are involved in any part of Industry 4.0 transformation.
The proceedings brings together a selection of papers from the 7th International Workshop of Advanced Manufacturing and Automation (IWAMA 2017), held in Changshu Institute of Technology, Changshu, China on September 11–12, 2017. Most of the topics are focusing on novel techniques for manufacturing and automation in Industry 4.0. These contributions are vital for maintaining and improving economic development and quality of life. The proceeding will assist academic researchers and industrial engineers to implement the concepts and theories of Industry 4.0 in industrial practice, in order to effectively respond to the challenges posed by the 4th industrial revolution and smart factories.
Fault Diagnosis and Prognosis Techniques for Complex Engineering Systems gives a systematic description of the many facets of envisaging, designing, implementing, and experimentally exploring emerging trends in fault diagnosis and failure prognosis in mechanical, electrical, hydraulic and biomedical systems. The book is devoted to the development of mathematical methodologies for fault diagnosis and isolation, fault tolerant control, and failure prognosis problems of engineering systems. Sections present new techniques in reliability modeling, reliability analysis, reliability design, fault and failure detection, signal processing, and fault tolerant control of engineering systems. Sections focus on the development of mathematical methodologies for diagnosis and prognosis of faults or failures, providing a unified platform for understanding and applicability of advanced diagnosis and prognosis methodologies for improving reliability purposes in both theory and practice, such as vehicles, manufacturing systems, circuits, flights, biomedical systems. This book will be a valuable resource for different groups of readers – mechanical engineers working on vehicle systems, electrical engineers working on rotary machinery systems, control engineers working on fault detection systems, mathematicians and physician working on complex dynamics, and many more. Presents recent advances of theory, technological aspects, and applications of advanced diagnosis and prognosis methodologies in engineering applications Provides a series of the latest results, including fault detection, isolation, fault tolerant control, failure prognosis of components, and more Gives numerical and simulation results in each chapter to reflect engineering practices
Advanced Hybrid Information Processing
6th International Conference on Intelligent Computing, Changsha, China, August 18-21, 2010. Proceedings
Selected Papers from IIKII 2019 conferences in Symmetry
Structural Health Monitoring
ICT Innovations 2020. Machine Learning and Applications
Data Mining: Concepts, Methodologies, Tools, and Applications
In this book, a number of innovative fault diagnosis algorithms in recently years are introduced. These methods can detect failures of various types of system effectively, and with a relatively high significance.
This book presents selected papers from the 10th International Workshop of Advanced Manufacturing and Automation (IWAMA 2020), held in Zhanjiang, Guangdong province, China, on October 12-13, 2020. Discussing topics such as novel techniques for manufact automation in Industry 4.0 and smart factories, which are vital for maintaining and improving economic development and quality of life, it offers researchers and industrial engineers insights into implementing the concepts and theories of Industry 4.0, in order to effect

to the challenges posed by the 4th industrial revolution and smart factories.
The International Conference on Intelligent Computing (ICIC) was formed to provide an annual forum dedicated to the emerging and challenging topics in artificial intel- gence, machine learning, pattern recognition, image processing, bioinformatics, and computationa aims to bring together researchers and practitioners from both academia and industry to share ideas, problems, and solutions related to the m- tifaceted aspects of intelligent computing. ICIC 2010, held in Changsha, China, August 18-21, 2010, constituted the 6th - t Conference on Intelligent Computing. It built upon the success of ICIC 2009, ICIC 2008, ICIC 2007, ICIC 2006, and ICIC 2005, that were held in Ulsan, Korea, Shanghai, Qingdao, Kunming and Hefei, China, respectively. This year, the conference concentrated main theories and methodologies as well as the emerging applications of intelligent computing. Its aim was to unify the picture of contemporary intelligent computing techniques as an integral concept that highlights the trends in advanced computational intelligence and bri theoretical research with applications. Therefore, the theme for this conference was “Advanced Intelligent Computing Technology and Applications.” Papers focusing on this theme were solicited, addressing theories, methodologies, and applications in science and te
This book presents the processing of the third edition of the Condition Monitoring of Machinery in Non-Stationary Operations (CMMNO13), which was held in Ferrara, Italy. This yearly event merges an international community of researchers who met – in 2011 in Wro (Poland) and in 2012 in Hammamet (Tunisia) – to discuss issues of diagnostics of rotating machines operating in complex motion and/or load conditions. The growing interest of the industrial world on the topics covered by the CMMNO13 involves the fields of packag automotive, agricultural, mining, processing and wind machines in addition to that of the systems for data acquisition. The participation of speakers and visitors from industry makes the event an opportunity for immediate assessment of the potential applications of ac methodologies for the signal analysis. Signals acquired from machines often contain contributions from several different components as well as noise. Therefore, the major challenge of condition monitoring is to point out the signal content that is related to the state o component particularly in non-stationary conditions.
Machine Learning-Based Fault Diagnosis for Industrial Engineering Systems
Neural Computing for Advanced Applications
Advanced Manufacturing and Automation VII
Proceedings of the third International Conference on Condition Monitoring of Machinery in Non-Stationary Operations CMMNO 2013
Volume 2
Advanced Nondestructive Evaluation Ii
This book presents refereed proceedings of the Second International Conference Neural Computing for Advanced Applications, NCAA 2021, held in Guangzhou, China, in August, 2021. The 54 full papers papers were thoroughly reviewed and selected from a total of 144 qualified submissions. The papers are organized in topical sections on neural network theory, cognitive sciences, neuro-system hardware implementations, and NN-based engineering applications; machine learning, data mining, data security and privacy protection, and data-driven applications; neural computing-based fault diagnosis, fault forecasting, prognostic management, and system modeling; computational intelligence, nature-inspired optimizers, and their engineering applications; fuzzy logic, neuro-fuzzy systems, decision making, and their applications in management sciences; control systems, network synchronization, system integration, and industrial artificial intelligence; computer vision, image processing, and their industrial applications; cloud/edge/fog computing, the Internet of Things/Vehicles(IoT/IoV), and their system optimization; spreading dynamics, forecasting, and other intelligent techniques against coronavirus disease (COVID-19).
Methods of diagnosis and prognosis play a key role in the reliability and safety of industrial systems. Failure diagnosis requires the use of suitable sensors, which provide signals that are processed to monitor features (health indicators) for defects. These features are required to distinguish between operating states, in order to inform the operator of the severity level, or even the type, of a failure. Prognosis is defined as the estimation of a system's lifespan, including how long remains and how long has passed. It also encompasses the prediction of impending failures. This is a challenge that many researchers are currently trying to address. Electrical Systems, a book in two volumes, informs readers of the theoretical solutions to this problem, and the results obtained in several laboratories in France, Spain and further afield. To this end, many researchers from the scientific community have contributed to this book to share their research results.
The International Conference on Intelligent Computing (ICIC) was formed to p- vide an annual forum dedicated to the emerging and challenging topics in artificial intelligence, machine learning, bioinformatics, and computational biology, etc. It aims to bring together researchers and practitioners from both academia and ind- try to share ideas, problems and solutions related to the multifaceted aspects of intelligent computing. ICIC 2008, held in Shanghai, China, September 15–18, 2008, constituted the 4th International Conference on Intelligent Computing. It built upon the success of ICIC 2007, ICIC 2006 and ICIC 2005 held in Qingdao, Kunming and Hefei, China, 2007, 2006 and 2005, respectively. This year, the conference concentrated mainly on the theories and methodologies as well as the emerging applications of intelligent computing. Its aim was to unify the picture of contemporary intelligent computing techniques as an integral concept that highlights the trends in advanced computational intelligence and bridges theoretical research with applications. Therefore, the theme for this conference was “Emerging Intelligent Computing Technology and Applications”. Papers focusing on this theme were solicited, addressing theories, methodologies, and applications in science and technology.
Focusing on the most rapidly changing areas of mechatronics, this book discusses signals and system control, mechatronic products, metrology and nanometrology, automatic control & robotics, biomedical engineering, photonics, design manufacturing and testing of MEMS. It is reflected in the list of contributors, including an international group of 302 leading researchers representing 12 countries. The book is intended for use in academic, government and industry R&D departments, as an indispensable reference tool for the years to come. Thid volume can serve a global community as the definitive reference source in Mechatronics. The book comprises carefully selected 93 contributions presented at the 11th International Conference Mechatronics 2015, organized by Faculty of Mechatronics, Warsaw University of Technology, on September 21-23, in Warsaw, Poland.
Electric Machines
Proceedings of the 35th International Conference on Advanced Information Networking and Applications (AINA-2021), Volume 3
Second International Symposium on Neural Networks, Chongqing, China, May 30 - June 1, 2005, Proceedings, Part III
International Journal of Prognostics and Health Management Volume 2 (color)
Advances in Neural Networks - ISNN 2005
Control Systems, Robotics and AutomatioN – Volume XVI
Digital filters, together with signal processing, are being employed in the new technologies and information systems, and are implemented in different areas and applications. Digital filters and signal processing are used with no costs and they can be adapted to different cases with great flexibility and reliability. This book presents advanced developments in digital filters and signal process methods covering different cases studies. They present the main essence of the subject, with the principal approaches to the most recent mathematical models that are being employed worldwide.
"Preface The development of the electric motor is one of the greatest achievements of the modern energy conversion industry. Countless electric motors are being used in our daily lives for critical service applications such as transportation, medical treatment, military operation, communication, etc. However, due to the fundamental limitations of material life time, deterioration, contamination, manufacturing defects, or damages in operations, an electrical motor will eventually go into failure mode. An unexpected failure might lead to the loss of valuable human life or a costly standstill in industry, which needs to be prevented by precisely detecting or continuously monitoring the working condition of a motor. This book was written to provide a full review of diagnosis technologies and an application guide for graduate and senior undergraduate students in power electronics discipline who want to research, develop, and implement a fault diagnosis & condition monitoring scheme for better safety and improved reliability in electric motor operation. Furthermore, electrical and mechanical engineers in industry are also encouraged to take portions of materials in this book as a reference to understand the fundamentals of fault cause and effect and to fulfill successful implementation"--
Contributed papers presented at the conference organized by Central Mechanical Engineering Research Institute.
Fault Diagnosis and Prognosis Techniques for Complex Engineering Systems gives a systematic description of the many facets of envisaging, designing, implementing, and experimentally exploring emerging trends in fault diagnosis and failure prognosis in mechanical, electrical, hydraulic and biomedical systems. The book is devoted to the development of mathematical methodologies for fault diagnosis and isolation, fault tolerant control, and failure prognosis problems of engineering systems. Sections present new techniques in reliability modeling, reliability analysis, reliability design, fault and failure detection, signal processing, and fault tolerant control of engineering systems. Sections focus on the development of mathematical methodologies for diagnosis and prognosis of faults or failures, providing a unified platform for understanding and applicability of advanced diagnosis and prognosis methodologies for improving reliability purposes in both theory and practice, such as vehicles, manufacturing systems, circuits, flights, biomedical systems. This book will be a valuable resource for different groups of readers - mechanical engineers working on vehicle systems, electrical engineers working on rotary machinery systems, control engineers working on fault detection systems, mathematicians and physician working on complex dynamics, and many more. Presents recent advances of theory, technological aspects, and applications of advanced diagnosis and prognosis methodologies in engineering applications Provides a series of the latest results, including fault detection, isolation, fault tolerant control, failure prognosis of components, and more Gives numerical and simulation results in each chapter to reflect engineering practices
Advanced Earth-to-orbit Propulsion Technology--1994
4th EAI International Conference, ADHIP 2020, Binzhou, China, September 26-27, 2020, Proceedings, Part II
Advanced Mechatronics Solutions
Efficiency and Scalability Methods for Computational Intellect
Fault Diagnosis and Prognosis Techniques for Complex Engineering Systems
Advances in Condition Monitoring of Machinery in Non-Stationary Operations
Advanced Condition Monitoring and Fault Diagnosis of Electric MachinesIGI Global
The reliability of induction motors is a major requirement in many industrial applications. It is especially important where an unexpected breakdown might result in the interruption of critical services such as military operations, transportation, aviation, and medical applications. Advanced Condition Monitoring and Fault Diagnosis of Electric Machines is a collection of innovative research on various issues related to machinery condition monitoring, signal processing and conditioning, instrumentation and measurements, and new trends in condition monitoring. It also pays special attention to the fault identification process. While highlighting topics including spectral analysis, electrical engineering, and bearing faults, this book is an ideal reference source for electrical engineers, mechanical engineers, researchers, and graduate-level students seeking current research on various methods of maintaining machinery.
Data mining continues to be an emerging interdisciplinary field that offers the ability to extract information from an existing data set and translate that knowledge for end-users into an understandable way. Data Mining: Concepts, Methodologies, Tools, and Applications is a comprehensive collection of research on the latest advancements and developments of data mining and how it fits into the current technological world.
This book constitutes the refereed proceedings of the 12th International ICT Innovations Conference, ICT Innovations 2020, held in Skopje, North Macedonia, in September 2020. The 12 full papers and 6 short papers presented were carefully reviewed and selected from 60 submissions. The focal point of the volume is machine learning and applications in spheres of business, science and technology.
Machine Learning-based Fault Diagnosis for Industrial Engineering Systems
Advanced Technologies for Sustainable Systems
Advanced Information Networking and Applications
Advanced Manufacturing Technologies
The Shock and Vibration Digest
12th International Conference, ICT Innovations 2020, Skopje, North Macedonia, September 24–26, 2020, Proceedings
The three volume set LNCS 3496/3497/3498 constitutes the refereed proceedings of the Second International Symposium on Neural Networks, ISNN 2005, held in Chongqing, China in May/June 2005. The 483 revised papers presented were carefully reviewed and selected from 1.425 submissions. The papers are organized in topical sections on theoretical analysis, model design, learning methods, optimization methods, kernel methods, component analysis, pattern analysis, systems modeling, signal processing, image processing, financial analysis, control systems, robotic systems, telecommunication networks, incidence detection, fault diagnosis, power systems, biomedical applications, industrial applications, and other applications.
Supervision, condition-monitoring, fault detection, fault diagnosis and fault management play an increasing role for technical processes and vehicles in order to improve reliability, availability, maintenance and lifetime. For safety-related processes fault-tolerant systems with redundancy are required in order to reach comprehensive system integrity. This book is a sequel of the book “ Fault-Diagnosis Systems ” published in 2006, where the basic methods were described. After a short introduction into fault-detection and fault-diagnosis methods the book shows how these methods can be applied for a selection of 20 real technical components and processes as examples, such as: Electrical drives (DC, AC) Electrical actuators Fluidic actuators (hydraulic, pneumatic) Centrifugal and reciprocating pumps Pipelines (leak detection) Industrial robots Machine tools (main and feed drive, drilling, milling, grinding) Heat exchangers Also realized fault-tolerant systems for electrical drives, actuators and sensors are presented. The book describes why and how the various signal-model-based and process-model-based methods were applied and which experimental results could be achieved. In several cases a combination of different methods was most successful. The book is dedicated to graduate students of electrical, mechanical, chemical engineering and computer science and for engineers.
Proceedings of the 4th International Conference on Electrical and Information Technologies for Rail Transportation (EITRT) 2019
A Publication of the Shock and Vibration Information Center, Naval Research Laboratory
Practical Machinery Vibration Analysis and Predictive Maintenance
An Advanced Signal Processing Perspective
Fault Analysis and Control
Digital Filters and Signal Processing