Expert Knowledge Based Reliability Models Theory And Case Study Integrating Data And Expert Opinion Using Bayesian Statistics To Build Complex Reliability Models

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LIN BROWN

Machine Tool Reliability Springer Nature
In this introduction to computational modelling the authors provide a concise description of computational methods, including dynamic simulation, knowledge-based models and machine learning, as a single broad class of research tools.
New Trends in System Reliability Evaluation CRC Press
This volume gathers the latest advances, innovations and applications in the field of condition monitoring, plant maintenance and reliability, as presented by leading international researchers and engineers at the 5th International Conference on Maintenance Engineering and the 2020 Annual Conference of the Centre for Efficiency and Performance Engineering Network (IncoME-V & CEPE Net-2020), held in Zhuhai, China on October 23-25, 2020. Topics include vibro-acoustics monitoring, condition-based maintenance, sensing and instrumentation, machine health monitoring, maintenance auditing and organization, non-destructive testing, reliability, asset management, condition monitoring, life-cycle cost optimisation, prognostics and health

management, maintenance performance measurement, manufacturing process monitoring, and robot-based monitoring and diagnostics. The contributions, which were selected through a rigorous international peer-review process, share exciting ideas that will spur novel research directions and foster new multidisciplinary collaborations.

GI-Dagstuhl Research Seminar, Dagstuhl Castle, Germany, October 5 - November 1, 2005, Advanced Lectures Springer Science & Business Media

This book presents a bibliographical review of the use of Bayesian networks in reliability over the last decade. Bayesian network (BN) is considered to be one of the most powerful models in probabilistic knowledge representation and inference, and it is increasingly used in the field of reliability. After focusing on the engineering systems, the book subsequently discusses twelve important issues in the BN-based reliability methodologies, such as BN structure modeling, BN parameter modeling, BN inference, validation, and verification. As such, it is a valuable resource for researchers and practitioners in the field of reliability engineering.

Principles of Performance and Reliability Modeling and Evaluation John Wiley & Sons

Uptime describes the combination of activities that deliver fewer breakdowns, improved productive capacity, lower costs, and better environmental performance. The bestselling second edition of Uptime has been used as a textbook on maintenance management in several postsecondary institutions and by many companies as the model framework for their maintenance management programs. Following in the tradition of its bestselling predecessors, Uptime: Strategies for Excellence in Maintenance Management, Third Edition explains how to deal with increasingly complex technologies, such as mobile and cloud computing, to support maintenance departments and set the stage for compliance with international standards for asset management. This updated edition reflects a far broader and deeper wealth of experience and knowledge. In addition, it restructures its previous model of excellence slightly to align what must be done more closely with how to do it. The book provides a strategy for developing and executing improvement plans that work well with the new values prevalent in today's workforce. It also explains how you can use seemingly competing improvement tools to complement and enhance each other. This edition also highlights action you can take to compensate for the gradual loss of skills in the current workforce as "baby boomers" retire.

Bayesian Methods for Assessing System Reliability Springer

This book contains extended versions of 34 carefully selected and reviewed papers presented at the Third International Conference on Mathematical Methods in Reliability, held in Trondheim, Norway in 2002. It provides a broad overview of current research activities in reliability theory and its applications. There are chapters on reliability modelling, network and system reliability, reliability optimization, survival analysis, degradation and maintenance modelling, and software reliability. The authors are all leading experts in the field. A particular feature of the book is a historical review by Professor Richard E Barlow, well known for his pioneering research on reliability. The list of authors also includes the plenary session speakers Odd O Aalen, Philip J

Boland, Sallie A Keller-McNulty, and Nozer Singpurwalla.
Contents: Reliability Theory in the Past and Present Centuries; General Aspects of Reliability Modelling; Reliability of Networks and Systems; Stochastic Modelling and Optimization in Reliability; Modelling in Survival and Reliability Analysis; Statistical Methods for Degradation Data; Statistical Methods for Maintained Systems; Statistical Inference in Survival Analysis; Software Reliability Methods. Readership: Graduate students, academics and professionals in probability & statistics, reliability analysis, survival analysis, industrial engineering, software engineering, operations research and applied mathematics research.
Optimization Models in Software Reliability CRC Press
These three volumes comprise the papers presented at the ESREL '97 International Conference on Safety and Reliability held in Lisbon, Portugal, 17-20 June 1997. The purpose of the annual ESREL conferences is to provide a forum for the presentation of technical and scientific papers covering both methods and applications of safety and reliability to a wide range of industrial sectors and technical disciplines and, in so doing, to enhance cross-fertilization between them. A broad view is taken of safety and reliability which includes probabilistically-based methods, or, more generally, methods that deal with the quantification of the uncertainty in the knowledge of the real world and with decision-making under this uncertainty. The areas covered include: design and product liability; availability, reliability and maintainability; assessment and management of risks to technical systems; health and the environment; and mathematical methods of reliability and statistical analysis of data. The organization of the book closely follows the sessions of the conference with each of the three volumes containing papers from two parallel sessions, comprising a total of 270 papers by authors from 35 countries.
Integrated Software Architecture-Based Reliability Prediction for IT Systems CRC Press
Provides an up-to-date review of the latest developments in system reliability maintenance, fault detection and fault-tolerant design techniques. Topics covered include reliability analysis and optimization, maintenance control policies, fault detection techniques, fault-tolerant systems, reliable controllers and robustness, knowledge based approaches and decision support systems. There are further applications papers on process control, robotics, manufacturing systems, communications and power systems. Contains 36 papers.
Key Developments in Practice and Procedures CRC Press
Advances in Safety, Reliability and Risk Management contains the papers presented at the 20th European Safety and Reliability (ESREL 2011) annual conference in Troyes, France, in September 2011. The books covers a wide range of topics, including: Accident and Incident Investigation; Bayesian methods; Crisis and Emergency Management; Decision Making
Safety and Reliability – Safe Societies in a Changing World Elsevier
This book bridges the gap between the many different disciplines used in applications of risk analysis to real world problems. Contributed by some of the world's leading experts, it creates a common information base and language for all risk analysis practitioners, risk managers, and decision makers. Valuable as both a reference for practitioners and a comprehensive textbook for students, Fundamentals of Risk Analysis and Risk

Management is a unique contribution to the field. Its broad coverage ranges from basic theory of risk analysis to practical applications, risk perception, legal and political issues, and risk management.

Theory, Methods and Applications (4 Volumes + CD-ROM) IGI Global

The two-volume set LNCS 11944-11945 constitutes the proceedings of the 19th International Conference on Algorithms and Architectures for Parallel Processing, ICA3PP 2019, held in Melbourne, Australia, in December 2019. The 73 full and 29 short papers presented were carefully reviewed and selected from 251 submissions. The papers are organized in topical sections on: Parallel and Distributed Architectures, Software Systems and Programming Models, Distributed and Parallel and Network-based Computing, Big Data and its Applications, Distributed and Parallel Algorithms, Applications of Distributed and Parallel Computing, Service Dependability and Security, IoT and CPS Computing, Performance Modelling and Evaluation.

Safety, Reliability and Applications of Emerging Intelligent Control Technologies Dependability MetricsGI-Dagstuhl Research Seminar, Dagstuhl Castle, Germany, October 5 - November 1, 2005, Advanced Lectures

This book contains the papers presented at the 20th UK Workshop on Computational Intelligence (UKCI 2021), held virtually by Aberystwyth University, 8–10th September 2021. This marks the 20th anniversary of UKCI; a testament to the increasing role and importance of Computational Intelligence (CI) and the continuing interest in its development. UKCI provides a forum for the academic community and industry to share ideas and experience in this field. EDMA 2021, the 4th International Engineering Data- and Model-Driven Applications workshop, is also incorporated and held in conjunction with UKCI 2021. Paper submissions were invited in the areas of fuzzy systems, neural networks, evolutionary computation, machine learning, data mining, cognitive computing, intelligent robotics, hybrid methods, deep learning and applications of CI.

Uptime CRC Press

The design of knowledge systems is finding myriad applications from corporate databases to general decision support in areas as diverse as engineering, manufacturing and other industrial processes, medicine, business, and economics. In engineering, for example, knowledge bases can be utilized for reliable electric power system operation. In medicine they support complex diagnoses, while in business they inform the process of strategic planning. Programmed securities trading and the defeat of chess champion Kasparov by IBM's Big Blue are two familiar examples of dedicated knowledge bases in combination with an expert system for decision-making. With volumes covering "Implementation," "Optimization," "Computer Techniques," and "Systems and Applications," this comprehensive set constitutes a unique reference source for students, practitioners, and researchers in computer science, engineering, and the broad range of applications areas for knowledge-based systems.

Structures and Infrastructures Book Series, Vol. 10 Elsevier

The book begins with an introduction to software reliability, models and techniques. The book is an informative book covering the strategies needed to assess software failure behaviour and its quality, as well as the application of optimization tools for major

managerial decisions related to the software development process. It features a broad range of topics including software reliability assessment and apportionment, optimal allocation and selection decisions and upgradations problems. It moves through a variety of problems related to the evolving field of optimization of software reliability engineering, including software release time, resource allocating, budget planning and warranty models, which are each explored in depth in dedicated chapters. This book provides a comprehensive insight into present-day practices in software reliability engineering, making it relevant to students, researchers, academics and practising consultants and engineers.

Reliability, Risk, and Safety, Three Volume Set Springer Science & Business Media

Containing papers presented at the 18th European Safety and Reliability Conference (Esrel 2009) in Prague, Czech Republic, September 2009, Reliability, Risk and Safety Theory and Applications will be of interest for academics and professionals working in a wide range of industrial and governmental sectors, including Aeronautics and Aerospace, Aut

Bayesian Networks for Reliability Engineering Elsevier

This book is a collection of papers presented at the International Conference on Reliability Techniques and their Application.Reliability ⁄91, 10-12 June 1991 was held at the Royal Lancaster Hotel, London, UK, organised by SRD (the Safety and Reliability Consultants of AEA Technology) and the institution of Quality Assurance (IQA), and supported by the European Safety and Reliability Association (ESRA).

Proceedings of IncoME-V & CEPE Net-2020 Springer Nature

Safety and Reliability – Safe Societies in a Changing World collects the papers presented at the 28th European Safety and Reliability Conference, ESREL 2018 in Trondheim, Norway, June 17-21, 2018. The contributions cover a wide range of methodologies and application areas for safety and reliability that contribute to safe societies in a changing world. These methodologies and applications include: - foundations of risk and reliability assessment and management - mathematical methods in reliability and safety - risk assessment - risk management - system reliability - uncertainty analysis - digitalization and big data - prognostics and system health management - occupational safety - accident and incident modeling - maintenance modeling and applications - simulation for safety and reliability analysis - dynamic risk and barrier management - organizational factors and safety culture - human factors and human reliability - resilience engineering - structural reliability - natural hazards - security - economic analysis in risk management Safety and Reliability – Safe Societies in a Changing World will be invaluable to academics and professionals working in a wide range of industrial and governmental sectors: offshore oil and gas, nuclear engineering, aeronautics and aerospace, marine transport and engineering, railways, road transport, automotive engineering, civil engineering, critical infrastructures, electrical and electronic engineering, energy production and distribution, environmental engineering, information technology and telecommunications, insurance and finance, manufacturing, marine transport, mechanical engineering, security and protection, and policy making.

Models and Standards World Scientific

E-Health Systems Quality and Reliability: Models and Standards addresses the reason, principles and functionality of health and health care systems and presents a novel framework for revealing, understanding and implementing appropriate management interventions leading to qualitative improvement. It also provides evidence on the quality and reliability of telemedicine and reviews standards and guidelines for practicing medicine at a distance.

Safety and Reliability: Methodology and Applications KIT Scientific Publishing

Mechanistic models are often employed to simulate processes in coastal environments. However, these predictive tools are highly specialized, involve certain assumptions and limitations, and can be manipulated only by experienced engineers who have a thorough understanding of the underlying principles. This results in significant constraints on their manipulation as well as large gaps in understanding and expectations between the developers and users of a model. Recent advancements in soft computing technologies make it possible to integrate machine learning capabilities into numerical modelling systems in order to bridge the gaps and lessen the demands on human experts. This book reviews the state-of-the-art in conventional coastal modelling as well as in the increasingly popular integration of various artificial intelligence technologies into coastal modelling. Conventional hydrodynamic and water quality modelling techniques comprise finite difference and finite element methods. The novel algorithms and methods include knowledge-based systems, genetic algorithms, artificial neural networks, and fuzzy inference systems. Different soft computing methods contribute towards accurate and reliable prediction of coastal processes. Combining these techniques and harnessing their benefits has the potential to make extremely powerful modelling tools.

E-Health Systems Quality and Reliability: Models and Standards SAGE

Due to its high impact on the cost of electricity and its direct correlation with customer satisfaction, distribution reliability continues to be one of the most important topics in the electric power industry. Continuing in the unique tradition of the bestselling first edition, Electric Power Distribution Reliability, Second Edition consolidates all pertinent topics on electric power distribution into one comprehensive volume balancing theory, practical knowledge, and real world applications. Updated and expanded with new information on benchmarking, system hardening, underground conversion, and aging infrastructure, this timely reference enables you to— · Manage aging infrastructure · Harden electric power distribution systems · Avoid common benchmarking pitfalls · Apply effective risk management The electric power industry will continue to make distribution system reliability and customer-level reliability a top priority. Presenting a wealth of useful knowledge, Electric Power Distribution Reliability, Second Edition remains the only book that is completely dedicated to this important topic.

Computer-Assisted Management and Control of Manufacturing Systems Springer Nature

Safety, Reliability and Risk Analysis. Theory, Methods and Applications contains the papers presented at the joint ESREL (European Safety and Reliability) and SRA-Europe (Society for Risk Analysis Europe) Conference (Valencia, Spain, 22-25

September 2008). The book covers a wide range of topics, including: Accident and Incident Investigation; Crisi