

Data Mining For Healthcare Management

Data mining analysis techniques have undergone significant developments in recent years. This has led to improved uses throughout numerous functions and applications. Intelligent Multidimensional Data Clustering and Analysis is an authoritative reference source for the latest scholarly research on the advantages and challenges presented by the use of cluster analysis techniques. Highlighting theoretical foundations, computing paradigms, and real-world applications, this book is ideally designed for researchers, practitioners, upper-level students, and professionals interested in the latest developments in cluster analysis for large data sets.

This book is a small endeavor to share the journey of getting introduced to a wonderful topic Data Mining. Personally we came across this during the process of evaluating new tools to be included in the post graduate study curricula of the University we are working in. Soon it became a friendly affair to see the power, potential and ease of empowering the databases with concepts of data mining. It has become powerful in rediscovering the hidden values in data base and soon in data warehouse, equally efficiently. The Data mining is a powerful new technology with great potential focusing on the most important information in their data warehouses. It involves extraction of hidden predictive information from large databases with ease and efficiency. It facilitates to make proactive, knowledge-driven decisions and predict future trends and behaviors. Data mining tools move beyond the analyses of past events provided by retrospective tools typical of decision support systems. The automated, prospective analyses offered by data mining tools can answer finding predictive information easily. This small book is an introduction to the basics of data mining. It also introduces the techniques and technologies behind data mining, the impact of artificial intelligence, artificial neural networks, and fuzzy logic et cetera as the basic building blocks for the same. It concludes with common practical applications, trends and its impact on social and computing environment.

One of the aims of this study is to find weaknesses and strengths of healthcare industry by defining problems, finding solutions and suggesting some models through existing studies and analyzing current healthcare system in Turkey and other developed countries. These critical parts are tried to be modeled in case studies in each chapter such as dialysis analysis, breast cancer, congestion of system, stress, queues etc. Main problems depending on hospital type are defined and some solutions are tried to be developed. Later, the existing systems of the hospitals are generalized. Opportunities and threats of specific and general situations are determined in healthcare by SWOT analysis. Moreover, SWOT method and bench-marking are used to deploy strategies by TOWS matrix. This book can be used in every country to improve their current healthcare system and increase learning and awareness in health.

This book constitutes the refereed proceedings of the 10th International Conference on Machine Learning and Data Mining in Pattern Recognition, MLDM 2014, held in St. Petersburg, Russia in July 2014. The 40 full papers presented were carefully reviewed and selected from 128 submissions. The topics range from theoretical topics for classification, clustering, association rule

and pattern mining to specific data mining methods for the different multimedia data types such as image mining, text mining, video mining and Web mining.

This book constitutes the refereed proceedings at PAKDD Workshops 2014, held in conjunction with the 18th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD) held in Tainan, Taiwan, in May 2014. The 73 revised papers presented were carefully reviewed and selected from 179 submissions. The workshops affiliated with PAKDD 2014 include: Data Analytics for Targeted Healthcare, DANTH; Data Mining and Decision Analytics for Public Health and Wellness, DMDA-Health; Biologically Inspired Data Mining Techniques, BDM; Mobile Data Management, Mining, and Computing on Social Networks, MobiSocial; Big Data Science and Engineering on E-Commerce, BigEC; Cloud Service Discovery, CloudSD; Mobile Sensing, Mining and Visualization for Human Behavior Inferences, MSMV-HBI; Scalable Data Analytics: Theory and Algorithms, SDA; Algorithms for Large-Scale Information Processing in Knowledge Discovery, ALSIP; Data Mining in Social Networks, SocNet; Data Mining in Biomedical Informatics and Healthcare, DMBIH; and Pattern Mining and Application of Big Data, BigPMA.

Design more effective social work programs with research data from your clinical files! A well-planned research program helps social workers provide consistent, effective services to their clients, but stretched budgets and tight schedules make it difficult to find the resources for data gathering. *Clinical Data-Mining in Practice-Based Research* shows how you can use the existing records already kept by every health-care institution as your primary data source. By analyzing documented clinical information, you can do groundbreaking research and custom-tailor programs to fit the specific needs of your department. *Clinical Data-Mining in Practice-Based Research* draws from the experiences of members of the Mount Sinai Department of Social Work staff. By analyzing case data, these professionals were able to identify biopsychosocial factors that affected social-health outcomes. These practice-based research strategies helped social work professionals see their own work more clearly and helped improve the quality of direct services, interventions, new programs, and case evaluations. *Clinical Data-Mining in Practice-Based Research* shows the benefits of practice-based research, including: enhancing clinical and administrative functions encouraging direct-service workers to become more reflective fostering cooperation between social workers and other staff members designing earlier, easier, and more effective interventions contributing to continuing education for staff members improving patient care and satisfaction The detailed discussions in this book will help you apply these techniques toward improving your own service. *Clinical Data-Mining in Practice-Based Research* offers fresh and exciting ideas that can be applied in small health-care agencies or giant medical centers. It will become a trusted reference for administrators, social workers, researchers, and educators in the field. The Healthcare industry is one of the largest and rapidly developing industries. Over the last few years, healthcare management is changing from disease centered to patient centered. While on one side the analysis of healthcare data plays an important role in healthcare management, but on the other side the privacy of a patient's record must be of equal concern. This book uses a research-oriented approach and focuses on privacy-based healthcare tools and technologies. It offers details on privacy laws with real-life case studies and examples, and addresses privacy issues in newer technologies such as Cloud, Big Data, and IoT. It

discusses the e-health system and preserving its privacy, and the use of wearable technologies for patient monitoring, data streaming and sharing, and use of data analysis to provide various health services. This book is written for research scholars, academicians working in healthcare and data privacy domains, as well as researchers involved with healthcare law, and those working at facilities in security and privacy domains. Students and industry professionals, as well as medical practitioners might also find this book of interest.

This book constitutes the thoroughly refereed post-conference proceedings of five international workshops held in conjunction with PAKDD 2011 in Shenzhen, China, in May 2011: the International Workshop on Behavior Informatics (BI 2011), the Workshop on Quality Issues, Measures of Interestingness and Evaluation of Data Mining Models (QIMIE 2011), the Workshop on Biologically Inspired Techniques for Data Mining (BDM 2011), the Workshop on Advances and Issues in Traditional Chinese Medicine Clinical Data Mining (AI-TCM 2011), and the Second Workshop on Data Mining for Healthcare Management (DMGHM 2011). The book also includes papers from the First PAKDD Doctoral Symposium on Data Mining (DSDM 2011). The 42 papers were carefully reviewed and selected from numerous submissions. The papers cover a wide range of topics discussing emerging techniques in the field of knowledge discovery in databases and their application domains extending to previously unexplored areas such as data mining based on optimization techniques from biological behavior of animals and applications in Traditional Chinese Medicine clinical research and health care management.

Second Workshop on Data Mining for Healthcare Management (DMHM 2011). Big Data Analytics for Intelligent Healthcare Management Academic Press

"This book focuses on the data mining and knowledge management implications that lie within online government"--Provided by publisher. Technology is changing the practice of healthcare by the ways medical information is stored, shared, and accessed. With mobile innovations, new strategies are unfolding to further advance processes and procedures in medical settings. Next-Generation Mobile and Pervasive Healthcare Solutions is an advanced reference source for the latest research on emerging progress and applications within mobile health initiatives and health informatics. Featuring coverage on a broad range of topics and perspectives such as electronic health records (EHR), clinical decision support systems, and medical ontologies, this publication is ideally designed for professionals and researchers seeking scholarly material on the increased use of mobile health applications.

Business and medical professionals rely on large data sets to identify trends or other knowledge that can be gleaned from the collection of it. New technologies concentrate on data's management, but do not facilitate users' extraction of meaningful outcomes. Pattern and Data Analysis in Healthcare Settings investigates the approaches to shift computing from analysis on-demand to knowledge on-demand. By providing innovative tactics to apply data and pattern analysis, these practices are optimized into pragmatic sources of knowledge for healthcare professionals. This publication is an exhaustive source for policy makers, developers, business professionals, healthcare providers, and graduate students concerned with data retrieval and analysis.

At the intersection of computer science and healthcare, data analytics has emerged as a promising tool for solving problems across many healthcare-related disciplines. Supplying a comprehensive overview of recent healthcare analytics research, Healthcare Data Analytics

provides a clear understanding of the analytical techniques currently available to solve healthcare problems. The book details novel techniques for acquiring, handling, retrieving, and making best use of healthcare data. It analyzes recent developments in healthcare computing and discusses emerging technologies that can help improve the health and well-being of patients. Written by prominent researchers and experts working in the healthcare domain, the book sheds light on many of the computational challenges in the field of medical informatics. Each chapter in the book is structured as a "survey-style" article discussing the prominent research issues and the advances made on that research topic. The book is divided into three major categories: Healthcare Data Sources and Basic Analytics - details the various healthcare data sources and analytical techniques used in the processing and analysis of such data Advanced Data Analytics for Healthcare - covers advanced analytical methods, including clinical prediction models, temporal pattern mining methods, and visual analytics Applications and Practical Systems for Healthcare - covers the applications of data analytics to pervasive healthcare, fraud detection, and drug discovery along with systems for medical imaging and decision support Computer scientists are usually not trained in domain-specific medical concepts, whereas medical practitioners and researchers have limited exposure to the data analytics area. The contents of this book will help to bring together these diverse communities by carefully and comprehensively discussing the most relevant contributions from each domain.

Data mining, an interdisciplinary field combining methods from artificial intelligence, machine learning, statistics and database systems, has grown tremendously over the last 20 years and produced core results for applications like business intelligence, spatio-temporal data analysis, bioinformatics, and stream data processing. The fifteen contributors to this volume are successful and well-known data mining scientists and professionals. Although by no means an exhaustive list, all of them have helped the field to gain the reputation and importance it enjoys today, through the many valuable contributions they have made. Mohamed Medhat Gaber has asked them (and many others) to write down their journeys through the data mining field, trying to answer the following questions: 1. What are your motives for conducting research in the data mining field? 2. Describe the milestones of your research in this field. 3. What are your notable success stories? 4. How did you learn from your failures? 5. Have you encountered unexpected results? 6. What are the current research issues and challenges in your area? 7. Describe your research tools and techniques. 8. How would you advise a young researcher to make an impact? 9. What do you predict for the next two years in your area? 10. What are your expectations in the long term? In order to maintain the informal character of their contributions, they were given complete freedom as to how to organize their answers. This narrative presentation style provides PhD students and novices who are eager to find their way to successful research in data mining with valuable insights into career planning. In addition, everyone else interested in the history of computer science may be surprised about the stunning successes and possible failures computer science careers (still) have to offer.

Big Data in medical science – what exactly is that? What are the potentials for healthcare management? Where is Big Data at the moment? Which risk factors need to be kept in mind? What is hype and what is real potential? This book provides an impression of the new possibilities of networked data analysis and "Big Data" – for and within medical science and healthcare management. Big Data is about the collection, storage, search, distribution, statistical analysis and visualization of large amounts of data. This is especially relevant in healthcare management, as the amount of digital information is growing exponentially. An amount of data corresponding to 12 million novels emerges during the time of a single hospital stay. These are dimensions that cannot be dealt with without IT technologies. What can we do with the data that are available today? What will be possible in the next few years? Do we want everything that is possible? Who protects the data

from wrong usage? More importantly, who protects the data from NOT being used? Big Data is the "resource of the 21st century" and might change the world of medical science more than we understand, realize and want at the moment. The core competence of Big Data will be the complete and correct collection, evaluation and interpretation of data. This also makes it possible to estimate the frame conditions and possibilities of the automation of daily (medical) routine. Can Big Data in medical science help to better understand fundamental problems of health and illness, and draw consequences accordingly? Big Data also means the overcoming of sector borders in healthcare management. The specialty of Big Data analysis will be the new quality of the outcomes of the combination of data that were not related before. That is why the editor of the book gives a voice to 30 experts, working in a variety of fields, such as in hospitals, in health insurance or as medical practitioners. The authors show potentials, risks, concrete practical examples, future scenarios, and come up with possible answers for the field of information technology and data privacy.

th I3E 2010 marked the 10 anniversary of the IFIP Conference on e-Business, e- Services, and e-Society, continuing a tradition that was invented in 1998 during the International Conference on Trends in Electronic Commerce, TrEC 1998, in Hamburg (Germany). Three years later the inaugural I3E 2001 conference was held in Zurich (Switzerland). Since then I3E has made its journey through the world: 2002 Lisbon (Portugal), 2003 Sao Paulo (Brazil), 2004 Toulouse (France), 2005 Poznan (Poland), 2006 Turku (Finland), 2007 Wuhan (China), 2008 Tokyo (Japan), and 2009 Nancy (France). I3E 2010 took place in Buenos Aires (Argentina) November 3–5, 2010. Known as "The Pearl" of South America, Buenos Aires is a cosmopolitan, colorful, and vibrant city, surprising its visitors with a vast variety of cultural and artistic performances, European architecture, and the passion for tango, coffee places, and football disc- sions. A cultural reference in Latin America, the city hosts 140 museums, 300 theaters, and 27 public libraries including the National Library. It is also the main educational center in Argentina and home of renowned universities including the U- versity of Buenos Aires, created in 1821. Besides location, the timing of I3E 2010 is th also significant—it coincided with the 200 anniversary celebration of the first local government in Argentina.

Public healthcare generally refers to government funded health-care services available to all members of the population. It is a cost-effective health care system that supports the health care needs of a community or population funded directly by the government. The Public healthcare system in India comprises a set of state-owned health care facilities funded and controlled by the government of India. Some of these are controlled by agencies of the central government while others are controlled by the State governments. The Union Ministry of Health & Family Welfare (MoHFW) facilitates the public healthcare system's overall functioning by supporting the state and local levels which are more directly involved in healthcare service activities. The main objective of MoHFW at the national level is to facilitate effective and efficient administration by the states and the local health authorities. India's public healthcare system follows centralized planning and policy making along with decentralized implementation. At the national level, the govt. persuades the states to work towards specific health objective and priorities. It also provides the necessary technical support for this.

The quest for quality in healthcare has led to attempts to develop models to determine which providers have the highest quality in healthcare, with the best outcomes for patients. Text Mining Techniques for Healthcare Provider Quality Determination: Methods for Rank Comparisons discusses the general practice of defining a patient severity index in order to make risk adjustments to compare patient outcomes across multiple providers with the intent of ranking the providers in terms of quality. This innovative reference source, valuable to medical practitioners, researchers, and academicians, brings together research from across the globe focusing on how severity indices are generally defined when determining the best outcome for patient

Handbook of Statistical Analysis and Data Mining Applications, Second Edition, is a comprehensive professional reference book that guides business analysts, scientists, engineers and researchers, both academic and industrial, through all stages of data analysis, model building and implementation. The handbook helps users discern technical and business problems, understand the strengths and weaknesses of modern data mining algorithms and employ the right statistical methods for practical application. This book is an ideal reference for users who want to address massive and complex datasets with novel statistical approaches and be able to objectively evaluate analyses and solutions. It has clear, intuitive explanations of the principles and tools for solving problems using modern analytic techniques and discusses their application to real problems in ways accessible and beneficial to practitioners across several areas—from science and engineering, to medicine, academia and commerce. Includes input by practitioners for practitioners Includes tutorials in numerous fields of study that provide step-by-step instruction on how to use supplied tools to build models Contains practical advice from successful real-world implementations Brings together, in a single resource, all the information a beginner needs to understand the tools and issues in data mining to build successful data mining solutions Features clear, intuitive explanations of novel analytical tools and techniques, and their practical applications This book covers all the fundamental concepts of Health Management Information Systems (HMIS), provides relevant and current HMIS cases throughout, and touches on emerging technologies. Topics include: information systems from a managerial perspective; roles of cio/cto for healthcare services organizations; HMIS hardware/software concepts; HMIS database concepts; HMIS standards, privacy, and security concepts; HMIS communications and networking concepts; HMIS strategic planning; HMIS investigation & analysis; HMIS design, implementation, and evaluation; e-healthcare information systems; healthcare information systems; use of HMIS emerging technologies and its impact on human health.

This book constitutes the proceedings of the 14th Pacific-Asia Conference, PAKDD 2010, held in Hyderabad, India, in June 2010.

Analyzing data sets has continued to be an invaluable application for numerous industries. By combining different algorithms, technologies, and systems used to extract information from data and solve complex problems, various sectors have reached new heights and have changed our world for the better. The Handbook of Research on Engineering, Business, and Healthcare Applications of Data Science and Analytics is a collection of innovative research on the methods and applications of data analytics. While highlighting topics including artificial intelligence, data security, and information systems, this book is ideally designed for researchers, data analysts, data scientists, healthcare administrators, executives, managers, engineers, IT consultants, academicians, and students interested in the potential of data application technologies.

Healthcare Informatics: Improving Efficiency and Productivity examines the complexities involved in managing resources in our healthcare system and explains how management theory and informatics applications can increase efficiencies in various functional areas of healthcare services. Delving into data and project management and advanced analytics,

It has been rightly said that "people who can't see the value in data mining as a concept either don't have the data or don't have data with integrity." This book has been designed as a basic text book for computer Science and management students at post Graduation and under graduation levels. it explains the technical concepts of this hot area in simple and easily understandable language. It covers the complete syllabus of MCA, B.Tech courses of Punjabi University, Punjab University, Punjab Technical University and many other major universities. This book presents recent work on healthcare management and engineering using artificial intelligence and data mining techniques. Specific topics covered in the contributed chapters include predictive mining, decision support, capacity management, patient flow optimization, image

compression, data clustering, and feature selection. The content will be valuable for researchers and postgraduate students in computer science, information technology, industrial engineering, and applied mathematics.

This book constitutes the thoroughly refereed proceedings of the PAKDD 2012 International Workshops: Third Workshop on Data Mining for Healthcare Management (DMHM 2012), First Workshop on Geospatial Information and Documents (GeoDoc 2012), First Workshop on Multi-view data, High-dimensionality, External Knowledge: Striving for a Unified Approach to Clustering (3Clust 2012), and the Second Doctoral Symposium on Data Mining (DSDM 2012); held in conjunction with the 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2012), in Kuala Lumpur, Malaysia, May/June 2012. The 12 revised papers presented were carefully reviewed and selected from numerous submissions. DMHM 2012 aimed at providing a common platform for the discussion of challenging issues and potential techniques in this emerging field of data mining for health care management; 3Clust 2012 focused on solving emerging problems such as clustering ensembles, semi-supervised clustering, subspace/projective clustering, co-clustering, and multi-view clustering; GeoDoc 2012 highlighted the formalization of geospatial concepts and relationships with a focus on the extraction of geospatial relations in free text datasets to offer to the database community a unified framework for geodata discovery; and DSDM 2012 provided the opportunity for Ph.D. students and junior researchers to discuss their work on data mining foundations, techniques and applications.

What are the possibilities for process mining in hospitals? In this book the authors provide an answer to this question by presenting a healthcare reference model that outlines all the different classes of data that are potentially available for process mining in healthcare and the relationships between them. Subsequently, based on this reference model, they explain the application opportunities for process mining in this domain and discuss the various kinds of analyses that can be performed. They focus on organizational healthcare processes rather than medical treatment processes. The combination of event data and process mining techniques allows them to analyze the operational processes within a hospital based on facts, thus providing a solid basis for managing and improving processes within hospitals. To this end, they also explicitly elaborate on data quality issues that are relevant for the data aspects of the healthcare reference model. This book mainly targets advanced professionals involved in areas related to business process management, business intelligence, data mining, and business process redesign for healthcare systems as well as graduate students specializing in healthcare information systems and process analysis. Healthcare sector is a massive area which deals with data about hospitals, patients, doctors, medical devices and equipment's. The management of large health care data poses a great challenge to the researchers. The usage of data mining and machine learning techniques has revolutionized the healthcare organizations. The field of data mining helps to discover hidden patterns by bringing a set of machine learning tools and techniques. As numerous data mining tools & techniques continue to develop along with the healthcare domain, the applications of data mining in healthcare sector will undoubtedly play a growing role in the world. This study comes out with the application of classification and prediction technique to predict the occurrence of diabetes. The implementation is done using the application of J48 Algorithm, Naive Bayes Algorithm and DCA Approach in WEKA. It analyze the performance of classification techniques on the basis of accuracy."

Various topics of data mining techniques are identified and described throughout, including clustering, association rules, rough set theory, probability theory, neural networks, classification, and fuzzy logic. Each of these techniques is explored with a theoretical introduction and its effectiveness is demonstrated with various chapter examples.

Decision support systems (DSS) are widely touted for their effectiveness in aiding decision making, particularly across a wide and diverse

range of industries including healthcare, business, and engineering applications. The concepts, principles, and theories of enhanced decision making are essential points of research as well as the exact methods, tools, and technologies being implemented in these industries. From both a standpoint of DSS interfaces, namely the design and development of these technologies, along with the implementations, including experiences and utilization of these tools, one can get a better sense of how exactly DSS has changed the face of decision making and management in multi-industry applications. Furthermore, the evaluation of the impact of these technologies is essential in moving forward in the future. The Research Anthology on Decision Support Systems and Decision Management in Healthcare, Business, and Engineering explores how decision support systems have been developed and implemented across diverse industries through perspectives on the technology, the utilizations of these tools, and from a decision management standpoint. The chapters will cover not only the interfaces, implementations, and functionality of these tools, but also the overall impacts they have had on the specific industries mentioned. This book also evaluates the effectiveness along with benefits and challenges of using DSS as well as the outlook for the future. This book is ideal for decision makers, IT consultants and specialists, software developers, design professionals, academicians, policymakers, researchers, professionals, and students interested in how DSS is being used in different industries.

Because of the increased access to high-speed Internet and smart phones, many patients have started to use mobile applications to manage various health needs. These devices and mobile apps are now increasingly used and integrated with telemedicine and telehealth via the medical Internet of Things (IoT). Big Data Management and the Internet of Things for Improved Health Systems is a critical scholarly resource that examines the digital transformation of healthcare. Featuring coverage on a broad range of topics, such as brain computer interface, data reduction techniques, and risk factors, this book is geared towards academicians, practitioners, researchers, and students seeking research on health and well-being data.

Healthcare Data Analytics and Management help readers disseminate cutting-edge research that delivers insights into the analytic tools, opportunities, novel strategies, techniques and challenges for handling big data, data analytics and management in healthcare. As the rapidly expanding and heterogeneous nature of healthcare data poses challenges for big data analytics, this book targets researchers and bioengineers from areas of machine learning, data mining, data management, and healthcare providers, along with clinical researchers and physicians who are interested in the management and analysis of healthcare data. Covers data analysis, management and security concepts and tools in the healthcare domain Highlights electronic medical health records and patient information records Discusses the different techniques to integrate Big data and Internet-of-Things in healthcare, including machine learning and data mining Includes multidisciplinary contributions in relation to healthcare applications and challenges

Presents the latest techniques for analyzing and extracting information from large amounts of data in high-dimensional data spaces The revised and updated third edition of Data Mining contains in one volume an introduction to a systematic approach to the analysis of large data sets that integrates results from disciplines such as statistics, artificial intelligence, data bases, pattern recognition, and computer visualization. Advances in deep learning technology have opened an entire new spectrum of applications. The author—a noted expert on the topic—explains the basic concepts, models, and methodologies that have been developed in recent years. This new edition introduces and expands on many topics, as well as providing revised sections on software tools and data mining applications. Additional changes include an updated list of references for further study, and an extended list of problems and questions that relate to each chapter. This third edition presents new and expanded information that:

- Explores big data and cloud computing
- Examines deep learning
- Includes information on

convolutional neural networks (CNN) • Offers reinforcement learning • Contains semi-supervised learning and S3VM • Reviews model evaluation for unbalanced data Written for graduate students in computer science, computer engineers, and computer information systems professionals, the updated third edition of Data Mining continues to provide an essential guide to the basic principles of the technology and the most recent developments in the field.

Effective healthcare delivery is a vital concern for citizens and communities across the globe. The numerous facets of this industry require constant re-evaluation and optimization of management techniques. The Handbook of Research on Healthcare Administration and Management is a pivotal reference source for the latest scholarly material on emerging strategies and methods for delivering optimal healthcare opportunities and solutions. Highlighting issues relating to decision making, process optimization, and technological applications, this book is ideally designed for policy makers, administrators, students, professionals, and researchers interested in achieving superior healthcare solutions.

This book explores the concepts of data mining and data warehousing, a promising and flourishing frontier in data base systems and new data base applications and is also designed to give a broad, yet in-depth overview of the field of data mining. Data mining is a multidisciplinary field, drawing work from areas including database technology, AI, machine learning, NN, statistics, pattern recognition, knowledge based systems, knowledge acquisition, information retrieval, high performance computing and data visualization. This book is intended for a wide audience of readers who are not necessarily experts in data warehousing and data mining, but are interested in receiving a general introduction to these areas and their many practical applications. Since data mining technology has become a hot topic not only among academic students but also for decision makers, it provides valuable hidden business and scientific intelligence from a large amount of historical data. It is also written for technical managers and executives as well as for technologists interested in learning about data mining. Big Data Analytics for Intelligent Healthcare Management covers both the theory and application of hardware platforms and architectures, the development of software methods, techniques and tools, applications and governance, and adoption strategies for the use of big data in healthcare and clinical research. The book provides the latest research findings on the use of big data analytics with statistical and machine learning techniques that analyze huge amounts of real-time healthcare data. Examines the methodology and requirements for development of big data architecture, big data modeling, big data as a service, big data analytics, and more Discusses big data applications for intelligent healthcare management, such as revenue management and pricing, predictive analytics/forecasting, big data integration for medical data, algorithms and techniques, etc. Covers the development of big data tools, such as data, web and text mining, data mining, optimization, machine learning, cloud in big data with Hadoop, big data in IoT, and more

The healthcare industry produces a constant flow of data, creating a need for deep analysis of databases through data mining tools and techniques resulting in expanded medical research, diagnosis, and treatment. Data Mining and Medical Knowledge Management: Cases and Applications presents case studies on applications of various modern data mining methods in several important areas of medicine, covering classical data mining methods, elaborated approaches related to mining in electroencephalogram and electrocardiogram data, and methods related to mining in genetic data. A premier resource for those involved in data mining and medical knowledge management, this book tackles ethical issues related to cost-sensitive learning in medicine and produces theoretical contributions concerning general problems of data, information, knowledge, and ontologies.

Advancements in data science have created opportunities to sort, manage, and analyze large amounts of data more effectively and

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efficiently. Applying these new technologies to the healthcare industry, which has vast quantities of patient and medical data and is increasingly becoming more data-reliant, is crucial for refining medical practices and patient care. *Data Analytics in Medicine: Concepts, Methodologies, Tools, and Applications* is a vital reference source that examines practical applications of healthcare analytics for improved patient care, resource allocation, and medical performance, as well as for diagnosing, predicting, and identifying at-risk populations. Highlighting a range of topics such as data security and privacy, health informatics, and predictive analytics, this multi-volume book is ideally designed for doctors, hospital administrators, nurses, medical professionals, IT specialists, computer engineers, information technologists, biomedical engineers, data-processing specialists, healthcare practitioners, academicians, and researchers interested in current research on the connections between data analytics in the field of medicine.

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