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WHEN CONSIDERING THE IDEA OF USING MACHINE LEARNING IN HEALTHCARE IT IS A HERCULEAN TASK TO PRESENT THE ENTIRE GAMUT OF INFORMATION IN THE FIELD OF INTELLIGENT SYSTEMS IT IS THEREFORE THE OBJECTIVE OF THIS BOOK TO KEEP THE PRESENTATION NARROW AND INTENSIVE THIS APPROACH IS DISTINCT FROM OTHERS IN THAT IT PRESENTS DETAILED COMPUTER SIMULATIONS FOR ALL MODELS PRESENTED WITH EXPLANATIONS OF THE PROGRAM CODE IT INCLUDES UNIQUE AND DISTINCTIVE CHAPTERS ON DISEASE DIAGNOSIS TELEMEDICINE MEDICAL IMAGING SMART HEALTH MONITORING SOCIAL MEDIA HEALTHCARE AND MACHINE LEARNING FOR COVID 19 THESE CHAPTERS HELP DEVELOP A CLEAR UNDERSTANDING OF THE WORKING OF AN ALGORITHM WHILE STRENGTHENING LOGICAL THINKING IN THIS ENVIRONMENT ANSWERING A SINGLE QUESTION MAY REQUIRE ACCESSING SEVERAL DATA SOURCES AND CALLING ON SOPHISTICATED ANALYSIS TOOLS WHILE DATA INTEGRATION IS A DYNAMIC RESEARCH AREA IN THE DATABASE COMMUNITY THE SPECIFIC NEEDS OF RESEARCH HAVE LED TO THE DEVELOPMENT OF NUMEROUS MIDDLEWARE SYSTEMS THAT PROVIDE SEAMLESS DATA ACCESS IN A RESULT DRIVEN ENVIRONMENT SINCE THIS BOOK IS INTENDED TO BE USEFUL TO A WIDE AUDIENCE STUDENTS RESEARCHERS AND SCIENTISTS FROM BOTH ACADEMIA AND INDUSTRY MAY ALL BENEFIT FROM THIS MATERIAL IT CONTAINS A COMPREHENSIVE DESCRIPTION OF ISSUES FOR HEALTHCARE DATA MANAGEMENT AND AN OVERVIEW OF EXISTING SYSTEMS MAKING IT APPROPRIATE FOR INTRODUCTORY AND INSTRUCTIONAL PURPOSES PREREQUISITES ARE MINIMAL THE READERS ARE EXPECTED TO HAVE BASIC KNOWLEDGE OF MACHINE LEARNING THIS BOOK IS DIVIDED INTO 22 REAL TIME INNOVATIVE CHAPTERS WHICH PROVIDE A VARIETY OF APPLICATION EXAMPLES IN DIFFERENT DOMAINS THESE CHAPTERS ILLUSTRATE WHY TRADITIONAL APPROACHES OFTEN FAIL TO MEET CUSTOMERS NEEDS THE PRESENTED APPROACHES PROVIDE A COMPREHENSIVE OVERVIEW OF CURRENT TECHNOLOGY EACH OF THESE CHAPTERS WHICH ARE WRITTEN BY THE MAIN INVENTORS OF THE PRESENTED SYSTEMS SPECIFIES REQUIREMENTS AND PROVIDES A DESCRIPTION OF BOTH THE CHOSEN APPROACH AND ITS IMPLEMENTATION BECAUSE OF THE SELF CONTAINED NATURE OF THESE CHAPTERS THEY MAY BE READ IN ANY ORDER EACH OF THE CHAPTERS USE VARIOUS TECHNICAL TERMS WHICH INVOLVE EXPERTISE IN MACHINE LEARNING AND COMPUTER SCIENCE THIS BOOK INTRODUCES THE DEVELOPMENT AND APPLICATION OF GAME TECHNOLOGIES FOR HEALTH RELATED SERIOUS GAMES PROVIDING CUTTING EDGE RESEARCH FROM ACADEMIA AND INDUSTRY INFORMING READERS ABOUT THE CURRENT AND FUTURE ADVANCES IN THE AREA ACADEMIC PAPER FROM THE YEAR 2024 IN THE SUBJECT ENGINEERING COMPUTER ENGINEERING LANGUAGE ENGLISH ABSTRACT THIS REVIEW PAPER PROVIDES AN OVERVIEW OF THE INTERNET OF THINGS IOT IN HEALTHCARE FOCUSING ON ITS APPLICATIONS AND CHALLENGES IOT HAS TRANSFORMED HEALTHCARE THROUGH THE INTRODUCTION OF REMOTE PATIENT MONITORING WEARABLES TELEMEDICINE AND THE INTERNET OF MEDICAL THINGS IOMT THESE APPLICATIONS OFFER UNPRECEDENTED OPPORTUNITIES FOR IMPROVING PATIENT CARE ENHANCING MEDICAL DIAGNOSTICS AND INCREASING ACCESSIBILITY TO HEALTHCARE SERVICES DESPITE THE NUMEROUS BENEFITS IOT IN HEALTHCARE ALSO FACES SEVERAL CHALLENGES OVERCOMING THESE OBSTACLES IS CRITICAL TO REALIZING THE FULL PROMISE OF IOT IN HEALTHCARE AND ENSURING ITS SAFE AND EFFECTIVE IMPLEMENTATION THIS REVIEW DISCUSSES STRATEGIES AND TECHNOLOGIES TO OVERCOME SECURITY AND PRIVACY ISSUES MANAGE DATA OVERLOAD AND IMPROVE INTERNET CONNECTIVITY ENABLING A BETTER CONNECTED MORE EFFECTIVE HEALTHCARE ENVIRONMENT THIS BOOK ADDRESSES THE DIFFICULT TASK OF MANAGING ADMISSIONS AND WAITING LISTS WHILE ENSURING QUICK AND CONVINCING RESPONSE TO UNANTICIPATED CHANGES OF THE CLINICAL NEEDS IT TACKLES THE LIMITATIONS OF TRADITIONAL SYSTEMS TAKING INTO CONSIDERATION THE DYNAMIC NATURE OF CLINICAL NEEDS SCARCE RESOURCES ALTERNATIVE STRATEGIES AND CUSTOMER SATISFACTION IN AN ENVIRONMENT THAT

IMPOSES UNEXPECTED DEVIATION FROM PLANNED ACTIVITIES PROVIDED BY PUBLISHER APPLICATIONS OF BIG DATA IN HEALTHCARE THEORY AND PRACTICE BEGINS WITH THE BASICS OF BIG DATA ANALYSIS AND INTRODUCES THE TOOLS PROCESSES AND PROCEDURES ASSOCIATED WITH BIG DATA ANALYTICS THE BOOK UNITES HEALTHCARE WITH BIG DATA ANALYSIS AND USES THE ADVANTAGES OF THE LATTER TO SOLVE THE PROBLEMS FACED BY THE FORMER THE AUTHORS PRESENT THE CHALLENGES FACED BY THE HEALTHCARE INDUSTRY INCLUDING CAPTURING STORING SEARCHING SHARING AND ANALYZING DATA THIS BOOK ILLUSTRATES THE CHALLENGES IN THE APPLICATIONS OF BIG DATA AND SUGGESTS WAYS TO OVERCOME THEM WITH A PRIMARY EMPHASIS ON DATA REPOSITORIES CHALLENGES AND CONCEPTS FOR DATA SCIENTISTS ENGINEERS AND CLINICIANS THE APPLICATIONS OF BIG DATA HAVE GROWN TREMENDOUSLY WITHIN THE PAST FEW YEARS AND ITS GROWTH CAN NOT ONLY BE ATTRIBUTED TO ITS COMPETENCE TO HANDLE LARGE DATA STREAMS BUT ALSO TO ITS ABILITIES TO FIND INSIGHTS FROM COMPLEX NOISY HETEROGENEOUS LONGITUDINAL AND VOLUMINOUS DATA THE MAIN OBJECTIVES OF BIG DATA IN THE HEALTHCARE SECTOR IS TO COME UP WITH WAYS TO PROVIDE PERSONALIZED HEALTHCARE TO PATIENTS BY TAKING INTO ACCOUNT THE ENORMOUS AMOUNTS OF ALREADY EXISTING DATA PROVIDES CASE STUDIES THAT ILLUSTRATE THE BUSINESS PROCESSES UNDERLYING THE USE OF BIG DATA AND DEEP LEARNING HEALTH ANALYTICS TO IMPROVE HEALTH CARE DELIVERY SUPPLIES READERS WITH A FOUNDATION FOR FURTHER SPECIALIZED STUDY IN CLINICAL ANALYSIS AND DATA MANAGEMENT INCLUDES LINKS TO WEBSITES VIDEOS ARTICLES AND OTHER ONLINE CONTENT TO EXPAND AND SUPPORT THE PRIMARY LEARNING OBJECTIVES FOR EACH MAJOR SECTION OF THE BOOK MACHINE LEARNING AND DEEP LEARNING IN MEDICAL DATA ANALYTICS AND HEALTHCARE APPLICATIONS INTRODUCES AND EXPLORES A VARIETY OF SCHEMES DESIGNED TO EMPOWER ENHANCE AND REPRESENT MULTI INSTITUTIONAL AND MULTI DISCIPLINARY MACHINE LEARNING ML AND DEEP LEARNING DL RESEARCH IN HEALTHCARE PARADIGMS SERVING AS A UNIQUE COMPENDIUM OF EXISTING AND EMERGING ML DL PARADIGMS FOR THE HEALTHCARE SECTOR THIS BOOK DEMONSTRATES THE DEPTH BREADTH COMPLEXITY AND DIVERSITY OF THIS MULTI DISCIPLINARY AREA IT PROVIDES A COMPREHENSIVE OVERVIEW OF ML DL ALGORITHMS AND EXPLORES THE RELATED USE CASES IN ENTERPRISES SUCH AS COMPUTER AIDED MEDICAL DIAGNOSTICS DRUG DISCOVERY AND DEVELOPMENT MEDICAL IMAGING AUTOMATION ROBOTIC SURGERY ELECTRONIC SMART RECORDS CREATION OUTBREAK PREDICTION MEDICAL IMAGE ANALYSIS AND RADIATION TREATMENTS THIS BOOK AIMS TO ENDOW DIFFERENT COMMUNITIES WITH THE INNOVATIVE ADVANCES IN THEORY ANALYTICAL RESULTS CASE STUDIES NUMERICAL SIMULATION MODELING AND COMPUTATIONAL STRUCTURING IN THE FIELD OF ML DL MODELS FOR HEALTHCARE APPLICATIONS IT WILL REVEAL DIFFERENT DIMENSIONS OF ML DL APPLICATIONS AND WILL ILLUSTRATE THEIR USE IN THE SOLUTION OF ASSORTED REAL WORLD BIOMEDICAL AND HEALTHCARE PROBLEMS FEATURES COVERS THE FUNDAMENTALS OF ML AND DL IN THE CONTEXT OF HEALTHCARE APPLICATIONS DISCUSSES VARIOUS DATA COLLECTION APPROACHES FROM VARIOUS SOURCES AND HOW TO USE THEM IN ML DL MODELS INTEGRATES SEVERAL ASPECTS OF AI BASED COMPUTATIONAL INTELLIGENCE SUCH AS ML AND DL FROM DIVERSIFIED PERSPECTIVES WHICH DESCRIBE RECENT RESEARCH TRENDS AND ADVANCED TOPICS IN THE FIELD EXPLORES THE CURRENT AND FUTURE IMPACTS OF PANDEMICS AND RISK MITIGATION IN HEALTHCARE WITH ADVANCED ANALYTICS EMPHASIZES FEATURE SELECTION AS AN IMPORTANT STEP IN ANY ACCURATE MODEL SIMULATION WHERE ML DL METHODS ARE USED TO HELP TRAIN THE SYSTEM AND EXTRACT THE POSITIVE SOLUTION IMPLICITLY THIS BOOK IS A VALUABLE SOURCE OF INFORMATION FOR RESEARCHERS SCIENTISTS HEALTHCARE PROFESSIONALS PROGRAMMERS AND GRADUATE LEVEL STUDENTS INTERESTED IN UNDERSTANDING THE APPLICATIONS OF ML DL IN HEALTHCARE SCENARIOS DR OM PRAKASH JENA IS AN ASSISTANT PROFESSOR IN THE DEPARTMENT OF COMPUTER SCIENCE RAVENSHAW UNIVERSITY CUTTACK ODISHA INDIA DR BHARAT BHUSHAN IS AN ASSISTANT PROFESSOR OF DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING CSE AT THE SCHOOL OF ENGINEERING AND TECHNOLOGY SHARDA UNIVERSITY GREATER NOIDA INDIA DR UTKU KOSE IS AN ASSOCIATE PROFESSOR IN SULEYMAN DEMIREL UNIVERSITY TURKEY INFORMATICS AND TECHNOLOGY HAVE BECOME AN INTRINSIC PART OF HEALTHCARE MANAGEMENT IN

RECENT YEARS IT IS ALMOST IMPOSSIBLE TO IMAGINE A MODERN HEALTHCARE SYSTEM WITHOUT THEM THIS BOOK PRESENTS THE PROCEEDINGS OF THE 14TH ANNUAL INTERNATIONAL CONFERENCE ON INFORMATICS MANAGEMENT AND TECHNOLOGY IN HEALTHCARE ICIMTH HELD IN ATHENS GREECE IN JULY 2016 THE CONFERENCE TREATS THE FIELD OF BIOMEDICAL INFORMATICS IN A VERY BROAD FRAMEWORK AND THE 68 FULL PAPERS INCLUDED HERE EXAMINE THE RESEARCH AND APPLICATIONS OUTCOMES OF INFORMATICS FROM CELL TO POPULATION INCLUDING A NUMBER OF TECHNOLOGIES SUCH AS IMAGING SENSORS MOBILE COMMUNICATIONS BIOMEDICAL EQUIPMENT AND MANAGEMENT AS WELL AS LEGAL AND SOCIETAL ISSUES RELATED TO THE APPLICATION OF HEALTH INFORMATICS THE BOOK IS DIVIDED INTO SECTIONS BIOMEDICAL TECHNOLOGY CLINICAL INFORMATICS E LEARNING AND EDUCATION FORMALISATION OF KNOWLEDGE ONTOLOGIES CLINICAL GUIDELINES AND STANDARDS OF HEALTHCARE HEALTH INFORMATICS HEALTHCARE MANAGEMENT AND PUBLIC HEALTH MHEALTH AND TELEMEDICINE AND SOCIAL MEDIA AND HEALTH ALSO INCLUDED ARE TWO KEYNOTE SPEECHES COVERING A WIDE SPECTRUM OF APPLICATIONS THE BOOK WILL BE OF INTEREST TO ALL THOSE WORKING IN THE DESIGN MANAGEMENT AND DELIVERY OF HEALTHCARE SERVICES WHOSE WORK INVOLVES THE DEVELOPMENT OR USE OF BIOMEDICAL INFORMATICS THIS IS THE EBOOK VERSION OF THE PRINT TITLE THE EBOOK EDITION DOES NOT PROVIDE ACCESS TO THE CONTENT OF THE CD ROMS THAT ACCOMPANIES THE PRINT BOOK BRINGING THE POWER OF VIRTUAL INSTRUMENTATION TO THE BIOMEDICAL COMMUNITY APPLICATIONS ACROSS DIVERSE MEDICAL SPECIALTIES DETAILED DESIGN GUIDES FOR LABVIEW AND BIOBENCH APPLICATIONS HANDS ON PROBLEM SOLVING THROUGHOUT THE BOOK LABORATORY CLINICAL AND HEALTHCARE APPLICATIONS NUMEROUS VI S WITH SOURCE CODE PLUS SEVERAL DEMOS ARE AVAILABLE ON THE BOOK S WEB SITE VIRTUAL INSTRUMENTATION ALLOWS MEDICAL RESEARCHERS AND PRACTITIONERS TO COMBINE THE TRADITIONAL DIAGNOSTIC TOOLS WITH ADVANCED TECHNOLOGIES SUCH AS DATABASES ACTIVE X AND THE INTERNET IN BOTH LABORATORY AND CLINICAL ENVIRONMENTS USERS CAN INTERACT WITH A WEALTH OF DISPARATE SYSTEMS FACILITATING BETTER FASTER AND MORE INFORMED DECISION MAKING VIRTUAL BIO INSTRUMENTATION BIOMEDICAL CLINICAL AND HEALTHCARE APPLICATIONS IN LABVIEW IS THE FIRST BOOK OF ITS KIND TO APPLY VI TECHNOLOGY TO THE BIOMEDICAL FIELD HANDS ON PROBLEMS THROUGHOUT THE BOOK DEMONSTRATE IMMEDIATE PRACTICAL USES EXAMPLES COVER A VARIETY OF MEDICAL SPECIALTIES DETAILED DESIGN INSTRUCTIONS GIVE THE INSIDE VIEW OF LABVIEW AND BIOBENCH APPLICATIONS BOTH STUDENTS AND PRACTICING PROFESSIONALS WILL APPRECIATE THE PRACTICAL APPLICATIONS OFFERED FOR MODELING FUNDAMENTAL PHYSIOLOGY ADVANCED SYSTEMS ANALYSIS MEDICAL DEVICE DEVELOPMENT AND TESTING AND EVEN HOSPITAL MANAGEMENT AND CLINICAL ENGINEERING SCENARIOS THIS BOOK BRINGS TOGETHER LATEST APPLICATIONS AND STATE OF THE ART DEVELOPMENTS IN HEALTHCARE SECTOR USING BLOCKCHAIN TECHNOLOGY IT EXPLAINS HOW BLOCKCHAIN CAN ENHANCE SECURITY PRIVACY INTEROPERABILITY DATA ACCESSIBILITY INCLUDING AI BLOCKCHAINS FOR MEDICAL IMAGING TO SUPPLY CHAIN MANAGEMENT AND CENTRALIZED MANAGEMENT ALONGSIDE THE DLT POLYMERIC BIOMATERIALS FOR HEALTHCARE APPLICATIONS DETAILS A BROAD RANGE OF POLYMERIC BIOMATERIALS METHODS OF SYNTHESIS AND PREPARATION AND THEIR VARIOUS APPLICATIONS IN HEALTHCARE AND BIOMEDICINE THE BOOK PROVIDES A FUNDAMENTAL OVERVIEW OF POLYMERS AND PROCESSING TECHNOLOGIES TO ALLOW CLINICAL SCIENTISTS TO EXPLORE THE USE OF THESE POLYMERS IN ALTERNATIVE APPLICATIONS A WIDE VARIETY OF HEALTHCARE APPLICATIONS ARE COVERED INCLUDING TREATMENT FOR AUTOIMMUNE DISEASES AND BACTERIAL INFECTIONS TISSUE ENGINEERING GENE DELIVERY WOUND DRESSING AND MORE THE BOOK PROVIDES A CORE INTRODUCTORY TEXT FOR CLINICAL AND MATERIALS SCIENTISTS NEW TO THE AREA OF POLYMERIC BIOMATERIALS THIS BOOK WILL PROVE USEFUL TO ACADEMICS AND RESEARCHERS IN MATERIALS SCIENCE BIOMEDICAL ENGINEERING CLINICAL SCIENCE AND PHARMACEUTICAL SCIENCE COVERS A BROAD RANGE OF POLYMERIC BIOMATERIALS INCLUDING CHITOSAN ALGINATE CELLULOSE COLLAGEN SYNTHETIC CONJUGATES AND MORE DETAILS A WIDE VARIETY OF HEALTHCARE APPLICATIONS FOR POLYMERIC BIOMATERIALS SUCH AS ORTHOPEDIC ENGINEERING ANTIBIOTICS TARGETED DRUG DELIVERY AND MORE PROVIDES A DETAILED OVERVIEW OF POLYMER

PROCESSING TECHNOLOGIES AND STERILIZATION CONSIDERATIONS IN TODAY S CHALLENGING HEALTH CARE ENVIRONMENT HEALTH CARE ORGANIZATIONS ARE FACED WITH IMPROVING PATIENT OUTCOMES REDESIGNING BUSINESS PROCESSES AND EXECUTING QUALITY AND RISK MANAGEMENT INITIATIVES HEALTH CARE QUALITY MANAGEMENT OFFERS AN INTRODUCTION TO THE FIELD AND PRACTICE OF QUALITY MANAGEMENT AND REVEALS THE BEST PRACTICES AND STRATEGIES HEALTH CARE ORGANIZATIONS CAN ADOPT TO IMPROVE PATIENT OUTCOMES AND PROGRAM QUALITY FILLED WITH ILLUSTRATIVE CASE STUDIES THAT SHOW HOW BUSINESS PROCESSES CAN BE RESTRUCTURED TO ACHIEVE IMPROVEMENTS IN QUALITY RISK REDUCTION AND OTHER KEY BUSINESS RESULTS AND OUTCOMES CLEARLY DEMONSTRATES HOW TO EFFECTIVELY USE PROCESS ANALYSIS TOOLS TO IDENTIFY ISSUES AND CAUSES SELECT CORRECTIVE ACTIONS AND MONITOR IMPLEMENTED SOLUTIONS INCLUDES VITAL INFORMATION ON THE USE OF STATISTICAL PROCESS CONTROL TO MONITOR SYSTEM PERFORMANCE VARIABLES AND OUTCOMES ATTRIBUTES ALSO CONTAINS MULTIPLE DATA SETS THAT CAN BE USED TO PRACTICE THE SKILLS AND TOOLS DISCUSSED AND REVIEWS EXAMPLES OF WHERE AND HOW THE TOOLS HAVE BEEN APPLIED IN HEALTH CARE PROVIDES INFORMATION ON ROOT CAUSE ANALYSIS AND FAILURE MODE EFFECTS ANALYSIS AND OFFERS AS DISCUSSION THE CLINICAL TOOLS AND APPLICATIONS THAT ARE USED TO IMPROVE PATIENT CARE BY EMPHASIZING THE TOOLS OF STATISTICS AND INFORMATION TECHNOLOGY THIS BOOK TEACHES FUTURE HEALTH CARE PROFESSIONALS HOW TO IDENTIFY OPPORTUNITIES FOR QUALITY IMPROVEMENT AND USE THE TOOLS TO MAKE THOSE IMPROVEMENTS AIOT ARTIFICIAL INTELLIGENCE OF THINGS AND BIG DATA ANALYTICS ARE CATALYZING A HEALTHCARE REVOLUTION THIS BOOK IS AN ACCESSIBLE VOLUME THAT SUMMARIZES THE INFORMATION AVAILABLE IN THIS BOOK RESEARCHERS EXPLORE HOW AIOT AND BIG DATA CAN SEAMLESSLY INTEGRATE INTO HEALTHCARE ENHANCING MEDICAL SERVICES AND DEVICES WHILE ADHERING TO ESTABLISHED PROTOCOLS THE BOOK DEMONSTRATES THE CRUCIAL ROLE OF THESE TECHNOLOGIES DURING HEALTHCARE CRISES LIKE THE COVID 19 PANDEMIC IT PRESENTS NOVEL SOLUTIONS AND COMPUTATIONAL TECHNIQUES POWERED BY AIOT MACHINE LEARNING AND DEEP LEARNING PROVIDING A NEW FRONTIER IN HEALTHCARE PROBLEM SOLVING KEY FEATURES REAL LIFE ILLUSTRATIONS REAL WORLD EXAMPLES SHOWCASE AIOT AND BIG DATA IN ACTION HIGHLIGHTING THEIR IMPACT IN HEALTHCARE COMPREHENSIVE EXPLORATION THE BOOK OFFERS A THOROUGH EXAMINATION OF AIOT BIG DATA AND THEIR HARMONIOUS SYNERGY WITHIN THE HEALTHCARE LANDSCAPE VISUAL AIDS COMPLEX CONCEPTS BECOME APPROACHABLE THROUGH DIAGRAMS FLOWCHARTS AND INFOGRAPHICS MAKING TECHNICAL PROCESSES AND SYSTEM DESIGNS MORE DIGESTIBLE ETHICAL INSIGHTS DELVING INTO THE ETHICAL DIMENSIONS OF AIOT AND BIG DATA IT ADDRESSES CONCERNS LIKE DATA BIAS PATIENT CONSENT AND TRANSPARENCY IN HEALTHCARE FORWARD LOOKING DISCOURSE THE BOOK ENGAGES WITH EMERGING TRENDS POTENTIAL INNOVATIONS AND THE FUTURE DIRECTION OF AIOT AND BIG DATA MAKING IT A COMPASS FOR HEALTHCARE TRANSFORMATION RESEARCHERS WHETHER FROM ACADEMIA INDUSTRY OR RESEARCH AND DEVELOPMENT ORGANIZATIONS INTERESTED IN AIOT BIG DATA ARTIFICIAL INTELLIGENCE AND HEALTHCARE OPTIMIZATION WILL FIND THIS BOOK INFORMATIVE IT ALSO SERVES AS AN UPDATE FOR TECH ENTHUSIASTS WHO WANT TO EXPLORE THE FUTURE OF HEALTHCARE POWERED BY AI AND DATA THIS REFERENCE SET PROVIDES A COMPLETE UNDERSTANDING OF THE DEVELOPMENT OF APPLICATIONS AND CONCEPTS IN CLINICAL PATIENT AND HOSPITAL INFORMATION SYSTEMS PROVIDED BY PUBLISHER THIS NEW VOLUME DISCUSSES THE APPLICATIONS AND CHALLENGES OF DEEP LEARNING AND THE INTERNET OF THINGS FOR APPLICATIONS IN HEALTHCARE IT DESCRIBES DEEP LEARNING TECHNIQUES IN CONJUNCTION WITH IOT USED BY PRACTITIONERS AND RESEARCHERS WORLDWIDE THE AUTHORS EXPLORE THE CONVERGENCE OF IOT AND DEEP LEARNING TO ENABLE THINGS TO COMMUNICATE SHARE INFORMATION AND COORDINATE DECISIONS THE BOOK INCLUDES DEEP FEEDFORWARD NETWORKS REGULARIZATION OPTIMIZATION ALGORITHMS CONVOLUTIONAL NETWORKS SEQUENCE MODELING AND PRACTICAL METHODOLOGY CHAPTERS LOOK AT ASSISTIVE DEVICES IN HEALTHCARE ALERTING AND DETECTION DEVICES ENERGY EFFICIENCY IN USING IOT DATA MINING FOR GATHERING HEALTH INFORMATION FOR INDIVIDUALS WITH AUTISM IOT FOR MOBILE APPLICATIONS AND MORE THE TEXT

ALSO OFFERS MATHEMATICAL AND CONCEPTUAL BACKGROUND THAT PRESENTS THE LATEST TECHNOLOGY AS WELL AS A SELECTION OF CASE STUDIES ARTIFICIAL INTELLIGENCE AI AND MACHINE LEARNING ML TECHNIQUES PLAY AN IMPORTANT ROLE IN OUR DAILY LIVES BY ENHANCING PREDICTIONS AND DECISION MAKING FOR THE PUBLIC IN SEVERAL FIELDS SUCH AS FINANCIAL SERVICES REAL ESTATE BUSINESS CONSUMER GOODS SOCIAL MEDIA ETC DESPITE SEVERAL STUDIES THAT HAVE PROVED THE EFFICACY OF AI ML TOOLS IN PROVIDING IMPROVED HEALTHCARE SOLUTIONS IT HAS NOT GAINED THE TRUST OF HEALTH CARE PRACTITIONERS AND MEDICAL SCIENTISTS THIS IS DUE TO POOR REPORTING OF THE TECHNOLOGY VARIABILITY IN MEDICAL DATA SMALL DATASETS AND LACK OF STANDARD GUIDELINES FOR APPLICATION OF AI THEREFORE THE DEVELOPMENT OF NEW AI ML TOOLS FOR VARIOUS DOMAINS OF MEDICINE IS AN ONGOING FIELD OF RESEARCH MACHINE LEARNING IN HEALTHCARE FUNDAMENTALS AND RECENT APPLICATIONS DISCUSSES HOW TO BUILD VARIOUS ML ALGORITHMS AND HOW THEY CAN BE APPLIED TO IMPROVE HEALTHCARE SYSTEMS HEALTHCARE APPLICATIONS OF AI ARE INNUMERABLE MEDICAL DATA ANALYSIS EARLY DETECTION AND DIAGNOSIS OF DISEASE PROVIDING OBJECTIVE BASED EVIDENCE TO REDUCE HUMAN ERRORS CURTAILING INTER AND INTRA OBSERVER ERRORS RISK IDENTIFICATION AND INTERVENTIONS FOR HEALTHCARE MANAGEMENT REAL TIME HEALTH MONITORING ASSISTING CLINICIANS AND PATIENTS FOR SELECTING APPROPRIATE MEDICATIONS AND EVALUATING DRUG RESPONSES EXTENSIVE DEMONSTRATIONS AND DISCUSSION ON THE VARIOUS PRINCIPLES OF MACHINE LEARNING AND ITS APPLICATION IN HEALTHCARE IS PROVIDED ALONG WITH SOLVED EXAMPLES AND EXERCISES THIS TEXT IS IDEAL FOR READERS INTERESTED IN MACHINE LEARNING WITHOUT ANY BACKGROUND KNOWLEDGE AND LOOKING TO IMPLEMENT MACHINE LEARNING MODELS FOR HEALTHCARE SYSTEMS BLOCKCHAIN IS NEW AGE TECHNOLOGY USED TO TRACK EVERY TRANSACTION USING CRYPTOCURRENCY ACROSS SERVERS LINKED IN A PEER TO PEER NETWORK ENABLING TRANSACTIONS TO BE SECURE TRANSPARENT AND RELIABLE RETAINING AN EFFICIENT SECURE AND PATIENT CENTRIC HEALTHCARE INDUSTRY HAS NEVER BEEN SO IMPORTANT ESPECIALLY DUE TO THE DAMAGING EFFECTS OF THE COVID 19 PANDEMIC THE APPLICABILITY OF BLOCKCHAIN IN THE HEALTHCARE DOMAIN CAN BE SEEN AS A REMARKABLE OPPORTUNITY FOR RESEARCHERS AND SCIENTISTS TO SOLVE REAL WORLD PROBLEMS THIS BOOK FOCUSES ON THE FUNDAMENTALS OF BLOCKCHAIN TECHNOLOGY ALONG WITH THE METHODS OF ITS INTEGRATION WITH THE HEALTHCARE INDUSTRY IT ALSO PROVIDES AN ENHANCED UNDERSTANDING OF BLOCKCHAIN TECHNOLOGY AI AND IOT ACROSS THE VARIOUS APPLICATION AREAS OF THE HEALTHCARE INDUSTRY FURTHERMORE THROUGHOUT THE BOOK AREAS OF RELEVANT APPLICATIONS SUCH AS PATIENT DATA PRIVACY PROTECTION PHARMACEUTICAL SUPPLY CHAINS AND GENOMICS ARE DISCUSSED THIS BOOK PROVIDES A PROFICIENT GUIDE ON THE RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE AI AND HEALTHCARE AND HOW AI IS CHANGING ALL ASPECTS OF THE HEALTHCARE INDUSTRY IT ALSO COVERS HOW DEEP LEARNING WILL HELP IN DIAGNOSIS AND THE PREDICTION OF DISEASE SPREAD THE EDITORS PRESENT A COMPREHENSIVE REVIEW OF RESEARCH APPLYING DEEP LEARNING IN HEALTH INFORMATICS IN THE FIELDS OF MEDICAL IMAGING ELECTRONIC HEALTH RECORDS GENOMICS AND SENSING AND HIGHLIGHTS VARIOUS CHALLENGES IN APPLYING DEEP LEARNING IN HEALTH CARE THIS BOOK ALSO INCLUDES APPLICATIONS AND CASE STUDIES ACROSS ALL AREAS OF AI IN HEALTHCARE DATA THE EDITORS ALSO AIM TO PROVIDE NEW THEORIES TECHNIQUES DEVELOPMENTS AND APPLICATIONS OF DEEP LEARNING AND TO SOLVE EMERGING PROBLEMS IN HEALTHCARE AND OTHER DOMAINS THIS BOOK IS INTENDED FOR COMPUTER SCIENTISTS BIOMEDICAL ENGINEERS AND HEALTHCARE PROFESSIONALS RESEARCHING AND DEVELOPING DEEP LEARNING TECHNIQUES IN SHORT THE VOLUME DISCUSSES THE RELATIONSHIP BETWEEN AI AND HEALTHCARE AND HOW AI IS CHANGING THE HEALTH CARE INDUSTRY CONSIDERS USES OF DEEP LEARNING IN DIAGNOSIS AND PREDICTION OF DISEASE SPREAD PRESENTS A COMPREHENSIVE REVIEW OF RESEARCH APPLYING DEEP LEARNING IN HEALTH INFORMATICS ACROSS MULTIPLE FIELDS HIGHLIGHTS CHALLENGES IN APPLYING DEEP LEARNING IN THE FIELD PROMOTES RESEARCH IN DDEEP LLEARNING APPLICATION IN UNDERSTANDING THE BIOMEDICAL PROCESS DR M A JABBAR IS A PROFESSOR AND HEAD OF THE DEPARTMENT AI ML VARDHAMAN COLLEGE OF ENGINEERING HYDERABAD TELANGANA INDIA PROF DR AJITH ABRAHAM IS THE

DIRECTOR OF MACHINE INTELLIGENCE RESEARCH LABS MIR LABS AUBURN WASHINGTON USA DR ONUR DOGAN IS AN ASSISTANT PROFESSOR AT ? ZMIR BAK? R? AY UNIVERSITY TURKEY PROF DR ANA MADUREIRA IS THE DIRECTOR OF THE INTERDISCIPLINARY STUDIES RESEARCH CENTER AT INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO ISEP PORTUGAL DR SANJU TIWARI IS A SENIOR RESEARCHER AT UNIVERSIDAD AUTONOMA DE TAMAULIPAS MEXICO THIS BOOK PROVIDES A PRACTICALLY APPLICABLE GUIDE TO DESIGNING EVIDENCE BASED MEDICAL APPS AND MHEALTH INTERVENTIONS IT FEATURES DETAILED GUIDANCE AND CASE STUDIES WHERE APPLICABLE ON THE BEST PRACTICES AND AVAILABLE TECHNIQUES FROM BOTH TECHNOLOGICAL PLATFORM TECHNOLOGIES TOOLKITS SENSORS AND RESEARCH PERSPECTIVES THIS APPROACH ENABLES THE READER TO DEVELOP A DEEP UNDERSTANDING OF HOW TO COLLECT THE APPROPRIATE DATA AND WORK WITH USERS TO BUILD A USER FRIENDLY APP FOR THEIR TARGET AUDIENCE INFORMATION ON HOW RESEARCHERS AND DESIGNERS CAN COMMUNICATE THEIR INTENTIONS WITH A VARIETY OF STAKEHOLDERS INCLUDING MEDICAL PRACTITIONERS DEVELOPERS AND RESEARCHERS TO ENSURE THE BEST POSSIBLE DECISIONS ARE MADE DURING THE DEVELOPMENT PROCESS TO PRODUCE AN APP OF OPTIMAL QUALITY THAT ALSO CONSIDERS USABILITY DEVELOPING MEDICAL APPS AND MHEALTH INTERVENTIONS COMPREHENSIVELY COVERS THE DEVELOPMENT OF MEDICAL AND HEALTH APPS FOR RESEARCHERS INFORMATICIANS AND PHYSICIANS AND IS A VALUABLE RESOURCE FOR THE EXPERIENCED PROFESSIONAL AND TRAINEE SEEKING A TEXT ON HOW TO DEVELOP USER FRIENDLY MEDICAL APPS THIS BOOK DISCUSSES THE APPLICATIONS CHALLENGES AND FUTURE TRENDS OF MACHINE LEARNING IN MEDICAL DOMAIN INCLUDING BOTH BASIC AND ADVANCED TOPICS THE BOOK PRESENTS HOW MACHINE LEARNING IS HELPFUL IN SMOOTH CONDUCTION OF ADMINISTRATIVE PROCESSES IN HOSPITALS IN TREATING INFECTIOUS DISEASES AND IN PERSONALIZED MEDICAL TREATMENTS THE AUTHORS SHOW HOW MACHINE LEARNING CAN ALSO HELP MAKE FAST AND MORE ACCURATE DISEASE DIAGNOSES EASILY IDENTIFY PATIENTS HELP IN NEW TYPES OF THERAPIES OR TREATMENTS MODEL SMALL MOLECULE DRUGS IN PHARMACEUTICAL SECTOR AND HELP WITH INNOVATIONS VIA INTEGRATED TECHNOLOGIES SUCH AS ARTIFICIAL INTELLIGENCE AS WELL AS DEEP LEARNING THE AUTHORS SHOW HOW MACHINE LEARNING ALSO IMPROVES THE PHYSICIAN S AND DOCTOR S MEDICAL CAPABILITIES TO BETTER DIAGNOSIS THEIR PATIENTS THIS BOOK ILLUSTRATES ADVANCED INNOVATIVE TECHNIQUES FRAMEWORKS CONCEPTS AND METHODOLOGIES OF MACHINE LEARNING THAT WILL ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF THE HEALTHCARE SYSTEM PROVIDES RESEARCHERS IN MACHINE AND DEEP LEARNING WITH A CONCEPTUAL UNDERSTANDING OF VARIOUS METHODOLOGIES OF IMPLEMENTING THE TECHNOLOGIES IN MEDICAL AREAS DISCUSSES THE ROLE MACHINE LEARNING AND IOT PLAY INTO LOCATING DIFFERENT VIRUS AND DISEASES ACROSS THE GLOBE SUCH AS COVID 19 EBOLA AND CERVICAL CANCER INCLUDES FUNDAMENTALS AND ADVANCES IN MACHINE LEARNING IN THE MEDICAL FIELD SUPPORTED BY SIGNIFICANT CASE STUDIES AND PRACTICAL APPLICATIONS AFTER OVER TWO DECADES OF FOCUSED RESEARCH AND DEVELOPMENT SILICON CARBIDE SIC IS NOW READY FOR USE IN THE HEALTHCARE SECTOR AND SILICON CARBIDE TECHNOLOGY FOR ADVANCED HUMAN HEALTHCARE APPLICATIONS PROVIDES AN UP TO DATE ASSESSMENT OF SIC DEVICES FOR LONG TERM HUMAN USE IT EXPLORES A PLETHORA OF APPLICATIONS THAT SIC IS UNIQUELY POSITIONED FOR IN HUMAN HEALTHCARE BEGINNING WITH THE THREE PRIMARY AREAS OF TECHNOLOGY WHICH ARE CLOSEST TO HUMAN TRIALS AND THUS ADOPTION IN THE HEALTHCARE INDUSTRY NEURAL IMPLANTS AND SPINAL CORD REPAIR GRAPHENE AND BIOSENSORS AND FINALLY DEEP TISSUE CANCER THERAPY USING SIC NANOTECHNOLOGY BIOMEDICAL INSPIRED ENGINEERS SCIENTISTS AND HEALTHCARE PROFESSIONALS WILL FIND THIS BOOK TO BE VERY USEFUL IN TWO WAYS I AS A GUIDE TO NEW WAYS TO DESIGN AND DEVELOP ADVANCED MEDICAL DEVICES AND II AS A REFERENCE FOR NEW DEVELOPMENTS IN THE FIELD THE BOOK S INTENT IS TO STIMULATE IDEAS FOR FURTHER TECHNOLOGICAL ENHANCEMENTS AND BREAKTHROUGHS WHICH WILL PROVIDE ALTERNATIVE SOLUTIONS FOR HUMAN HEALTHCARE APPLICATIONS DISCUSSES THE UTILIZATION OF SIC MATERIALS FOR BIOMEDICAL APPLICATIONS PROVIDES A LOGICAL PATHWAY TO UNDERSTAND WHY SIC IS IDEAL FOR SEVERAL CRITICAL APPLICATIONS IN PARTICULAR FOR LONG TERM IMPLANTABLE DEVICES AND WILL SERVE AS A GUIDE TO

NEW WAYS TO DESIGN AND DEVELOP ADVANCED MEDICAL DEVICES SERVES AS A REFERENCE FOR NEW DEVELOPMENTS IN THE FIELD AND AS A TECHNOLOGY RESOURCE FOR MEDICAL DOCTORS AND PRACTITIONERS LOOKING TO IDENTIFY AND IMPLEMENT ADVANCED ENGINEERING SOLUTIONS TO EVERYDAY MEDICAL CHALLENGES THAT CURRENTLY LACK LONG TERM COST EFFECTIVE SOLUTIONS COMPUTATIONAL INTELLIGENCE AND ITS APPLICATIONS IN HEALTHCARE PRESENTS RAPIDLY GROWING APPLICATIONS OF COMPUTATIONAL INTELLIGENCE FOR HEALTHCARE SYSTEMS INCLUDING INTELLIGENT SYNTHETIC CHARACTERS MAN MACHINE INTERFACE MENU GENERATORS USER ACCEPTANCE ANALYSIS PICTURES ARCHIVING AND COMMUNICATION SYSTEMS COMPUTATIONAL INTELLIGENCE IS THE STUDY OF THE DESIGN OF INTELLIGENT AGENTS WHICH ARE SYSTEMS THAT ACT INTELLIGENTLY THEY DO WHAT THEY THINK ARE APPROPRIATE FOR THEIR CIRCUMSTANCES AND GOALS THEY RE FLEXIBLE TO CHANGING ENVIRONMENTS AND GOALS THEY LEARN FROM EXPERIENCE AND THEY MAKE APPROPRIATE CHOICES GIVEN PERCEPTUAL LIMITATIONS AND FINITE COMPUTATION COMPUTATIONAL INTELLIGENCE PARADIGMS OFFER MANY ADVANTAGES IN MAINTAINING AND ENHANCING THE FIELD OF HEALTHCARE PROVIDES COVERAGE OF FUZZY LOGIC NEURAL NETWORKS EVOLUTIONARY COMPUTATION LEARNING THEORY PROBABILISTIC METHODS TELEMEDICINE AND ROBOTICS APPLICATIONS INCLUDES COVERAGE OF ARTIFICIAL INTELLIGENCE AND BIOLOGICAL APPLICATIONS SOFT COMPUTING IMAGE AND SIGNAL PROCESSING AND GENETIC ALGORITHMS PRESENTS THE LATEST DEVELOPMENTS IN COMPUTATIONAL METHODS IN HEALTHCARE BRIDGES THE GAP BETWEEN OBSOLETE LITERATURE AND CURRENT LITERATURE INTERNET OF THINGS IOT APPLICATIONS EMPLOYED FOR HEALTHCARE GENERATE A HUGE AMOUNT OF DATA THAT NEEDS TO BE ANALYZED TO PRODUCE THE EXPECTED REPORTS TO ACCOMPLISH THIS TASK A CLOUD BASED ANALYTICAL SOLUTION IS IDEAL IN ORDER TO GENERATE FASTER REPORTS IN COMPARISON TO THE TRADITIONAL WAY GIVEN THE CURRENT STATE OF THE WORLD IN WHICH EVERY DAY IOT DEVICES ARE DEVELOPED TO PROVIDE HEALTHCARE SOLUTIONS IT IS ESSENTIAL TO CONSIDER THE MECHANISMS USED TO COLLECT AND ANALYZE THE DATA TO PROVIDE THOROUGH REPORTS INTEGRATING AI IN IOT ANALYTICS ON THE CLOUD FOR HEALTHCARE APPLICATIONS APPLIES ARTIFICIAL INTELLIGENCE AI IN EDGE ANALYTICS FOR HEALTHCARE APPLICATIONS ANALYZES THE IMPACT OF TOOLS AND TECHNIQUES IN EDGE ANALYTICS FOR HEALTHCARE AND DISCUSSES SECURITY SOLUTIONS FOR EDGE ANALYTICS IN HEALTHCARE IOT COVERING TOPICS SUCH AS DATA ANALYTICS AND NEXT GENERATION HEALTHCARE SYSTEMS IT IS IDEAL FOR RESEARCHERS ACADEMICIANS TECHNOLOGISTS IT SPECIALISTS DATA SCIENTISTS HEALTHCARE INDUSTRIES IOT DEVELOPERS DATA SECURITY ANALYSTS EDUCATORS AND STUDENTS THIS BOOK PROVIDES A COMPREHENSIVE OVERVIEW OF DEEP LEARNING DL IN MEDICAL AND HEALTHCARE APPLICATIONS INCLUDING THE FUNDAMENTALS AND CURRENT ADVANCES IN MEDICAL IMAGE ANALYSIS STATE OF THE ART DL METHODS FOR MEDICAL IMAGE ANALYSIS AND REAL WORLD DEEP LEARNING BASED CLINICAL COMPUTER AIDED DIAGNOSIS SYSTEMS DEEP LEARNING DL IS ONE OF THE KEY TECHNIQUES OF ARTIFICIAL INTELLIGENCE AI AND TODAY PLAYS AN IMPORTANT ROLE IN NUMEROUS ACADEMIC AND INDUSTRIAL AREAS DL INVOLVES USING A NEURAL NETWORK WITH MANY LAYERS DEEP STRUCTURE BETWEEN INPUT AND OUTPUT AND ITS MAIN ADVANTAGE OF IS THAT IT CAN AUTOMATICALLY LEARN DATA DRIVEN HIGHLY REPRESENTATIVE AND HIERARCHICAL FEATURES AND PERFORM FEATURE EXTRACTION AND CLASSIFICATION ON ONE NETWORK DL CAN BE USED TO MODEL OR SIMULATE AN INTELLIGENT SYSTEM OR PROCESS USING ANNOTATED TRAINING DATA RECENTLY DL HAS BECOME WIDELY USED IN MEDICAL APPLICATIONS SUCH AS ANATOMIC MODELLING TUMOUR DETECTION DISEASE CLASSIFICATION COMPUTER AIDED DIAGNOSIS AND SURGICAL PLANNING THIS BOOK IS INTENDED FOR COMPUTER SCIENCE AND ENGINEERING STUDENTS AND RESEARCHERS MEDICAL PROFESSIONALS AND ANYONE INTERESTED USING DL TECHNIQUES THE COVID 19 EPIDEMIC HAS HELPED TO EXPAND THE FUNCTION OF THE INTERNET OF MEDICAL THINGS IN HEALTHCARE AT AN EXPONENTIAL RATE THIS BOOK OFFERS A COMPREHENSIVE EXPLORATION OF IOMT IN THE POST COVID 19 ERA PROVIDING AN OVERVIEW OF MODERN TECHNOLOGIES USED FOR THE IMPROVEMENT OF HEALTHCARE SUCH AS IOT ARTIFICIAL INTELLIGENCE ROBOTICS BIG DATA AND WEARABLE DEVICES USED IN HEALTHCARE APPLICATIONS WITH A FOCUS ON THE DETECTION AND TREATMENT OF COVID 19 AND RELATED

VIRUSES THE VOLUME PRESENTS THE PRINCIPLES STATE OF THE ART DEVELOPMENTS ARCHITECTURE REAL WORLD APPLICATIONS ACTUAL CASE STUDIES RESULTS OF IOMT EXPERIMENTS AND SENSOR BASED SYSTEMS AND MORE THE CHAPTERS LOOK AT VARIOUS ASPECTS OF ARTIFICIAL INTELLIGENCE IN IOMT BASED TELEMEDICINE HEALTH MONITORING EARLY COVID DETECTION AUTOMATIC INTRAVENOUS FLUIDS FEEDS CHEST X RAY IMAGES DATA COLLECTION FOR DECISION MAKING SECURITY OF HEALTH INFORMATION AND MORE THIS VOLUME PROVIDES AN UNDERSTANDING OF THE REAL APPLICATIONS DEVELOPMENT OF HEALTHCARE SYSTEMS ARCHITECTURAL FRAMEWORKS AND MODERN DESIGN ELEMENTS OF HEALTHCARE SYSTEMS CONVOLUTIONAL NEURAL NETWORKS FOR MEDICAL APPLICATIONS CONSISTS OF RESEARCH INVESTIGATED BY THE AUTHOR CONTAINING STATE OF THE ART KNOWLEDGE AUTHORED BY DR TEOH TEIK TOE IN APPLYING CONVOLUTIONAL NEURAL NETWORKS CNNS TO THE MEDICAL IMAGERY DOMAIN THIS BOOK WILL EXPOSE RESEARCHERS TO VARIOUS APPLICATIONS AND TECHNIQUES APPLIED WITH DEEP LEARNING ON MEDICAL IMAGES AS WELL AS UNIQUE TECHNIQUES TO ENHANCE THE PERFORMANCE OF THESE NETWORKS THROUGH THE VARIOUS CHAPTERS AND TOPICS COVERED THIS BOOK PROVIDES KNOWLEDGE ABOUT THE FUNDAMENTALS OF DEEP LEARNING TO A COMMON READER WHILE ALLOWING A RESEARCH SCHOLAR TO IDENTIFY SOME FUTURISTIC PROBLEM AREAS THE TOPICS COVERED INCLUDE BRAIN TUMOR CLASSIFICATION PNEUMONIA IMAGE CLASSIFICATION WHITE BLOOD CELL CLASSIFICATION SKIN CANCER CLASSIFICATION AND DIABETIC RETINOPATHY DETECTION THE FIRST CHAPTER WILL BEGIN BY INTRODUCING VARIOUS TOPICS USED IN TRAINING CNNS TO HELP READERS WITH COMMON CONCEPTS COVERED ACROSS THE BOOK EACH CHAPTER BEGINS BY PROVIDING INFORMATION ABOUT THE DISEASE ITS IMPLICATIONS TO THE AFFECTED AND HOW THE USE OF CNNS CAN HELP TO TACKLE ISSUES FACED IN HEALTHCARE READERS WOULD BE EXPOSED TO VARIOUS PERFORMANCE ENHANCEMENT TECHNIQUES WHICH HAVE BEEN TRIED AND TESTED SUCCESSFULLY SUCH AS SPECIFIC DATA AUGMENTATIONS AND IMAGE PROCESSING TECHNIQUES UTILIZED TO IMPROVE THE ACCURACY OF THE MODELS THIS BOOK LOOKS AT THE GROWING SEGMENT OF INTERNET OF THINGS TECHNOLOGY IOT KNOWN AS INTERNET OF MEDICAL THINGS IOMT AN AUTOMATED SYSTEM THAT AIDS IN BRIDGING THE GAP BETWEEN ISOLATED AND RURAL COMMUNITIES AND THE CRITICAL HEALTHCARE SERVICES THAT ARE AVAILABLE IN MORE POPULATED AND URBAN AREAS MANY TECHNOLOGICAL ASPECTS OF IOMT ARE STILL BEING RESEARCHED AND DEVELOPED WITH THE OBJECTIVE OF MINIMIZING THE COST AND IMPROVING THE PERFORMANCE OF THE OVERALL HEALTHCARE SYSTEM THIS BOOK FOCUSES ON INNOVATIVE IOMT METHODS AND SOLUTIONS BEING DEVELOPED FOR USE IN THE APPLICATION OF HEALTHCARE SERVICES INCLUDING POST SURGERY CARE VIRTUAL HOME ASSISTANCE SMART REAL TIME PATIENT MONITORING IMPLANTABLE SENSORS AND CAMERAS AND DIAGNOSIS AND TREATMENT PLANNING IT ALSO EXAMINES CRITICAL ISSUES AROUND THE TECHNOLOGY SUCH AS SECURITY VULNERABILITIES IOMT MACHINE LEARNING APPROACHES AND MEDICAL DATA COMPRESSION FOR LOSSLESS DATA TRANSMISSION AND ARCHIVING INTERNET OF MEDICAL THINGS IS A VALUABLE REFERENCE FOR RESEARCHERS STUDENTS AND POSTGRADUATES WORKING IN BIOMEDICAL ELECTRONICS AND COMMUNICATIONS ENGINEERING AS WELL AS PRACTICING HEALTHCARE PROFESSIONALS THIS BOOK HIGHLIGHTS VARIOUS EVOLUTIONARY ALGORITHM TECHNIQUES FOR VARIOUS MEDICAL CONDITIONS AND INTRODUCES MEDICAL APPLICATIONS OF EVOLUTIONARY COMPUTATION FOR REAL TIME DIAGNOSIS EVOLUTIONARY INTELLIGENCE FOR HEALTHCARE APPLICATIONS PRESENTS HOW EVOLUTIONARY INTELLIGENCE CAN BE USED IN SMART HEALTHCARE SYSTEMS INVOLVING BIG DATA ANALYTICS MOBILE HEALTH PERSONALIZED MEDICINE AND CLINICAL TRIAL DATA MANAGEMENT IT FOCUSES ON EMERGING CONCEPTS AND APPROACHES AND HIGHLIGHTS VARIOUS EVOLUTIONARY ALGORITHM TECHNIQUES USED FOR EARLY DISEASE DIAGNOSIS PREDICTION AND PROGNOSIS FOR MEDICAL CONDITIONS THE BOOK ALSO PRESENTS ETHICAL ISSUES AND CHALLENGES THAT CAN OCCUR WITHIN THE HEALTHCARE SYSTEM RESEARCHERS HEALTHCARE PROFESSIONALS DATA SCIENTISTS SYSTEMS ENGINEERS STUDENTS PROGRAMMERS CLINICIANS AND POLICYMAKERS WILL FIND THIS BOOK OF INTEREST TECHNOLOGY CONTINUES TO BENEFIT DIFFERENT ASPECTS OF OUR SOCIETY AS SUCH THE HEALTH AND SOCIAL CARE FIELD HAS BEGUN TO UTILISE THESE ADVANTAGES TOWARDS IMPROVEMENTS IN HEALTH INFORMATICS AND HEALTHCARE APPLICATIONS THIS

PROVIDES THE LATEST AND MOST RELEVANT RESEARCH ON THE UNDERSTANDING EXPANSION AND SOLUTIONS ON TECHNOLOGIES USED FOR IMPROVEMENTS IN THE HEALTH AND SOCIAL CARE FIELD BIG DATA AND THE INTERNET OF THINGS IOT PLAY A VITAL ROLE IN PREDICTION SYSTEMS USED IN BIOLOGICAL AND MEDICAL APPLICATIONS PARTICULARLY FOR RESOLVING ISSUES RELATED TO DISEASE BIOLOGY AT DIFFERENT SCALES MODELLING AND INTEGRATING MEDICAL BIG DATA WITH THE IOT HELPS IN BUILDING EFFECTIVE PREDICTION SYSTEMS FOR AUTOMATIC RECOMMENDATIONS OF DIAGNOSIS AND TREATMENT THE ABILITY TO MINE PROCESS ANALYSE CHARACTERIZE CLASSIFY AND CLUSTER A VARIETY AND WIDE VOLUME OF MEDICAL DATA IS A CHALLENGING TASK THERE IS A GREAT DEMAND FOR THE DESIGN AND DEVELOPMENT OF METHODS DEALING WITH CAPTURING AND AUTOMATICALLY ANALYSING MEDICAL DATA FROM IMAGING SYSTEMS AND IOT SENSORS ADDRESSING ANALYTICAL AND LEGAL ISSUES AND RESEARCH ON INTEGRATION OF BIG DATA ANALYTICS WITH RESPECT TO CLINICAL PRACTICE AND CLINICAL UTILITY ARCHITECTURES AND CLUSTERING TECHNIQUES FOR IOT DATA PROCESSING EFFECTIVE FRAMEWORKS FOR REMOVAL OF MISCLASSIFIED INSTANCES PRACTICALITY OF BIG DATA ANALYTICS METHODOLOGICAL AND TECHNICAL ISSUES POTENTIAL OF HADOOP IN MANAGING HEALTHCARE DATA IS THE NEED OF THE HOUR THIS BOOK INTEGRATES DIFFERENT ASPECTS USED IN THE FIELD OF HEALTHCARE SUCH AS BIG DATA IOT SOFT COMPUTING MACHINE LEARNING AUGMENTED REALITY ORGANS ON CHIP PERSONALIZED DRUGS IMPLANTABLE ELECTRONICS INTEGRATION OF BIO INTERFACES AND WEARABLE SENSORS DEVICES PRACTICAL BODY AREA NETWORK BAN AND ARCHITECTURES OF WEB SYSTEMS KEY FEATURES ADDRESSES VARIOUS APPLICATIONS OF MEDICAL BIG DATA AND INTERNET OF MEDICAL THINGS IN REAL TIME ENVIRONMENT HIGHLIGHTS RECENT INNOVATIONS DESIGNS DEVELOPMENTS AND TOPICS OF INTEREST IN MACHINE LEARNING TECHNIQUES FOR CLASSIFICATION OF MEDICAL DATA PROVIDES BACKGROUND AND SOLUTIONS TO EXISTING CHALLENGES IN MEDICAL BIG DATA AND INTERNET OF MEDICAL THINGS PROVIDES OPTIMIZATION TECHNIQUES AND PROGRAMMING MODELS TO PARALLELIZE THE COMPUTATIONALLY INTENSIVE TASKS IN DATA MINING OF MEDICAL DATA DISCUSSES INTERACTIONS ADVANTAGES LIMITATIONS CHALLENGES AND FUTURE PERSPECTIVES OF IOT BASED REMOTE HEALTHCARE MONITORING SYSTEMS INCLUDES DATA PRIVACY AND SECURITY ANALYSIS OF CRYPTOGRAPHY METHODS FOR THE OF MEDICAL THINGS WOMT PRESENTS CASE STUDIES ON THE NEXT GENERATION MEDICAL CHAIR ELECTRONIC NOSE AND PILL CAM ARE ALSO PRESENTED THE BOOK DETAILS DEEP LEARNING MODELS LIKE ANN RNN LSTM IN MANY INDUSTRIAL SECTORS SUCH AS TRANSPORTATION HEALTHCARE MILITARY AGRICULTURE WITH VALID AND EFFECTIVE RESULTS WHICH WILL HELP RESEARCHERS FIND SOLUTIONS TO THEIR DEEP LEARNING RESEARCH PROBLEMS WE HAVE ENTERED THE ERA OF SMART WORLD DEVICES WHERE ROBOTS OR MACHINES ARE BEING USED IN MOST APPLICATIONS TO SOLVE REAL WORLD PROBLEMS THESE SMART MACHINES DEVICES REDUCE THE BURDEN ON DOCTORS WHICH IN TURN MAKE THEIR LIVES EASIER AND THE LIVES OF THEIR PATIENTS BETTER THEREBY INCREASING PATIENT LONGEVITY WHICH IS THE ULTIMATE GOAL OF COMPUTER VISION THEREFORE THE GOAL IN WRITING THIS BOOK IS TO ATTEMPT TO PROVIDE COMPLETE INFORMATION ON RELIABLE DEEP LEARNING MODELS REQUIRED FOR E HEALTHCARE APPLICATIONS WAYS IN WHICH DEEP LEARNING CAN ENHANCE HEALTHCARE IMAGES OR TEXT DATA FOR MAKING USEFUL DECISIONS ARE DISCUSSED ALSO PRESENTED ARE RELIABLE DEEP LEARNING MODELS SUCH AS NEURAL NETWORKS CONVOLUTIONAL NEURAL NETWORKS BACKPROPAGATION AND RECURRENT NEURAL NETWORKS WHICH ARE INCREASINGLY BEING USED IN MEDICAL IMAGE PROCESSING INCLUDING FOR COLORIZATION OF BLACK AND WHITE X RAY IMAGES AUTOMATIC MACHINE TRANSLATION IMAGES OBJECT CLASSIFICATION IN PHOTOGRAPHS IMAGES CT SCANS CHARACTER OR USEFUL GENERATION ECG IMAGE CAPTION GENERATION ETC HENCE RELIABLE DEEP LEARNING METHODS FOR THE PERCEPTION OR PRODUCTION OF BETTER RESULTS ARE A NECESSITY FOR HIGHLY EFFECTIVE E HEALTHCARE APPLICATIONS CURRENTLY THE MOST DIFFICULT DATA RELATED PROBLEM THAT NEEDS TO BE SOLVED CONCERNS THE RAPID INCREASE OF DATA OCCURRING EACH DAY VIA BILLIONS OF SMART DEVICES TO ADDRESS THE GROWING AMOUNT OF DATA IN HEALTHCARE APPLICATIONS CHALLENGES SUCH AS NOT HAVING STANDARD TOOLS EFFICIENT ALGORITHMS AND A SUFFICIENT NUMBER OF SKILLED DATA

SCIENTISTS NEED TO BE OVERCOME HENCE THERE IS GROWING INTEREST IN INVESTIGATING DEEP LEARNING MODELS AND THEIR USE IN E HEALTHCARE APPLICATIONS AUDIENCE RESEARCHERS IN ARTIFICIAL INTELLIGENCE BIG DATA COMPUTER SCIENCE AND ELECTRONIC ENGINEERING AS WELL AS INDUSTRY ENGINEERS IN TRANSPORTATION HEALTHCARE BIOMEDICINE MILITARY AGRICULTURE THIS BOOK CONTAINS EXAMPLES OF CONVINCING CASES THAT WERE SELECTED FROM ALL OVER EUROPE AND PRESENTED BY EXPERIENCED USERS AND HEALTHCARE DECISION MAKERS THESE EXAMPLES ARE BASED ON SUCCESSFUL CASES OF IMPLEMENTATION OF HEALTH TELEMATICS APPLICATIONS AND SERVICES SUCH AS ELECTRONIC HEALTHCARE RECORDS AND HOSPITAL INFORMATION SYSTEMS SPECIALISED DEPARTMENTAL SYSTEMS EMERGENCY TELEMEDICINE AND REGIONAL HEALTHCARE NETWORKS EXAMPLES OF EXPERIENCES RELATING TO MEDICAL INFORMATICS EDUCATION ARE ALSO INCLUDED SINCE THE EDUCATION IS A CRUCIAL FACTOR IN THE AREA OF USER ACCEPTANCE CASES OF SUCCESSFUL PROMOTION OF GOOD QUALITY APPLICATIONS AND OTHER ISSUES RELATED TO USERS AND TECHNOLOGY ARE INCLUDED IN THE LAST SECTION THE READERS WILL FIND QUALITATIVE AND QUANTITATIVE DESCRIPTIONS OF MANY USEFUL EXPERIENCES OF IMPLEMENTATION AND USE OF HEALTH TELEMATICS SYSTEMS AND SERVICES THE TEXT OF MANY OF THE PAPERS IS VERY RICH IN QUANTITATIVE ANALYSIS AND STATISTICS PROVIDING GOOD SOURCE OF REFERENCE BIG DATA ANALYTICS AND MEDICAL INFORMATION SYSTEMS PRESENTS THE VALUABLE USE OF ARTIFICIAL INTELLIGENCE AND BIG DATA ANALYTICS IN HEALTHCARE AND MEDICAL SCIENCES IT FOCUSES ON THEORIES METHODS AND APPROACHES IN WHICH DATA ANALYTIC TECHNIQUES CAN BE USED TO EXAMINE MEDICAL DATA TO PROVIDE A MEANINGFUL PATTERN FOR CLASSIFICATION DIAGNOSIS TREATMENT AND PREDICTION OF DISEASES THE BOOK DISCUSSES TOPICS SUCH AS THEORIES AND CONCEPTS OF THE FIELD AND HOW BIG MEDICAL DATA MINING TECHNIQUES AND APPLICATIONS CAN BE APPLIED TO CLASSIFICATION DIAGNOSIS TREATMENT AND PREDICTION OF DISEASES IN ADDITION IT COVERS SOCIAL BEHAVIORAL AND MEDICAL FAKE NEWS ANALYTICS TO PREVENT MEDICAL MISINFORMATION AND MYTHS IT IS A VALUABLE RESOURCE FOR GRADUATE STUDENTS RESEARCHERS AND MEMBERS OF BIOMEDICAL FIELD WHO ARE INTERESTED IN LEARNING MORE ABOUT ANALYTIC TOOLS TO SUPPORT THEIR WORK PRESENTS THEORIES METHODS AND APPROACHES IN WHICH DATA ANALYTIC TECHNIQUES ARE USED FOR MEDICAL DATA BRINGS PRACTICAL INFORMATION ON HOW TO USE BIG DATA FOR CLASSIFICATION DIAGNOSIS TREATMENT AND PREDICTION OF DISEASES DISCUSSES SOCIAL BEHAVIORAL AND MEDICAL FAKE NEWS ANALYTICS FOR MEDICAL INFORMATION SYSTEMS NANOTECHNOLOGY IS OPENING UP NEW AVENUES IN ALL SCIENTIFIC AND TECHNOLOGICAL FIELDS AMONG THE NOVEL APPLICATIONS BIOACTIVES AND NUTRACEUTICALS ARE FAST GROWING AREAS OF NANO RESEARCH FOR BETTER HEALTHCARE SOLUTIONS A VARIETY OF NANOFORMULATIONS SUCH AS POLYMERIC NANOPARTICLES NANOCAPSULES NANOEMULSIONS TRANSFEROSOMES AND ETHOSOMES LIPOSOMES LIPOSPHERES AND LIPID POLYMER HYBRID NANOPARTICLES HAVE PROVED VALUABLE IN BIOACTIVE DELIVERY AND FOOD MATERIALS FURTHER NEW HERBAL DRUGS AND NUTRACEUTICALS ARE REPORTED TO HAVE REMARKABLE ADVANTAGES OVER CONVENTIONAL FORMULATIONS OF PLANT ACTIVES AND EXTRACTS INCLUDING ENHANCED SOLUBILITY BIOAVAILABILITY MULTIPLE DRUG DELIVERY GREATER STABILITY SUSTAINED DELIVERY IMPROVED TISSUE MACROPHAGE DISTRIBUTION PROTECTION FROM TOXICITY ENHANCEMENT OF PHARMACOLOGICAL ACTIVITY AND PROTECTION FROM PHYSICAL AND CHEMICAL DEGRADATION THIS BOOK FOCUSES ON THE ADVANCED NANOMATERIALS THAT ARE UTILIZED FOR THE ENCAPSULATION OF NUTRIENTS VITAMIN PHYTOCONSTITUENTS AS WELL AS THEIR OTHER HEALTHCARE BENEFITS IN THE LAST TWO DECADES MACHINE LEARNING HAS BEEN DRAMATICALLY DEVELOPED AND IS STILL EXPERIENCING A FAST AND EVER LASTING CHANGE IN PARADIGM METHODOLOGY APPLICATIONS AND OTHER ASPECTS THIS BOOK OFFERS A COMPENDIUM OF CURRENT AND EMERGING MACHINE LEARNING PARADIGMS IN HEALTHCARE INFORMATICS AND REFLECTS ON THE DIVERSITY AND COMPLEXITY MACHINE LEARNING APPROACHES AND APPLICATIONS APPLIED INTELLIGENCE FOR HEALTHCARE DATA ANALYTICS PRESENTS A VARIETY OF TECHNIQUES DESIGN TO ENHANCE AND EMPOWER MULTI DISCIPLINARY AND MULTI INSTITUTIONAL MACHINE LEARNING RESEARCH IT PROVIDES MANY CASE STUDIES AND A PANORAMIC VIEW OF DATA AND MACHINE LEARNING TECHNIQUES PROVIDING

THE OPPORTUNITY FOR NOVEL INSIGHTS AND DISCOVERIES THE BOOK EXPLORES THE THEORY AND PRACTICAL APPLICATIONS IN HEALTHCARE AND INCLUDES A GUIDED TOUR OF MACHINE LEARNING ALGORITHMS ARCHITECTURE DESIGN ALONG WITH INTERDISCIPLINARY CHALLENGES THIS BOOK IS USEFUL TO RESEARCH SCHOLARS AND STUDENTS INVOLVED IN CRITICAL CONDITION ANALYSIS AND COMPUTATION MODELS DIGITAL HEALTHCARE IS HETEROGENEOUS ALONG THE ENTIRE TREATMENT PATHWAY RANGING FROM MONITORING APPLICATIONS AND ARTIFICIAL INTELLIGENCE BASED DIAGNOSTICS TO SUPPORT FOR VIRTUAL REALITY SURGERY SINCE THE INTRODUCTION OF THE DIGITAL HEALTH ACT IN GERMANY IN EARLY 2020 THERE HAS BEEN A PUSH TOWARD DIGITAL INNOVATIVE SOLUTIONS ESPECIALLY IN THE OUTPATIENT SECTOR THIS BOOK ANALYZES CURRENT DIGITAL HEALTH LAW FROM AN ECONOMIC PERSPECTIVE COMBINING THEORY WITH REAL WORLD APPLICATIONS IT EXAMINES BOTH THE INCENTIVES AND MARKET ACCESS PATHWAYS FOR DIGITAL SOLUTIONS AND THE PRICE EFFECTS BROUGHT ABOUT BY THE NEW REGULATORY FRAMEWORK IN GERMANY FURTHER IT DISCUSSES THE DIFFICULTIES IN PRICING DUE TO THE MONOPOLISTIC BFARM REGISTER AND NEGOTIATIONS WITH THE ASSOCIATION OF ALL GERMAN HEALTH INSURANCE COMPANIES THE BOOK ADDRESSES A WIDE RANGE OF TOPICS INCLUDING INCENTIVES FOR INNOVATION SPECIFICS OF DIGITAL HEALTH APPLICATIONS REIMBURSEMENT AND FINANCING OPTIONS FOR DIGITAL HEALTH SOLUTIONS LASTLY IT PRESENTS AN OUTLOOK FOR THE FUTURE AND A COMPARISON BETWEEN GERMANY AND OTHER COUNTRIES NAMELY THE USA AND JAPAN GIVEN ITS SCOPE THIS BOOK WILL APPEAL TO SCHOLARS OF HEALTH ECONOMICS HEALTHCARE MANAGEMENT AND PUBLIC HEALTH AS WELL AS PRACTITIONERS AND PROFESSIONALS IN THE PUBLIC HEALTH SECTOR THE BEST SOURCE FOR CUTTING EDGE INSIGHTS INTO AI IN HEALTHCARE OPERATIONS AI IN HEALTHCARE HOW ARTIFICIAL INTELLIGENCE IS CHANGING IT OPERATIONS AND INFRASTRUCTURE SERVICES COLLECTS ORGANIZES AND PROVIDES THE LATEST MOST UP TO DATE RESEARCH ON THE EMERGING TECHNOLOGY OF ARTIFICIAL INTELLIGENCE AS IT IS APPLIED TO HEALTHCARE OPERATIONS WRITTEN BY A WORLD LEADING TECHNOLOGY EXECUTIVE SPECIALIZING IN HEALTHCARE IT THIS BOOK PROVIDES CONCRETE EXAMPLES AND PRACTICAL ADVICE ON HOW TO DEPLOY ARTIFICIAL INTELLIGENCE SOLUTIONS IN YOUR HEALTHCARE ENVIRONMENT AI IN HEALTHCARE REVEALS TO READERS HOW THEY CAN TAKE ADVANTAGE OF CONNECTING REAL TIME EVENT CORRELATION AND RESPONSE AUTOMATION TO MINIMIZE IT DISRUPTIONS IN CRITICAL HEALTHCARE IT FUNCTIONS THIS BOOK PROVIDES IN DEPTH COVERAGE OF ALL THE MOST IMPORTANT AND CENTRAL TOPICS IN THE HEALTHCARE APPLICATIONS OF ARTIFICIAL INTELLIGENCE INCLUDING HEALTHCARE IT AI CLINICAL OPERATIONS AI OPERATIONAL INFRASTRUCTURE PROJECT PLANNING METRICS REPORTING AND SERVICE PERFORMANCE AIOPS IN AUTOMATION AIOPS CLOUD OPERATIONS FUTURE OF AI WRITTEN IN AN ACCESSIBLE AND STRAIGHTFORWARD STYLE THIS BOOK WILL BE INVALUABLE TO IT MANAGERS ADMINISTRATORS AND ENGINEERS IN HEALTHCARE SETTINGS AS WELL AS ANYONE WITH AN INTEREST OR STAKE IN HEALTHCARE TECHNOLOGY THE TRADITIONAL PATHOPHYSIOLOGY BOOK IS WRITTEN FOR THE MEDICAL STUDENT NURSING AND ALLIED HEALTH STUDENTS USUALLY AT THE SOPHOMORE LEVEL HAVE SIMPLY HAD TO MAKE DO WITH CUMBERSOME 1500 TO 1600 PAGE BOOKS THAT ASSUME CONSIDERABLY MORE SCIENCE BACKGROUND THAN THE TYPICAL ALLIED HEALTH STUDENT HAS ACQUIRED THE NOWAK BOOK IS NOT ONLY BRIEFER AT 700 PAGES BUT IS ORGANIZED IN A MANNER THAT BRINGS THE PRINCIPLES OF PATHOPHYSIOLOGY TO THE FOREFRONT THE AUTHORS FOCUS ON THE RELATIVELY FEW PATTERNS OF DISEASE RATHER THAN ASKING STUDENTS TO MEMORIZE EXTENSIVE CATALOGS OF SPECIFIC DISEASES THIS CONCEPTUAL APPROACH IS MORE SUITED TO THE ALLIED HEALTH STUDENT THAN THE DISEASE CENTERED APPROACH FEATURED IN THE MAJOR COMPETITORS DIGITAL DISRUPTION IN HEALTHCARE IS GENERATING NEW TECHNOLOGIES APPLICATIONS AND LARGE DATA SETS AND THESE ARE ALL PRECIPITATING SIGNIFICANT CHANGES IN HEALTHCARE PROCESSES EMERGING APPLICATIONS DUE TO DIGITAL DISRUPTION AND THEIR IMPACT ON HEALTHCARE DELIVERY AND QUALITY ARE BECOMING SOME OF THE KEY FOCUS AREAS OF RESEARCH HOWEVER TO DATE SYSTEMATIC GENERALIZABLE FULL SCALE EVALUATION OF THESE NEW TECHNOLOGIES APPLICATIONS IS LACKING LITTLE IS KNOWN ABOUT THE NET SHORT OR LONG TERM

HEALTH AND WELLNESS IMPACTS OF DIGITAL TECHNOLOGIES SIMILARLY THE CARE DELIVERY AND MANAGEMENT PROCESS CHANGES CAUSED BY DIGITAL DISRUPTION ARE FORCING HEALTHCARE ORGANIZATIONS TO REACT RATHER THAN PLAN FOR THEM IN ADVANCE GIVEN THESE GAPS THIS BOOK ADDRESSES THE TECHNOLOGY APPLICATIONS DATA AND PROCESS ASPECTS OF DIGITAL DISRUPTION IN HEALTHCARE THIS VOLUME IS A COLLECTION OF KEY AREAS IN HEALTH AND WELLNESS IMPACTED BY DIGITAL DISRUPTION IT HIGHLIGHTS THE BENEFITS BARRIERS FACILITATORS AND TRANSFORMATIVE FORCES THAT ARE SHAPING HEALTHCARE DIGITAL DISRUPTION TOPICS EXPLORED IN THE CHAPTERS INCLUDE TOWARDS NETWORK MEDICINE IMPLEMENTATION OF PANOMICS AND ARTIFICIAL INTELLIGENCE FOR PRECISION MEDICINE TELEHEALTH IMPLEMENTATION A SYNOPSIS OF PATIENTS EXPERIENCE OF CLINICAL OUTCOMES REALISING THE HEALTHCARE VALUE PROPOSITION OF BETTER ACCESS QUALITY AND VALUE OF CARE BY INCORPORATING THE SOCIAL DETERMINANTS OF HEALTH WITH DIGITAL HEALTH THE INTERNET HOSPITAL IN THE TIME OF COVID 19 AN EXAMPLE FROM CHINA GIVEN THE DIVERSE INTEREST IN HEALTHCARE DELIVERY SOLUTIONS TODAY THE NEED IS BROAD ACROSS ACADEMIA AND THE HEALTHCARE INDUSTRY FOR A COMPREHENSIVE RESOURCE FOR TEACHING PRACTICE AND RESEARCH DIGITAL DISRUPTION IN HEALTHCARE IS A POINT OF ENTRY RESOURCE FOR TRANSFERRING THEORY INTO PRACTICE FOR HEADS OF IT DEPARTMENTS IN HOSPITALS CONSULTANTS AND ACADEMIA AS WELL AS SCHOLARS AND RESEARCHERS BOTH GRADUATE AND UNDERGRADUATE STUDENTS AS WELL AS CERTIFICATE SEEKING HEALTH INFORMATICS AND PUBLIC HEALTH STUDENTS WOULD BENEFIT FROM THIS BOOK FURTHERMORE IT IS USEFUL FOR HEALTHCARE STAKEHOLDERS INCLUDING HEALTHCARE PROFESSIONALS CLINICIANS MEDICAL ADMINISTRATORS MANAGERS CONSULTANTS POLICY MAKERS AND IT PRACTITIONERS WITHIN THE HEALTHCARE SPACE ENERGY EFFICIENCY OF MEDICAL DEVICES AND HEALTHCARE FACILITIES PROVIDES COMPREHENSIVE COVERAGE OF CUTTING EDGE INTERDISCIPLINARY RESEARCH AND COMMERCIAL SOLUTIONS IN THIS FIELD THE AUTHORS DISCUSS ENERGY RELATED CHALLENGES SUCH AS ENERGY EFFICIENT DESIGN INCLUDING RENEWABLE ENERGY OF DIFFERENT MEDICAL DEVICES FROM A HARDWARE AND MECHANICAL PERSPECTIVES AS WELL AS ENERGY MANAGEMENT SOLUTIONS AND TECHNIQUES IN HEALTHCARE NETWORKS AND FACILITIES THEY ALSO DISCUSS ENERGY RELATED TRADE OFFS TO MAXIMIZE THE MEDICAL DEVICES AVAILABILITY ESPECIALLY BATTERY OPERATED ONES WHILE PROVIDING IMMEDIATE RESPONSE AND LOW LATENCY COMMUNICATION IN EMERGENCY SITUATIONS SUSTAINABILITY AND ROBUSTNESS FOR CHRONIC DISEASE TREATMENT IN ADDITION TO HIGH PROTECTION AGAINST CYBER ATTACKS THAT MAY THREATEN PATIENTS LIVES FINALLY THE BOOK EXAMINES TECHNOLOGIES AND FUTURE TRENDS OF NEXT GENERATION HEALTHCARE FROM AN ENERGY EFFICIENCY AND MANAGEMENT POINT OF VIEW SUCH AS PERSONALIZED OR SMART HEALTH AND THE INTERNET OF MEDICAL THINGS IOMT WHERE PATIENTS CAN PARTICIPATE IN THEIR OWN TREATMENT THROUGH INNOVATIVE MEDICAL DEVICES AND SOFTWARE APPLICATIONS AND TOOLS THE BOOKS APPLIED APPROACH MAKES IT A USEFUL RESOURCE FOR ENGINEERING RESEARCHERS AND PRACTITIONERS OF ALL LEVELS INVOLVED IN MEDICAL DEVICES DEVELOPMENT HEALTHCARE SYSTEMS AND ENERGY MANAGEMENT OF HEALTHCARE FACILITIES GRADUATE STUDENTS IN MECHANICAL AND ELECTRIC ENGINEERING AND COMPUTER SCIENCE STUDENTS AND PROFESSIONALS ALSO BENEFIT PROVIDES IN DEPTH KNOWLEDGE AND UNDERSTANDING OF THE BENEFITS OF ENERGY EFFICIENCY IN THE DESIGN OF MEDICAL DEVICES AND HEALTHCARE NETWORKS AND FACILITIES PRESENTS BEST PRACTICES AND STATE OF ART TECHNIQUES AND COMMERCIAL SOLUTIONS IN ENERGY MANAGEMENT OF HEALTHCARE NETWORKS AND SYSTEMS EXPLORES KEY ENERGY TRADEOFFS TO PROVIDE SCALABLE ROBUST AND EFFECTIVE HEALTHCARE SYSTEMS AND NETWORKS

Machine Learning for Healthcare Applications

2021-05-04

WHEN CONSIDERING THE IDEA OF USING MACHINE LEARNING IN HEALTHCARE IT IS A HERCULEAN TASK TO PRESENT THE ENTIRE GAMUT OF INFORMATION IN THE FIELD OF INTELLIGENT SYSTEMS IT IS THEREFORE THE OBJECTIVE OF THIS BOOK TO KEEP THE PRESENTATION NARROW AND INTENSIVE THIS APPROACH IS DISTINCT FROM OTHERS IN THAT IT PRESENTS DETAILED COMPUTER SIMULATIONS FOR ALL MODELS PRESENTED WITH EXPLANATIONS OF THE PROGRAM CODE IT INCLUDES UNIQUE AND DISTINCTIVE CHAPTERS ON DISEASE DIAGNOSIS TELEMEDICINE MEDICAL IMAGING SMART HEALTH MONITORING SOCIAL MEDIA HEALTHCARE AND MACHINE LEARNING FOR COVID 19 THESE CHAPTERS HELP DEVELOP A CLEAR UNDERSTANDING OF THE WORKING OF AN ALGORITHM WHILE STRENGTHENING LOGICAL THINKING IN THIS ENVIRONMENT ANSWERING A SINGLE QUESTION MAY REQUIRE ACCESSING SEVERAL DATA SOURCES AND CALLING ON SOPHISTICATED ANALYSIS TOOLS WHILE DATA INTEGRATION IS A DYNAMIC RESEARCH AREA IN THE DATABASE COMMUNITY THE SPECIFIC NEEDS OF RESEARCH HAVE LED TO THE DEVELOPMENT OF NUMEROUS MIDDLEWARE SYSTEMS THAT PROVIDE SEAMLESS DATA ACCESS IN A RESULT DRIVEN ENVIRONMENT SINCE THIS BOOK IS INTENDED TO BE USEFUL TO A WIDE AUDIENCE STUDENTS RESEARCHERS AND SCIENTISTS FROM BOTH ACADEMIA AND INDUSTRY MAY ALL BENEFIT FROM THIS MATERIAL IT CONTAINS A COMPREHENSIVE DESCRIPTION OF ISSUES FOR HEALTHCARE DATA MANAGEMENT AND AN OVERVIEW OF EXISTING SYSTEMS MAKING IT APPROPRIATE FOR INTRODUCTORY AND INSTRUCTIONAL PURPOSES PREREQUISITES ARE MINIMAL THE READERS ARE EXPECTED TO HAVE BASIC KNOWLEDGE OF MACHINE LEARNING THIS BOOK IS DIVIDED INTO 22 REAL TIME INNOVATIVE CHAPTERS WHICH PROVIDE A VARIETY OF APPLICATION EXAMPLES IN DIFFERENT DOMAINS THESE CHAPTERS ILLUSTRATE WHY TRADITIONAL APPROACHES OFTEN FAIL TO MEET CUSTOMERS NEEDS THE PRESENTED APPROACHES PROVIDE A COMPREHENSIVE OVERVIEW OF CURRENT TECHNOLOGY EACH OF THESE CHAPTERS WHICH ARE WRITTEN BY THE MAIN INVENTORS OF THE PRESENTED SYSTEMS SPECIFIES REQUIREMENTS AND PROVIDES A DESCRIPTION OF BOTH THE CHOSEN APPROACH AND ITS IMPLEMENTATION BECAUSE OF THE SELF CONTAINED NATURE OF THESE CHAPTERS THEY MAY BE READ IN ANY ORDER EACH OF THE CHAPTERS USE VARIOUS TECHNICAL TERMS WHICH INVOLVE EXPERTISE IN MACHINE LEARNING AND COMPUTER SCIENCE

Serious Games for Healthcare

2013

THIS BOOK INTRODUCES THE DEVELOPMENT AND APPLICATION OF GAME TECHNOLOGIES FOR HEALTH RELATED SERIOUS GAMES PROVIDING CUTTING EDGE RESEARCH FROM ACADEMIA AND INDUSTRY INFORMING READERS ABOUT THE CURRENT AND FUTURE ADVANCES IN THE AREA

Internet of Things in Healthcare. Applications and Challenges

2024-05-15

ACADEMIC PAPER FROM THE YEAR 2024 IN THE SUBJECT ENGINEERING COMPUTER ENGINEERING LANGUAGE ENGLISH ABSTRACT THIS REVIEW PAPER PROVIDES AN OVERVIEW OF THE INTERNET OF THINGS IOT IN HEALTHCARE FOCUSING ON ITS APPLICATIONS AND CHALLENGES IOT HAS TRANSFORMED HEALTHCARE

THROUGH THE INTRODUCTION OF REMOTE PATIENT MONITORING WEARABLES TELEMEDICINE AND THE INTERNET OF MEDICAL THINGS IOMT THESE APPLICATIONS OFFER UNPRECEDENTED OPPORTUNITIES FOR IMPROVING PATIENT CARE ENHANCING MEDICAL DIAGNOSTICS AND INCREASING ACCESSIBILITY TO HEALTHCARE SERVICES DESPITE THE NUMEROUS BENEFITS IOT IN HEALTHCARE ALSO FACES SEVERAL CHALLENGES OVERCOMING THESE OBSTACLES IS CRITICAL TO REALIZING THE FULL PROMISE OF IOT IN HEALTHCARE AND ENSURING ITS SAFE AND EFFECTIVE IMPLEMENTATION THIS REVIEW DISCUSSES STRATEGIES AND TECHNOLOGIES TO OVERCOME SECURITY AND PRIVACY ISSUES MANAGE DATA OVERLOAD AND IMPROVE INTERNET CONNECTIVITY ENABLING A BETTER CONNECTED MORE EFFECTIVE HEALTHCARE ENVIRONMENT

Healthcare Applications

2017

THIS BOOK ADDRESSES THE DIFFICULT TASK OF MANAGING ADMISSIONS AND WAITING LISTS WHILE ENSURING QUICK AND CONVINCING RESPONSE TO UNANTICIPATED CHANGES OF THE CLINICAL NEEDS IT TACKLES THE LIMITATIONS OF TRADITIONAL SYSTEMS TAKING INTO CONSIDERATION THE DYNAMIC NATURE OF CLINICAL NEEDS SCARCE RESOURCES ALTERNATIVE STRATEGIES AND CUSTOMER SATISFACTION IN AN ENVIRONMENT THAT IMPOSES UNEXPECTED DEVIATION FROM PLANNED ACTIVITIES PROVIDED BY PUBLISHER

Web Mobile-Based Applications for Healthcare Management

2007-01-31

APPLICATIONS OF BIG DATA IN HEALTHCARE THEORY AND PRACTICE BEGINS WITH THE BASICS OF BIG DATA ANALYSIS AND INTRODUCES THE TOOLS PROCESSES AND PROCEDURES ASSOCIATED WITH BIG DATA ANALYTICS THE BOOK UNITES HEALTHCARE WITH BIG DATA ANALYSIS AND USES THE ADVANTAGES OF THE LATTER TO SOLVE THE PROBLEMS FACED BY THE FORMER THE AUTHORS PRESENT THE CHALLENGES FACED BY THE HEALTHCARE INDUSTRY INCLUDING CAPTURING STORING SEARCHING SHARING AND ANALYZING DATA THIS BOOK ILLUSTRATES THE CHALLENGES IN THE APPLICATIONS OF BIG DATA AND SUGGESTS WAYS TO OVERCOME THEM WITH A PRIMARY EMPHASIS ON DATA REPOSITORIES CHALLENGES AND CONCEPTS FOR DATA SCIENTISTS ENGINEERS AND CLINICIANS THE APPLICATIONS OF BIG DATA HAVE GROWN TREMENDOUSLY WITHIN THE PAST FEW YEARS AND ITS GROWTH CAN NOT ONLY BE ATTRIBUTED TO ITS COMPETENCE TO HANDLE LARGE DATA STREAMS BUT ALSO TO ITS ABILITIES TO FIND INSIGHTS FROM COMPLEX NOISY HETEROGENEOUS LONGITUDINAL AND VOLUMINOUS DATA THE MAIN OBJECTIVES OF BIG DATA IN THE HEALTHCARE SECTOR IS TO COME UP WITH WAYS TO PROVIDE PERSONALIZED HEALTHCARE TO PATIENTS BY TAKING INTO ACCOUNT THE ENORMOUS AMOUNTS OF ALREADY EXISTING DATA PROVIDES CASE STUDIES THAT ILLUSTRATE THE BUSINESS PROCESSES UNDERLYING THE USE OF BIG DATA AND DEEP LEARNING HEALTH ANALYTICS TO IMPROVE HEALTH CARE DELIVERY SUPPLIES READERS WITH A FOUNDATION FOR FURTHER SPECIALIZED STUDY IN CLINICAL ANALYSIS AND DATA MANAGEMENT INCLUDES LINKS TO WEBSITES VIDEOS ARTICLES AND OTHER ONLINE CONTENT TO EXPAND AND SUPPORT THE PRIMARY LEARNING OBJECTIVES FOR EACH MAJOR SECTION OF THE BOOK

Applications of Big Data in Healthcare

2021-03-10

MACHINE LEARNING AND DEEP LEARNING IN MEDICAL DATA ANALYTICS AND HEALTHCARE APPLICATIONS INTRODUCES AND EXPLORES A VARIETY OF SCHEMES DESIGNED TO EMPOWER ENHANCE AND REPRESENT MULTI INSTITUTIONAL AND MULTI DISCIPLINARY MACHINE LEARNING ML AND DEEP LEARNING DL RESEARCH IN HEALTHCARE PARADIGMS SERVING AS A UNIQUE COMPENDIUM OF EXISTING AND EMERGING ML DL PARADIGMS FOR THE HEALTHCARE SECTOR THIS BOOK DEMONSTRATES THE DEPTH BREADTH COMPLEXITY AND DIVERSITY OF THIS MULTI DISCIPLINARY AREA IT PROVIDES A COMPREHENSIVE OVERVIEW OF ML DL ALGORITHMS AND EXPLORES THE RELATED USE CASES IN ENTERPRISES SUCH AS COMPUTER AIDED MEDICAL DIAGNOSTICS DRUG DISCOVERY AND DEVELOPMENT MEDICAL IMAGING AUTOMATION ROBOTIC SURGERY ELECTRONIC SMART RECORDS CREATION OUTBREAK PREDICTION MEDICAL IMAGE ANALYSIS AND RADIATION TREATMENTS THIS BOOK AIMS TO ENDOW DIFFERENT COMMUNITIES WITH THE INNOVATIVE ADVANCES IN THEORY ANALYTICAL RESULTS CASE STUDIES NUMERICAL SIMULATION MODELING AND COMPUTATIONAL STRUCTURING IN THE FIELD OF ML DL MODELS FOR HEALTHCARE APPLICATIONS IT WILL REVEAL DIFFERENT DIMENSIONS OF ML DL APPLICATIONS AND WILL ILLUSTRATE THEIR USE IN THE SOLUTION OF ASSORTED REAL WORLD BIOMEDICAL AND HEALTHCARE PROBLEMS FEATURES COVERS THE FUNDAMENTALS OF ML AND DL IN THE CONTEXT OF HEALTHCARE APPLICATIONS DISCUSSES VARIOUS DATA COLLECTION APPROACHES FROM VARIOUS SOURCES AND HOW TO USE THEM IN ML DL MODELS INTEGRATES SEVERAL ASPECTS OF AI BASED COMPUTATIONAL INTELLIGENCE SUCH AS ML AND DL FROM DIVERSIFIED PERSPECTIVES WHICH DESCRIBE RECENT RESEARCH TRENDS AND ADVANCED TOPICS IN THE FIELD EXPLORES THE CURRENT AND FUTURE IMPACTS OF PANDEMICS AND RISK MITIGATION IN HEALTHCARE WITH ADVANCED ANALYTICS EMPHASIZES FEATURE SELECTION AS AN IMPORTANT STEP IN ANY ACCURATE MODEL SIMULATION WHERE ML DL METHODS ARE USED TO HELP TRAIN THE SYSTEM AND EXTRACT THE POSITIVE SOLUTION IMPLICITLY THIS BOOK IS A VALUABLE SOURCE OF INFORMATION FOR RESEARCHERS SCIENTISTS HEALTHCARE PROFESSIONALS PROGRAMMERS AND GRADUATE LEVEL STUDENTS INTERESTED IN UNDERSTANDING THE APPLICATIONS OF ML DL IN HEALTHCARE SCENARIOS DR OM PRAKASH JENA IS AN ASSISTANT PROFESSOR IN THE DEPARTMENT OF COMPUTER SCIENCE RAVENSHAW UNIVERSITY CUTTACK ODISHA INDIA DR BHARAT BHUSHAN IS AN ASSISTANT PROFESSOR OF DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING CSE AT THE SCHOOL OF ENGINEERING AND TECHNOLOGY SHARDA UNIVERSITY GREATER NOIDA INDIA DR UTKU KOSE IS AN ASSOCIATE PROFESSOR IN SULEYMAN DEMIREL UNIVERSITY TURKEY

Machine Learning and Deep Learning in Medical Data Analytics and Healthcare Applications

2022

INFORMATICS AND TECHNOLOGY HAVE BECOME AN INTRINSIC PART OF HEALTHCARE MANAGEMENT IN RECENT YEARS IT IS ALMOST IMPOSSIBLE TO IMAGINE A MODERN HEALTHCARE SYSTEM WITHOUT THEM THIS BOOK PRESENTS THE PROCEEDINGS OF THE 14TH ANNUAL INTERNATIONAL CONFERENCE ON INFORMATICS MANAGEMENT AND TECHNOLOGY IN HEALTHCARE ICIMTH HELD IN ATHENS GREECE IN JULY 2016 THE CONFERENCE TREATS THE FIELD OF BIOMEDICAL INFORMATICS IN A VERY BROAD FRAMEWORK AND THE 68 FULL PAPERS INCLUDED HERE EXAMINE THE RESEARCH AND APPLICATIONS OUTCOMES OF INFORMATICS FROM CELL TO POPULATION INCLUDING A NUMBER OF TECHNOLOGIES SUCH AS IMAGING SENSORS MOBILE COMMUNICATIONS BIOMEDICAL EQUIPMENT AND MANAGEMENT AS WELL AS LEGAL AND

SOCIETAL ISSUES RELATED TO THE APPLICATION OF HEALTH INFORMATICS THE BOOK IS DIVIDED INTO SECTIONS BIOMEDICAL TECHNOLOGY CLINICAL INFORMATICS E LEARNING AND EDUCATION FORMALISATION OF KNOWLEDGE ONTOLOGIES CLINICAL GUIDELINES AND STANDARDS OF HEALTHCARE HEALTH INFORMATICS HEALTHCARE MANAGEMENT AND PUBLIC HEALTH MHEALTH AND TELEMEDICINE AND SOCIAL MEDIA AND HEALTH ALSO INCLUDED ARE TWO KEYNOTE SPEECHES COVERING A WIDE SPECTRUM OF APPLICATIONS THE BOOK WILL BE OF INTEREST TO ALL THOSE WORKING IN THE DESIGN MANAGEMENT AND DELIVERY OF HEALTHCARE SERVICES WHOSE WORK INVOLVES THE DEVELOPMENT OR USE OF BIOMEDICAL INFORMATICS

Unifying the Applications and Foundations of Biomedical and Health Informatics

2016-07-21

THIS IS THE EBOOK VERSION OF THE PRINT TITLE THE EBOOK EDITION DOES NOT PROVIDE ACCESS TO THE CONTENT OF THE CD ROMS THAT ACCOMPANIES THE PRINT BOOK BRINGING THE POWER OF VIRTUAL INSTRUMENTATION TO THE BIOMEDICAL COMMUNITY APPLICATIONS ACROSS DIVERSE MEDICAL SPECIALTIES DETAILED DESIGN GUIDES FOR LABVIEW AND BIOBENCH APPLICATIONS HANDS ON PROBLEM SOLVING THROUGHOUT THE BOOK LABORATORY CLINICAL AND HEALTHCARE APPLICATIONS NUMEROUS VI S WITH SOURCE CODE PLUS SEVERAL DEMOS ARE AVAILABLE ON THE BOOK S WEB SITE VIRTUAL INSTRUMENTATION ALLOWS MEDICAL RESEARCHERS AND PRACTITIONERS TO COMBINE THE TRADITIONAL DIAGNOSTIC TOOLS WITH ADVANCED TECHNOLOGIES SUCH AS DATABASES ACTIVE X AND THE INTERNET IN BOTH LABORATORY AND CLINICAL ENVIRONMENTS USERS CAN INTERACT WITH A WEALTH OF DISPARATE SYSTEMS FACILITATING BETTER FASTER AND MORE INFORMED DECISION MAKING VIRTUAL BIO INSTRUMENTATION BIOMEDICAL CLINICAL AND HEALTHCARE APPLICATIONS IN LABVIEW IS THE FIRST BOOK OF ITS KIND TO APPLY VI TECHNOLOGY TO THE BIOMEDICAL FIELD HANDS ON PROBLEMS THROUGHOUT THE BOOK DEMONSTRATE IMMEDIATE PRACTICAL USES EXAMPLES COVER A VARIETY OF MEDICAL SPECIALTIES DETAILED DESIGN INSTRUCTIONS GIVE THE INSIDE VIEW OF LABVIEW AND BIOBENCH APPLICATIONS BOTH STUDENTS AND PRACTICING PROFESSIONALS WILL APPRECIATE THE PRACTICAL APPLICATIONS OFFERED FOR MODELING FUNDAMENTAL PHYSIOLOGY ADVANCED SYSTEMS ANALYSIS MEDICAL DEVICE DEVELOPMENT AND TESTING AND EVEN HOSPITAL MANAGEMENT AND CLINICAL ENGINEERING SCENARIOS

Virtual Bio-Instrumentation

2001-12-18

THIS BOOK BRINGS TOGETHER LATEST APPLICATIONS AND STATE OF THE ART DEVELOPMENTS IN HEALTHCARE SECTOR USING BLOCKCHAIN TECHNOLOGY IT EXPLAINS HOW BLOCKCHAIN CAN ENHANCE SECURITY PRIVACY INTEROPERABILITY DATA ACCESSIBILITY INCLUDING AI BLOCKCHAINS FOR MEDICAL IMAGING TO SUPPLY CHAIN MANAGEMENT AND CENTRALIZED MANAGEMENT ALONGSIDE THE DLT

Blockchain Technology in Healthcare Applications

2022

POLYMERIC BIOMATERIALS FOR HEALTHCARE APPLICATIONS DETAILS A BROAD RANGE OF POLYMERIC

BIOMATERIALS METHODS OF SYNTHESIS AND PREPARATION AND THEIR VARIOUS APPLICATIONS IN HEALTHCARE AND BIOMEDICINE THE BOOK PROVIDES A FUNDAMENTAL OVERVIEW OF POLYMERS AND PROCESSING TECHNOLOGIES TO ALLOW CLINICAL SCIENTISTS TO EXPLORE THE USE OF THESE POLYMERS IN ALTERNATIVE APPLICATIONS A WIDE VARIETY OF HEALTHCARE APPLICATIONS ARE COVERED INCLUDING TREATMENT FOR AUTOIMMUNE DISEASES AND BACTERIAL INFECTIONS TISSUE ENGINEERING GENE DELIVERY WOUND DRESSING AND MORE THE BOOK PROVIDES A CORE INTRODUCTORY TEXT FOR CLINICAL AND MATERIALS SCIENTISTS NEW TO THE AREA OF POLYMERIC BIOMATERIALS THIS BOOK WILL PROVE USEFUL TO ACADEMICS AND RESEARCHERS IN MATERIALS SCIENCE BIOMEDICAL ENGINEERING CLINICAL SCIENCE AND PHARMACEUTICAL SCIENCE COVERS A BROAD RANGE OF POLYMERIC BIOMATERIALS INCLUDING CHITOSAN ALGINATE CELLULOSE COLLAGEN SYNTHETIC CONJUGATES AND MORE DETAILS A WIDE VARIETY OF HEALTHCARE APPLICATIONS FOR POLYMERIC BIOMATERIALS SUCH AS ORTHOPEDIC ENGINEERING ANTIBIOTICS TARGETED DRUG DELIVERY AND MORE PROVIDES A DETAILED OVERVIEW OF POLYMER PROCESSING TECHNOLOGIES AND STERILIZATION CONSIDERATIONS

Polymeric Biomaterials for Healthcare Applications

2022-05-07

IN TODAY S CHALLENGING HEALTH CARE ENVIRONMENT HEALTH CARE ORGANIZATIONS ARE FACED WITH IMPROVING PATIENT OUTCOMES REDESIGNING BUSINESS PROCESSES AND EXECUTING QUALITY AND RISK MANAGEMENT INITIATIVES HEALTH CARE QUALITY MANAGEMENT OFFERS AN INTRODUCTION TO THE FIELD AND PRACTICE OF QUALITY MANAGEMENT AND REVEALS THE BEST PRACTICES AND STRATEGIES HEALTH CARE ORGANIZATIONS CAN ADOPT TO IMPROVE PATIENT OUTCOMES AND PROGRAM QUALITY FILLED WITH ILLUSTRATIVE CASE STUDIES THAT SHOW HOW BUSINESS PROCESSES CAN BE RESTRUCTURED TO ACHIEVE IMPROVEMENTS IN QUALITY RISK REDUCTION AND OTHER KEY BUSINESS RESULTS AND OUTCOMES CLEARLY DEMONSTRATES HOW TO EFFECTIVELY USE PROCESS ANALYSIS TOOLS TO IDENTIFY ISSUES AND CAUSES SELECT CORRECTIVE ACTIONS AND MONITOR IMPLEMENTED SOLUTIONS INCLUDES VITAL INFORMATION ON THE USE OF STATISTICAL PROCESS CONTROL TO MONITOR SYSTEM PERFORMANCE VARIABLES AND OUTCOMES ATTRIBUTES ALSO CONTAINS MULTIPLE DATA SETS THAT CAN BE USED TO PRACTICE THE SKILLS AND TOOLS DISCUSSED AND REVIEWS EXAMPLES OF WHERE AND HOW THE TOOLS HAVE BEEN APPLIED IN HEALTH CARE PROVIDES INFORMATION ON ROOT CAUSE ANALYSIS AND FAILURE MODE EFFECTS ANALYSIS AND OFFERS AS DISCUSSION THE CLINICAL TOOLS AND APPLICATIONS THAT ARE USED TO IMPROVE PATIENT CARE BY EMPHASIZING THE TOOLS OF STATISTICS AND INFORMATION TECHNOLOGY THIS BOOK TEACHES FUTURE HEALTH CARE PROFESSIONALS HOW TO IDENTIFY OPPORTUNITIES FOR QUALITY IMPROVEMENT AND USE THE TOOLS TO MAKE THOSE IMPROVEMENTS

Health Care Quality Management

2013-12-12

AIOT ARTIFICIAL INTELLIGENCE OF THINGS AND BIG DATA ANALYTICS ARE CATALYZING A HEALTHCARE REVOLUTION THIS BOOK IS AN ACCESSIBLE VOLUME THAT SUMMARIZES THE INFORMATION AVAILABLE IN THIS BOOK RESEARCHERS EXPLORE HOW AIOT AND BIG DATA CAN SEAMLESSLY INTEGRATE INTO HEALTHCARE ENHANCING MEDICAL SERVICES AND DEVICES WHILE ADHERING TO ESTABLISHED PROTOCOLS THE BOOK DEMONSTRATES THE CRUCIAL ROLE OF THESE TECHNOLOGIES DURING HEALTHCARE CRISES LIKE THE COVID 19 PANDEMIC IT PRESENTS NOVEL SOLUTIONS AND COMPUTATIONAL TECHNIQUES POWERED BY AIOT MACHINE LEARNING AND DEEP LEARNING PROVIDING A NEW FRONTIER IN HEALTHCARE

PROBLEM SOLVING KEY FEATURES REAL LIFE ILLUSTRATIONS REAL WORLD EXAMPLES SHOWCASE AIOT AND BIG DATA IN ACTION HIGHLIGHTING THEIR IMPACT IN HEALTHCARE COMPREHENSIVE EXPLORATION THE BOOK OFFERS A THOROUGH EXAMINATION OF AIOT BIG DATA AND THEIR HARMONIOUS SYNERGY WITHIN THE HEALTHCARE LANDSCAPE VISUAL AIDS COMPLEX CONCEPTS BECOME APPROACHABLE THROUGH DIAGRAMS FLOWCHARTS AND INFOGRAPHICS MAKING TECHNICAL PROCESSES AND SYSTEM DESIGNS MORE DIGESTIBLE ETHICAL INSIGHTS DELVING INTO THE ETHICAL DIMENSIONS OF AIOT AND BIG DATA IT ADDRESSES CONCERNS LIKE DATA BIAS PATIENT CONSENT AND TRANSPARENCY IN HEALTHCARE FORWARD LOOKING DISCOURSE THE BOOK ENGAGES WITH EMERGING TRENDS POTENTIAL INNOVATIONS AND THE FUTURE DIRECTION OF AIOT AND BIG DATA MAKING IT A COMPASS FOR HEALTHCARE TRANSFORMATION RESEARCHERS WHETHER FROM ACADEMIA INDUSTRY OR RESEARCH AND DEVELOPMENT ORGANIZATIONS INTERESTED IN AIOT BIG DATA ARTIFICIAL INTELLIGENCE AND HEALTHCARE OPTIMIZATION WILL FIND THIS BOOK INFORMATIVE IT ALSO SERVES AS AN UPDATE FOR TECH ENTHUSIASTS WHO WANT TO EXPLORE THE FUTURE OF HEALTHCARE POWERED BY AI AND DATA

AIoT and Big Data Analytics for Smart Healthcare Applications

2023-12-26

THIS REFERENCE SET PROVIDES A COMPLETE UNDERSTANDING OF THE DEVELOPMENT OF APPLICATIONS AND CONCEPTS IN CLINICAL PATIENT AND HOSPITAL INFORMATION SYSTEMS PROVIDED BY PUBLISHER

Health Information Systems

2009-12-31

THIS NEW VOLUME DISCUSSES THE APPLICATIONS AND CHALLENGES OF DEEP LEARNING AND THE INTERNET OF THINGS FOR APPLICATIONS IN HEALTHCARE IT DESCRIBES DEEP LEARNING TECHNIQUES IN CONJUNCTION WITH IOT USED BY PRACTITIONERS AND RESEARCHERS WORLDWIDE THE AUTHORS EXPLORE THE CONVERGENCE OF IOT AND DEEP LEARNING TO ENABLE THINGS TO COMMUNICATE SHARE INFORMATION AND COORDINATE DECISIONS THE BOOK INCLUDES DEEP FEEDFORWARD NETWORKS REGULARIZATION OPTIMIZATION ALGORITHMS CONVOLUTIONAL NETWORKS SEQUENCE MODELING AND PRACTICAL METHODOLOGY CHAPTERS LOOK AT ASSISTIVE DEVICES IN HEALTHCARE ALERTING AND DETECTION DEVICES ENERGY EFFICIENCY IN USING IOT DATA MINING FOR GATHERING HEALTH INFORMATION FOR INDIVIDUALS WITH AUTISM IOT FOR MOBILE APPLICATIONS AND MORE THE TEXT ALSO OFFERS MATHEMATICAL AND CONCEPTUAL BACKGROUND THAT PRESENTS THE LATEST TECHNOLOGY AS WELL AS A SELECTION OF CASE STUDIES

Deep Learning and IoT in Healthcare Systems

2021-12-15

ARTIFICIAL INTELLIGENCE AI AND MACHINE LEARNING ML TECHNIQUES PLAY AN IMPORTANT ROLE IN OUR DAILY LIVES BY ENHANCING PREDICTIONS AND DECISION MAKING FOR THE PUBLIC IN SEVERAL FIELDS SUCH AS FINANCIAL SERVICES REAL ESTATE BUSINESS CONSUMER GOODS SOCIAL MEDIA ETC DESPITE SEVERAL STUDIES THAT HAVE PROVED THE EFFICACY OF AI ML TOOLS IN PROVIDING IMPROVED HEALTHCARE SOLUTIONS IT HAS NOT GAINED THE TRUST OF HEALTH CARE PRACTITIONERS AND MEDICAL SCIENTISTS

THIS IS DUE TO POOR REPORTING OF THE TECHNOLOGY VARIABILITY IN MEDICAL DATA SMALL DATASETS AND LACK OF STANDARD GUIDELINES FOR APPLICATION OF AI THEREFORE THE DEVELOPMENT OF NEW AI ML TOOLS FOR VARIOUS DOMAINS OF MEDICINE IS AN ONGOING FIELD OF RESEARCH MACHINE LEARNING IN HEALTHCARE FUNDAMENTALS AND RECENT APPLICATIONS DISCUSSES HOW TO BUILD VARIOUS ML ALGORITHMS AND HOW THEY CAN BE APPLIED TO IMPROVE HEALTHCARE SYSTEMS HEALTHCARE APPLICATIONS OF AI ARE INNUMERABLE MEDICAL DATA ANALYSIS EARLY DETECTION AND DIAGNOSIS OF DISEASE PROVIDING OBJECTIVE BASED EVIDENCE TO REDUCE HUMAN ERRORS CURTAILING INTER AND INTRA OBSERVER ERRORS RISK IDENTIFICATION AND INTERVENTIONS FOR HEALTHCARE MANAGEMENT REAL TIME HEALTH MONITORING ASSISTING CLINICIANS AND PATIENTS FOR SELECTING APPROPRIATE MEDICATIONS AND EVALUATING DRUG RESPONSES EXTENSIVE DEMONSTRATIONS AND DISCUSSION ON THE VARIOUS PRINCIPLES OF MACHINE LEARNING AND ITS APPLICATION IN HEALTHCARE IS PROVIDED ALONG WITH SOLVED EXAMPLES AND EXERCISES THIS TEXT IS IDEAL FOR READERS INTERESTED IN MACHINE LEARNING WITHOUT ANY BACKGROUND KNOWLEDGE AND LOOKING TO IMPLEMENT MACHINE LEARNING MODELS FOR HEALTHCARE SYSTEMS

Machine Learning in Healthcare

2022-02-17

BLOCKCHAIN IS NEW AGE TECHNOLOGY USED TO TRACK EVERY TRANSACTION USING CRYPTOCURRENCY ACROSS SERVERS LINKED IN A PEER TO PEER NETWORK ENABLING TRANSACTIONS TO BE SECURE TRANSPARENT AND RELIABLE RETAINING AN EFFICIENT SECURE AND PATIENT CENTRIC HEALTHCARE INDUSTRY HAS NEVER BEEN SO IMPORTANT ESPECIALLY DUE TO THE DAMAGING EFFECTS OF THE COVID 19 PANDEMIC THE APPLICABILITY OF BLOCKCHAIN IN THE HEALTHCARE DOMAIN CAN BE SEEN AS A REMARKABLE OPPORTUNITY FOR RESEARCHERS AND SCIENTISTS TO SOLVE REAL WORLD PROBLEMS THIS BOOK FOCUSES ON THE FUNDAMENTALS OF BLOCKCHAIN TECHNOLOGY ALONG WITH THE METHODS OF ITS INTEGRATION WITH THE HEALTHCARE INDUSTRY IT ALSO PROVIDES AN ENHANCED UNDERSTANDING OF BLOCKCHAIN TECHNOLOGY AI AND IOT ACROSS THE VARIOUS APPLICATION AREAS OF THE HEALTHCARE INDUSTRY FURTHERMORE THROUGHOUT THE BOOK AREAS OF RELEVANT APPLICATIONS SUCH AS PATIENT DATA PRIVACY PROTECTION PHARMACEUTICAL SUPPLY CHAINS AND GENOMICS ARE DISCUSSED

Blockchain Applications in Healthcare

2023-08-29

THIS BOOK PROVIDES A PROFICIENT GUIDE ON THE RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE AI AND HEALTHCARE AND HOW AI IS CHANGING ALL ASPECTS OF THE HEALTHCARE INDUSTRY IT ALSO COVERS HOW DEEP LEARNING WILL HELP IN DIAGNOSIS AND THE PREDICTION OF DISEASE SPREAD THE EDITORS PRESENT A COMPREHENSIVE REVIEW OF RESEARCH APPLYING DEEP LEARNING IN HEALTH INFORMATICS IN THE FIELDS OF MEDICAL IMAGING ELECTRONIC HEALTH RECORDS GENOMICS AND SENSING AND HIGHLIGHTS VARIOUS CHALLENGES IN APPLYING DEEP LEARNING IN HEALTH CARE THIS BOOK ALSO INCLUDES APPLICATIONS AND CASE STUDIES ACROSS ALL AREAS OF AI IN HEALTHCARE DATA THE EDITORS ALSO AIM TO PROVIDE NEW THEORIES TECHNIQUES DEVELOPMENTS AND APPLICATIONS OF DEEP LEARNING AND TO SOLVE EMERGING PROBLEMS IN HEALTHCARE AND OTHER DOMAINS THIS BOOK IS INTENDED FOR COMPUTER SCIENTISTS BIOMEDICAL ENGINEERS AND HEALTHCARE PROFESSIONALS RESEARCHING AND DEVELOPING DEEP LEARNING TECHNIQUES IN SHORT THE VOLUME DISCUSSES THE RELATIONSHIP BETWEEN AI AND HEALTHCARE AND HOW AI IS CHANGING THE HEALTH CARE INDUSTRY

CONSIDERS USES OF DEEP LEARNING IN DIAGNOSIS AND PREDICTION OF DISEASE SPREAD PRESENTS A COMPREHENSIVE REVIEW OF RESEARCH APPLYING DEEP LEARNING IN HEALTH INFORMATICS ACROSS MULTIPLE FIELDS HIGHLIGHTS CHALLENGES IN APPLYING DEEP LEARNING IN THE FIELD PROMOTES RESEARCH IN DDEEP LLEARNING APPLICATION IN UNDERSTANDING THE BIOMEDICAL PROCESS DR M A JABBAR IS A PROFESSOR AND HEAD OF THE DEPARTMENT AI ML VARDHAMAN COLLEGE OF ENGINEERING HYDERABAD TELANGANA INDIA PROF DR AJITH ABRAHAM IS THE DIRECTOR OF MACHINE INTELLIGENCE RESEARCH LABS MIR LABS AUBURN WASHINGTON USA DR ONUR DOGAN IS AN ASSISTANT PROFESSOR AT ⍰ ZMIR BAK⍰ R⍰ AY UNIVERSITY TURKEY PROF DR ANA MADUREIRA IS THE DIRECTOR OF THE INTERDISCIPLINARY STUDIES RESEARCH CENTER AT INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO ISEP PORTUGAL DR SANJU TIWARI IS A SENIOR RESEARCHER AT UNIVERSIDAD AUTONOMA DE TAMAULIPAS MEXICO

Deep Learning in Biomedical and Health Informatics

2021-09-26

THIS BOOK PROVIDES A PRACTICALLY APPLICABLE GUIDE TO DESIGNING EVIDENCE BASED MEDICAL APPS AND MHEALTH INTERVENTIONS IT FEATURES DETAILED GUIDANCE AND CASE STUDIES WHERE APPLICABLE ON THE BEST PRACTICES AND AVAILABLE TECHNIQUES FROM BOTH TECHNOLOGICAL PLATFORM TECHNOLOGIES TOOLKITS SENSORS AND RESEARCH PERSPECTIVES THIS APPROACH ENABLES THE READER TO DEVELOP A DEEP UNDERSTANDING OF HOW TO COLLECT THE APPROPRIATE DATA AND WORK WITH USERS TO BUILD A USER FRIENDLY APP FOR THEIR TARGET AUDIENCE INFORMATION ON HOW RESEARCHERS AND DESIGNERS CAN COMMUNICATE THEIR INTENTIONS WITH A VARIETY OF STAKEHOLDERS INCLUDING MEDICAL PRACTITIONERS DEVELOPERS AND RESEARCHERS TO ENSURE THE BEST POSSIBLE DECISIONS ARE MADE DURING THE DEVELOPMENT PROCESS TO PRODUCE AN APP OF OPTIMAL QUALITY THAT ALSO CONSIDERS USABILITY DEVELOPING MEDICAL APPS AND MHEALTH INTERVENTIONS COMPREHENSIVELY COVERS THE DEVELOPMENT OF MEDICAL AND HEALTH APPS FOR RESEARCHERS INFORMATICIANS AND PHYSICIANS AND IS A VALUABLE RESOURCE FOR THE EXPERIENCED PROFESSIONAL AND TRAINEE SEEKING A TEXT ON HOW TO DEVELOP USER FRIENDLY MEDICAL APPS

Developing Medical Apps and mHealth Interventions

2020-07-14

THIS BOOK DISCUSSES THE APPLICATIONS CHALLENGES AND FUTURE TRENDS OF MACHINE LEARNING IN MEDICAL DOMAIN INCLUDING BOTH BASIC AND ADVANCED TOPICS THE BOOK PRESENTS HOW MACHINE LEARNING IS HELPFUL IN SMOOTH CONDUCTION OF ADMINISTRATIVE PROCESSES IN HOSPITALS IN TREATING INFECTIOUS DISEASES AND IN PERSONALIZED MEDICAL TREATMENTS THE AUTHORS SHOW HOW MACHINE LEARNING CAN ALSO HELP MAKE FAST AND MORE ACCURATE DISEASE DIAGNOSES EASILY IDENTIFY PATIENTS HELP IN NEW TYPES OF THERAPIES OR TREATMENTS MODEL SMALL MOLECULE DRUGS IN PHARMACEUTICAL SECTOR AND HELP WITH INNOVATIONS VIA INTEGRATED TECHNOLOGIES SUCH AS ARTIFICIAL INTELLIGENCE AS WELL AS DEEP LEARNING THE AUTHORS SHOW HOW MACHINE LEARNING ALSO IMPROVES THE PHYSICIAN S AND DOCTOR S MEDICAL CAPABILITIES TO BETTER DIAGNOSIS THEIR PATIENTS THIS BOOK ILLUSTRATES ADVANCED INNOVATIVE TECHNIQUES FRAMEWORKS CONCEPTS AND METHODOLOGIES OF MACHINE LEARNING THAT WILL ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF THE HEALTHCARE SYSTEM PROVIDES RESEARCHERS IN MACHINE AND DEEP LEARNING WITH A CONCEPTUAL UNDERSTANDING OF VARIOUS METHODOLOGIES OF IMPLEMENTING THE TECHNOLOGIES IN MEDICAL AREAS DISCUSSES THE ROLE MACHINE LEARNING AND IOT PLAY INTO LOCATING DIFFERENT VIRUS AND DISEASES ACROSS THE GLOBE SUCH AS COVID 19 EBOLA AND CERVICAL CANCER INCLUDES FUNDAMENTALS AND

ADVANCES IN MACHINE LEARNING IN THE MEDICAL FIELD SUPPORTED BY SIGNIFICANT CASE STUDIES AND PRACTICAL APPLICATIONS

Machine Learning for Critical Internet of Medical Things

2023-02-04

AFTER OVER TWO DECADES OF FOCUSED RESEARCH AND DEVELOPMENT SILICON CARBIDE SIC IS NOW READY FOR USE IN THE HEALTHCARE SECTOR AND SILICON CARBIDE TECHNOLOGY FOR ADVANCED HUMAN HEALTHCARE APPLICATIONS PROVIDES AN UP TO DATE ASSESSMENT OF SIC DEVICES FOR LONG TERM HUMAN USE IT EXPLORES A PLETHORA OF APPLICATIONS THAT SIC IS UNIQUELY POSITIONED FOR IN HUMAN HEALTHCARE BEGINNING WITH THE THREE PRIMARY AREAS OF TECHNOLOGY WHICH ARE CLOSEST TO HUMAN TRIALS AND THUS ADOPTION IN THE HEALTHCARE INDUSTRY NEURAL IMPLANTS AND SPINAL CORD REPAIR GRAPHENE AND BIOSENSORS AND FINALLY DEEP TISSUE CANCER THERAPY USING SIC NANOTECHNOLOGY BIOMEDICAL INSPIRED ENGINEERS SCIENTISTS AND HEALTHCARE PROFESSIONALS WILL FIND THIS BOOK TO BE VERY USEFUL IN TWO WAYS I AS A GUIDE TO NEW WAYS TO DESIGN AND DEVELOP ADVANCED MEDICAL DEVICES AND II AS A REFERENCE FOR NEW DEVELOPMENTS IN THE FIELD THE BOOK S INTENT IS TO STIMULATE IDEAS FOR FURTHER TECHNOLOGICAL ENHANCEMENTS AND BREAKTHROUGHS WHICH WILL PROVIDE ALTERNATIVE SOLUTIONS FOR HUMAN HEALTHCARE APPLICATIONS DISCUSSES THE UTILIZATION OF SIC MATERIALS FOR BIOMEDICAL APPLICATIONS PROVIDES A LOGICAL PATHWAY TO UNDERSTAND WHY SIC IS IDEAL FOR SEVERAL CRITICAL APPLICATIONS IN PARTICULAR FOR LONG TERM IMPLANTABLE DEVICES AND WILL SERVE AS A GUIDE TO NEW WAYS TO DESIGN AND DEVELOP ADVANCED MEDICAL DEVICES SERVES AS A REFERENCE FOR NEW DEVELOPMENTS IN THE FIELD AND AS A TECHNOLOGY RESOURCE FOR MEDICAL DOCTORS AND PRACTITIONERS LOOKING TO IDENTIFY AND IMPLEMENT ADVANCED ENGINEERING SOLUTIONS TO EVERYDAY MEDICAL CHALLENGES THAT CURRENTLY LACK LONG TERM COST EFFECTIVE SOLUTIONS

Silicon Carbide Technology for Advanced Human Healthcare Applications

2022-07-13

COMPUTATIONAL INTELLIGENCE AND ITS APPLICATIONS IN HEALTHCARE PRESENTS RAPIDLY GROWING APPLICATIONS OF COMPUTATIONAL INTELLIGENCE FOR HEALTHCARE SYSTEMS INCLUDING INTELLIGENT SYNTHETIC CHARACTERS MAN MACHINE INTERFACE MENU GENERATORS USER ACCEPTANCE ANALYSIS PICTURES ARCHIVING AND COMMUNICATION SYSTEMS COMPUTATIONAL INTELLIGENCE IS THE STUDY OF THE DESIGN OF INTELLIGENT AGENTS WHICH ARE SYSTEMS THAT ACT INTELLIGENTLY THEY DO WHAT THEY THINK ARE APPROPRIATE FOR THEIR CIRCUMSTANCES AND GOALS THEY RE FLEXIBLE TO CHANGING ENVIRONMENTS AND GOALS THEY LEARN FROM EXPERIENCE AND THEY MAKE APPROPRIATE CHOICES GIVEN PERCEPTUAL LIMITATIONS AND FINITE COMPUTATION COMPUTATIONAL INTELLIGENCE PARADIGMS OFFER MANY ADVANTAGES IN MAINTAINING AND ENHANCING THE FIELD OF HEALTHCARE PROVIDES COVERAGE OF FUZZY LOGIC NEURAL NETWORKS EVOLUTIONARY COMPUTATION LEARNING THEORY PROBABILISTIC METHODS TELEMEDICINE AND ROBOTICS APPLICATIONS INCLUDES COVERAGE OF ARTIFICIAL INTELLIGENCE AND BIOLOGICAL APPLICATIONS SOFT COMPUTING IMAGE AND SIGNAL PROCESSING AND GENETIC ALGORITHMS PRESENTS THE LATEST DEVELOPMENTS IN COMPUTATIONAL METHODS IN HEALTHCARE BRIDGES THE GAP BETWEEN OBSOLETE LITERATURE AND CURRENT LITERATURE

Computational Intelligence and Its Applications in Healthcare

2020-08-01

INTERNET OF THINGS IOT APPLICATIONS EMPLOYED FOR HEALTHCARE GENERATE A HUGE AMOUNT OF DATA THAT NEEDS TO BE ANALYZED TO PRODUCE THE EXPECTED REPORTS TO ACCOMPLISH THIS TASK A CLOUD BASED ANALYTICAL SOLUTION IS IDEAL IN ORDER TO GENERATE FASTER REPORTS IN COMPARISON TO THE TRADITIONAL WAY GIVEN THE CURRENT STATE OF THE WORLD IN WHICH EVERY DAY IOT DEVICES ARE DEVELOPED TO PROVIDE HEALTHCARE SOLUTIONS IT IS ESSENTIAL TO CONSIDER THE MECHANISMS USED TO COLLECT AND ANALYZE THE DATA TO PROVIDE THOROUGH REPORTS INTEGRATING AI IN IOT ANALYTICS ON THE CLOUD FOR HEALTHCARE APPLICATIONS APPLIES ARTIFICIAL INTELLIGENCE AI IN EDGE ANALYTICS FOR HEALTHCARE APPLICATIONS ANALYZES THE IMPACT OF TOOLS AND TECHNIQUES IN EDGE ANALYTICS FOR HEALTHCARE AND DISCUSSES SECURITY SOLUTIONS FOR EDGE ANALYTICS IN HEALTHCARE IOT COVERING TOPICS SUCH AS DATA ANALYTICS AND NEXT GENERATION HEALTHCARE SYSTEMS IT IS IDEAL FOR RESEARCHERS ACADEMICIANS TECHNOLOGISTS IT SPECIALISTS DATA SCIENTISTS HEALTHCARE INDUSTRIES IOT DEVELOPERS DATA SECURITY ANALYSTS EDUCATORS AND STUDENTS

Integrating AI in IoT Analytics on the Cloud for Healthcare Applications

2022-01-07

THIS BOOK PROVIDES A COMPREHENSIVE OVERVIEW OF DEEP LEARNING DL IN MEDICAL AND HEALTHCARE APPLICATIONS INCLUDING THE FUNDAMENTALS AND CURRENT ADVANCES IN MEDICAL IMAGE ANALYSIS STATE OF THE ART DL METHODS FOR MEDICAL IMAGE ANALYSIS AND REAL WORLD DEEP LEARNING BASED CLINICAL COMPUTER AIDED DIAGNOSIS SYSTEMS DEEP LEARNING DL IS ONE OF THE KEY TECHNIQUES OF ARTIFICIAL INTELLIGENCE AI AND TODAY PLAYS AN IMPORTANT ROLE IN NUMEROUS ACADEMIC AND INDUSTRIAL AREAS DL INVOLVES USING A NEURAL NETWORK WITH MANY LAYERS DEEP STRUCTURE BETWEEN INPUT AND OUTPUT AND ITS MAIN ADVANTAGE OF IS THAT IT CAN AUTOMATICALLY LEARN DATA DRIVEN HIGHLY REPRESENTATIVE AND HIERARCHICAL FEATURES AND PERFORM FEATURE EXTRACTION AND CLASSIFICATION ON ONE NETWORK DL CAN BE USED TO MODEL OR SIMULATE AN INTELLIGENT SYSTEM OR PROCESS USING ANNOTATED TRAINING DATA RECENTLY DL HAS BECOME WIDELY USED IN MEDICAL APPLICATIONS SUCH AS ANATOMIC MODELLING TUMOUR DETECTION DISEASE CLASSIFICATION COMPUTER AIDED DIAGNOSIS AND SURGICAL PLANNING THIS BOOK IS INTENDED FOR COMPUTER SCIENCE AND ENGINEERING STUDENTS AND RESEARCHERS MEDICAL PROFESSIONALS AND ANYONE INTERESTED USING DL TECHNIQUES

Deep Learning in Healthcare

2019-11-27

THE COVID 19 EPIDEMIC HAS HELPED TO EXPAND THE FUNCTION OF THE INTERNET OF MEDICAL THINGS IN HEALTHCARE AT AN EXPONENTIAL RATE THIS BOOK OFFERS A COMPREHENSIVE EXPLORATION OF IOMT IN THE POST COVID 19 ERA PROVIDING AN OVERVIEW OF MODERN TECHNOLOGIES USED FOR THE

IMPROVEMENT OF HEALTHCARE SUCH AS IOT ARTIFICIAL INTELLIGENCE ROBOTICS BIG DATA AND WEARABLE DEVICES USED IN HEALTHCARE APPLICATIONS WITH A FOCUS ON THE DETECTION AND TREATMENT OF COVID 19 AND RELATED VIRUSES THE VOLUME PRESENTS THE PRINCIPLES STATE OF THE ART DEVELOPMENTS ARCHITECTURE REAL WORLD APPLICATIONS ACTUAL CASE STUDIES RESULTS OF IOMT EXPERIMENTS AND SENSOR BASED SYSTEMS AND MORE THE CHAPTERS LOOK AT VARIOUS ASPECTS OF ARTIFICIAL INTELLIGENCE IN IOMT BASED TELEMEDICINE HEALTH MONITORING EARLY COVID DETECTION AUTOMATIC INTRAVENOUS FLUIDS FEEDS CHEST X RAY IMAGES DATA COLLECTION FOR DECISION MAKING SECURITY OF HEALTH INFORMATION AND MORE THIS VOLUME PROVIDES AN UNDERSTANDING OF THE REAL APPLICATIONS DEVELOPMENT OF HEALTHCARE SYSTEMS ARCHITECTURAL FRAMEWORKS AND MODERN DESIGN ELEMENTS OF HEALTHCARE SYSTEMS

Internet of Medical Things in Smart Healthcare

2023-12-01

CONVOLUTIONAL NEURAL NETWORKS FOR MEDICAL APPLICATIONS CONSISTS OF RESEARCH INVESTIGATED BY THE AUTHOR CONTAINING STATE OF THE ART KNOWLEDGE AUTHORED BY DR TEOH TEIK TOE IN APPLYING CONVOLUTIONAL NEURAL NETWORKS CNNS TO THE MEDICAL IMAGERY DOMAIN THIS BOOK WILL EXPOSE RESEARCHERS TO VARIOUS APPLICATIONS AND TECHNIQUES APPLIED WITH DEEP LEARNING ON MEDICAL IMAGES AS WELL AS UNIQUE TECHNIQUES TO ENHANCE THE PERFORMANCE OF THESE NETWORKS THROUGH THE VARIOUS CHAPTERS AND TOPICS COVERED THIS BOOK PROVIDES KNOWLEDGE ABOUT THE FUNDAMENTALS OF DEEP LEARNING TO A COMMON READER WHILE ALLOWING A RESEARCH SCHOLAR TO IDENTIFY SOME FUTURISTIC PROBLEM AREAS THE TOPICS COVERED INCLUDE BRAIN TUMOR CLASSIFICATION PNEUMONIA IMAGE CLASSIFICATION WHITE BLOOD CELL CLASSIFICATION SKIN CANCER CLASSIFICATION AND DIABETIC RETINOPATHY DETECTION THE FIRST CHAPTER WILL BEGIN BY INTRODUCING VARIOUS TOPICS USED IN TRAINING CNNS TO HELP READERS WITH COMMON CONCEPTS COVERED ACROSS THE BOOK EACH CHAPTER BEGINS BY PROVIDING INFORMATION ABOUT THE DISEASE ITS IMPLICATIONS TO THE AFFECTED AND HOW THE USE OF CNNS CAN HELP TO TACKLE ISSUES FACED IN HEALTHCARE READERS WOULD BE EXPOSED TO VARIOUS PERFORMANCE ENHANCEMENT TECHNIQUES WHICH HAVE BEEN TRIED AND TESTED SUCCESSFULLY SUCH AS SPECIFIC DATA AUGMENTATIONS AND IMAGE PROCESSING TECHNIQUES UTILIZED TO IMPROVE THE ACCURACY OF THE MODELS

Convolutional Neural Networks for Medical Applications

2023-03-23

THIS BOOK LOOKS AT THE GROWING SEGMENT OF INTERNET OF THINGS TECHNOLOGY IOT KNOWN AS INTERNET OF MEDICAL THINGS IOMT AN AUTOMATED SYSTEM THAT AIDS IN BRIDGING THE GAP BETWEEN ISOLATED AND RURAL COMMUNITIES AND THE CRITICAL HEALTHCARE SERVICES THAT ARE AVAILABLE IN MORE POPULATED AND URBAN AREAS MANY TECHNOLOGICAL ASPECTS OF IOMT ARE STILL BEING RESEARCHED AND DEVELOPED WITH THE OBJECTIVE OF MINIMIZING THE COST AND IMPROVING THE PERFORMANCE OF THE OVERALL HEALTHCARE SYSTEM THIS BOOK FOCUSES ON INNOVATIVE IOMT METHODS AND SOLUTIONS BEING DEVELOPED FOR USE IN THE APPLICATION OF HEALTHCARE SERVICES INCLUDING POST SURGERY CARE VIRTUAL HOME ASSISTANCE SMART REAL TIME PATIENT MONITORING IMPLANTABLE SENSORS AND CAMERAS AND DIAGNOSIS AND TREATMENT PLANNING IT ALSO EXAMINES CRITICAL ISSUES AROUND THE TECHNOLOGY SUCH AS SECURITY VULNERABILITIES IOMT MACHINE LEARNING APPROACHES AND MEDICAL DATA COMPRESSION FOR LOSSLESS DATA TRANSMISSION AND ARCHIVING INTERNET OF MEDICAL THINGS IS A VALUABLE REFERENCE FOR RESEARCHERS STUDENTS AND

POSTGRADUATES WORKING IN BIOMEDICAL ELECTRONICS AND COMMUNICATIONS ENGINEERING AS WELL AS PRACTICING HEALTHCARE PROFESSIONALS

Internet of Medical Things

2021-04-13

THIS BOOK HIGHLIGHTS VARIOUS EVOLUTIONARY ALGORITHM TECHNIQUES FOR VARIOUS MEDICAL CONDITIONS AND INTRODUCES MEDICAL APPLICATIONS OF EVOLUTIONARY COMPUTATION FOR REAL TIME DIAGNOSIS EVOLUTIONARY INTELLIGENCE FOR HEALTHCARE APPLICATIONS PRESENTS HOW EVOLUTIONARY INTELLIGENCE CAN BE USED IN SMART HEALTHCARE SYSTEMS INVOLVING BIG DATA ANALYTICS MOBILE HEALTH PERSONALIZED MEDICINE AND CLINICAL TRIAL DATA MANAGEMENT IT FOCUSES ON EMERGING CONCEPTS AND APPROACHES AND HIGHLIGHTS VARIOUS EVOLUTIONARY ALGORITHM TECHNIQUES USED FOR EARLY DISEASE DIAGNOSIS PREDICTION AND PROGNOSIS FOR MEDICAL CONDITIONS THE BOOK ALSO PRESENTS ETHICAL ISSUES AND CHALLENGES THAT CAN OCCUR WITHIN THE HEALTHCARE SYSTEM RESEARCHERS HEALTHCARE PROFESSIONALS DATA SCIENTISTS SYSTEMS ENGINEERS STUDENTS PROGRAMMERS CLINICIANS AND POLICYMAKERS WILL FIND THIS BOOK OF INTEREST

Evolutionary Intelligence for Healthcare Applications

2022-11-23

TECHNOLOGY CONTINUES TO BENEFIT DIFFERENT ASPECTS OF OUR SOCIETY AS SUCH THE HEALTH AND SOCIAL CARE FIELD HAS BEGUN TO UTILISE THESE ADVANTAGES TOWARDS IMPROVEMENTS IN HEALTH INFORMATICS AND HEALTHCARE APPLICATIONS THIS PROVIDES THE LATEST AND MOST RELEVANT RESEARCH ON THE UNDERSTANDING EXPANSION AND SOLUTIONS ON TECHNOLOGIES USED FOR IMPROVEMENTS IN THE HEALTH AND SOCIAL CARE FIELD

Information Systems and Technologies for Enhancing Health and Social Care

2013

BIG DATA AND THE INTERNET OF THINGS IOT PLAY A VITAL ROLE IN PREDICTION SYSTEMS USED IN BIOLOGICAL AND MEDICAL APPLICATIONS PARTICULARLY FOR RESOLVING ISSUES RELATED TO DISEASE BIOLOGY AT DIFFERENT SCALES MODELLING AND INTEGRATING MEDICAL BIG DATA WITH THE IOT HELPS IN BUILDING EFFECTIVE PREDICTION SYSTEMS FOR AUTOMATIC RECOMMENDATIONS OF DIAGNOSIS AND TREATMENT THE ABILITY TO MINE PROCESS ANALYSE CHARACTERIZE CLASSIFY AND CLUSTER A VARIETY AND WIDE VOLUME OF MEDICAL DATA IS A CHALLENGING TASK THERE IS A GREAT DEMAND FOR THE DESIGN AND DEVELOPMENT OF METHODS DEALING WITH CAPTURING AND AUTOMATICALLY ANALYSING MEDICAL DATA FROM IMAGING SYSTEMS AND IOT SENSORS ADDRESSING ANALYTICAL AND LEGAL ISSUES AND RESEARCH ON INTEGRATION OF BIG DATA ANALYTICS WITH RESPECT TO CLINICAL PRACTICE AND CLINICAL UTILITY ARCHITECTURES AND CLUSTERING TECHNIQUES FOR IOT DATA PROCESSING EFFECTIVE FRAMEWORKS FOR REMOVAL OF MISCLASSIFIED INSTANCES PRACTICALITY OF BIG DATA ANALYTICS METHODOLOGICAL AND TECHNICAL ISSUES POTENTIAL OF HADOOP IN MANAGING HEALTHCARE DATA IS THE NEED OF THE HOUR THIS BOOK INTEGRATES DIFFERENT ASPECTS USED IN THE

FIELD OF HEALTHCARE SUCH AS BIG DATA IOT SOFT COMPUTING MACHINE LEARNING AUGMENTED REALITY ORGANS ON CHIP PERSONALIZED DRUGS IMPLANTABLE ELECTRONICS INTEGRATION OF BIO INTERFACES AND WEARABLE SENSORS DEVICES PRACTICAL BODY AREA NETWORK BAN AND ARCHITECTURES OF WEB SYSTEMS KEY FEATURES ADDRESSES VARIOUS APPLICATIONS OF MEDICAL BIG DATA AND INTERNET OF MEDICAL THINGS IN REAL TIME ENVIRONMENT HIGHLIGHTS RECENT INNOVATIONS DESIGNS DEVELOPMENTS AND TOPICS OF INTEREST IN MACHINE LEARNING TECHNIQUES FOR CLASSIFICATION OF MEDICAL DATA PROVIDES BACKGROUND AND SOLUTIONS TO EXISTING CHALLENGES IN MEDICAL BIG DATA AND INTERNET OF MEDICAL THINGS PROVIDES OPTIMIZATION TECHNIQUES AND PROGRAMMING MODELS TO PARALLELIZE THE COMPUTATIONALLY INTENSIVE TASKS IN DATA MINING OF MEDICAL DATA DISCUSSES INTERACTIONS ADVANTAGES LIMITATIONS CHALLENGES AND FUTURE PERSPECTIVES OF IOT BASED REMOTE HEALTHCARE MONITORING SYSTEMS INCLUDES DATA PRIVACY AND SECURITY ANALYSIS OF CRYPTOGRAPHY METHODS FOR THE OF MEDICAL THINGS WOMT PRESENTS CASE STUDIES ON THE NEXT GENERATION MEDICAL CHAIR ELECTRONIC NOSE AND PILL CAM ARE ALSO PRESENTED

Medical Big Data and Internet of Medical Things

2018-10-25

THE BOOK DETAILS DEEP LEARNING MODELS LIKE ANN RNN LSTM IN MANY INDUSTRIAL SECTORS SUCH AS TRANSPORTATION HEALTHCARE MILITARY AGRICULTURE WITH VALID AND EFFECTIVE RESULTS WHICH WILL HELP RESEARCHERS FIND SOLUTIONS TO THEIR DEEP LEARNING RESEARCH PROBLEMS WE HAVE ENTERED THE ERA OF SMART WORLD DEVICES WHERE ROBOTS OR MACHINES ARE BEING USED IN MOST APPLICATIONS TO SOLVE REAL WORLD PROBLEMS THESE SMART MACHINES DEVICES REDUCE THE BURDEN ON DOCTORS WHICH IN TURN MAKE THEIR LIVES EASIER AND THE LIVES OF THEIR PATIENTS BETTER THEREBY INCREASING PATIENT LONGEVITY WHICH IS THE ULTIMATE GOAL OF COMPUTER VISION THEREFORE THE GOAL IN WRITING THIS BOOK IS TO ATTEMPT TO PROVIDE COMPLETE INFORMATION ON RELIABLE DEEP LEARNING MODELS REQUIRED FOR E HEALTHCARE APPLICATIONS WAYS IN WHICH DEEP LEARNING CAN ENHANCE HEALTHCARE IMAGES OR TEXT DATA FOR MAKING USEFUL DECISIONS ARE DISCUSSED ALSO PRESENTED ARE RELIABLE DEEP LEARNING MODELS SUCH AS NEURAL NETWORKS CONVOLUTIONAL NEURAL NETWORKS BACKPROPAGATION AND RECURRENT NEURAL NETWORKS WHICH ARE INCREASINGLY BEING USED IN MEDICAL IMAGE PROCESSING INCLUDING FOR COLORIZATION OF BLACK AND WHITE X RAY IMAGES AUTOMATIC MACHINE TRANSLATION IMAGES OBJECT CLASSIFICATION IN PHOTOGRAPHS IMAGES CT SCANS CHARACTER OR USEFUL GENERATION ECG IMAGE CAPTION GENERATION ETC HENCE RELIABLE DEEP LEARNING METHODS FOR THE PERCEPTION OR PRODUCTION OF BETTER RESULTS ARE A NECESSITY FOR HIGHLY EFFECTIVE E HEALTHCARE APPLICATIONS CURRENTLY THE MOST DIFFICULT DATA RELATED PROBLEM THAT NEEDS TO BE SOLVED CONCERNS THE RAPID INCREASE OF DATA OCCURRING EACH DAY VIA BILLIONS OF SMART DEVICES TO ADDRESS THE GROWING AMOUNT OF DATA IN HEALTHCARE APPLICATIONS CHALLENGES SUCH AS NOT HAVING STANDARD TOOLS EFFICIENT ALGORITHMS AND A SUFFICIENT NUMBER OF SKILLED DATA SCIENTISTS NEED TO BE OVERCOME HENCE THERE IS GROWING INTEREST IN INVESTIGATING DEEP LEARNING MODELS AND THEIR USE IN E HEALTHCARE APPLICATIONS AUDIENCE RESEARCHERS IN ARTIFICIAL INTELLIGENCE BIG DATA COMPUTER SCIENCE AND ELECTRONIC ENGINEERING AS WELL AS INDUSTRY ENGINEERS IN TRANSPORTATION HEALTHCARE BIOMEDICINE MILITARY AGRICULTURE

Computational Analysis and Deep Learning for Medical Care

2021-08-10

THIS BOOK CONTAINS EXAMPLES OF CONVINCING CASES THAT WERE SELECTED FROM ALL OVER EUROPE AND PRESENTED BY EXPERIENCED USERS AND HEALTHCARE DECISION MAKERS THESE EXAMPLES ARE BASED ON SUCCESSFUL CASES OF IMPLEMENTATION OF HEALTH TELEMATICS APPLICATIONS AND SERVICES SUCH AS ELECTRONIC HEALTHCARE RECORDS AND HOSPITAL INFORMATION SYSTEMS SPECIALISED DEPARTMENTAL SYSTEMS EMERGENCY TELEMEDICINE AND REGIONAL HEALTHCARE NETWORKS EXAMPLES OF EXPERIENCES RELATING TO MEDICAL INFORMATICS EDUCATION ARE ALSO INCLUDED SINCE THE EDUCATION IS A CRUCIAL FACTOR IN THE AREA OF USER ACCEPTANCE CASES OF SUCCESSFUL PROMOTION OF GOOD QUALITY APPLICATIONS AND OTHER ISSUES RELATED TO USERS AND TECHNOLOGY ARE INCLUDED IN THE LAST SECTION THE READERS WILL FIND QUALITATIVE AND QUANTITATIVE DESCRIPTIONS OF MANY USEFUL EXPERIENCES OF IMPLEMENTATION AND USE OF HEALTH TELEMATICS SYSTEMS AND SERVICES THE TEXT OF MANY OF THE PAPERS IS VERY RICH IN QUANTITATIVE ANALYSIS AND STATISTICS PROVIDING GOOD SOURCE OF REFERENCE

User Acceptance of Health Telematics Applications

1998

BIG DATA ANALYTICS AND MEDICAL INFORMATION SYSTEMS PRESENTS THE VALUABLE USE OF ARTIFICIAL INTELLIGENCE AND BIG DATA ANALYTICS IN HEALTHCARE AND MEDICAL SCIENCES IT FOCUSES ON THEORIES METHODS AND APPROACHES IN WHICH DATA ANALYTIC TECHNIQUES CAN BE USED TO EXAMINE MEDICAL DATA TO PROVIDE A MEANINGFUL PATTERN FOR CLASSIFICATION DIAGNOSIS TREATMENT AND PREDICTION OF DISEASES THE BOOK DISCUSSES TOPICS SUCH AS THEORIES AND CONCEPTS OF THE FIELD AND HOW BIG MEDICAL DATA MINING TECHNIQUES AND APPLICATIONS CAN BE APPLIED TO CLASSIFICATION DIAGNOSIS TREATMENT AND PREDICTION OF DISEASES IN ADDITION IT COVERS SOCIAL BEHAVIORAL AND MEDICAL FAKE NEWS ANALYTICS TO PREVENT MEDICAL MISINFORMATION AND MYTHS IT IS A VALUABLE RESOURCE FOR GRADUATE STUDENTS RESEARCHERS AND MEMBERS OF BIOMEDICAL FIELD WHO ARE INTERESTED IN LEARNING MORE ABOUT ANALYTIC TOOLS TO SUPPORT THEIR WORK PRESENTS THEORIES METHODS AND APPROACHES IN WHICH DATA ANALYTIC TECHNIQUES ARE USED FOR MEDICAL DATA BRINGS PRACTICAL INFORMATION ON HOW TO USE BIG DATA FOR CLASSIFICATION DIAGNOSIS TREATMENT AND PREDICTION OF DISEASES DISCUSSES SOCIAL BEHAVIORAL AND MEDICAL FAKE NEWS ANALYTICS FOR MEDICAL INFORMATION SYSTEMS

Big Data Analytics for Healthcare

2022-05-19

NANOTECHNOLOGY IS OPENING UP NEW AVENUES IN ALL SCIENTIFIC AND TECHNOLOGICAL FIELDS AMONG THE NOVEL APPLICATIONS BIOACTIVES AND NUTRACEUTICALS ARE FAST GROWING AREAS OF NANO RESEARCH FOR BETTER HEALTHCARE SOLUTIONS A VARIETY OF NANOFORMULATIONS SUCH AS POLYMERIC NANOPARTICLES NANOCAPSULES NANOEMULSIONS TRANSFEROSOMES AND ETHOSOMES LIPOSOMES LIPOSPHERES AND LIPID POLYMER HYBRID NANOPARTICLES HAVE PROVED VALUABLE IN BIOACTIVE DELIVERY AND FOOD MATERIALS FURTHER NEW HERBAL DRUGS AND NUTRACEUTICALS ARE

REPORTED TO HAVE REMARKABLE ADVANTAGES OVER CONVENTIONAL FORMULATIONS OF PLANT ACTIVES AND EXTRACTS INCLUDING ENHANCED SOLUBILITY BIOAVAILABILITY MULTIPLE DRUG DELIVERY GREATER STABILITY SUSTAINED DELIVERY IMPROVED TISSUE MACROPHAGE DISTRIBUTION PROTECTION FROM TOXICITY ENHANCEMENT OF PHARMACOLOGICAL ACTIVITY AND PROTECTION FROM PHYSICAL AND CHEMICAL DEGRADATION THIS BOOK FOCUSES ON THE ADVANCED NANOMATERIALS THAT ARE UTILIZED FOR THE ENCAPSULATION OF NUTRIENTS VITAMIN PHYTOCONSTITUENTS AS WELL AS THEIR OTHER HEALTHCARE BENEFITS

Nanomedicine for Bioactives

2020-05-14

IN THE LAST TWO DECADES MACHINE LEARNING HAS BEEN DRAMATICALLY DEVELOPED AND IS STILL EXPERIENCING A FAST AND EVER LASTING CHANGE IN PARADIGM METHODOLOGY APPLICATIONS AND OTHER ASPECTS THIS BOOK OFFERS A COMPENDIUM OF CURRENT AND EMERGING MACHINE LEARNING PARADIGMS IN HEALTHCARE INFORMATICS AND REFLECTS ON THE DIVERSITY AND COMPLEXITY MACHINE LEARNING APPROACHES AND APPLICATIONS APPLIED INTELLIGENCE FOR HEALTHCARE DATA ANALYTICS PRESENTS A VARIETY OF TECHNIQUES DESIGN TO ENHANCE AND EMPOWER MULTI DISCIPLINARY AND MULTI INSTITUTIONAL MACHINE LEARNING RESEARCH IT PROVIDES MANY CASE STUDIES AND A PANORAMIC VIEW OF DATA AND MACHINE LEARNING TECHNIQUES PROVIDING THE OPPORTUNITY FOR NOVEL INSIGHTS AND DISCOVERIES THE BOOK EXPLORES THE THEORY AND PRACTICAL APPLICATIONS IN HEALTHCARE AND INCLUDES A GUIDED TOUR OF MACHINE LEARNING ALGORITHMS ARCHITECTURE DESIGN ALONG WITH INTERDISCIPLINARY CHALLENGES THIS BOOK IS USEFUL TO RESEARCH SCHOLARS AND STUDENTS INVOLVED IN CRITICAL CONDITION ANALYSIS AND COMPUTATION MODELS

Machine Learning Approaches and Applications in Applied Intelligence for Healthcare Data Analytics

2022

DIGITAL HEALTHCARE IS HETEROGENEOUS ALONG THE ENTIRE TREATMENT PATHWAY RANGING FROM MONITORING APPLICATIONS AND ARTIFICIAL INTELLIGENCE BASED DIAGNOSTICS TO SUPPORT FOR VIRTUAL REALITY SURGERY SINCE THE INTRODUCTION OF THE DIGITAL HEALTH ACT IN GERMANY IN EARLY 2020 THERE HAS BEEN A PUSH TOWARD DIGITAL INNOVATIVE SOLUTIONS ESPECIALLY IN THE OUTPATIENT SECTOR THIS BOOK ANALYZES CURRENT DIGITAL HEALTH LAW FROM AN ECONOMIC PERSPECTIVE COMBINING THEORY WITH REAL WORLD APPLICATIONS IT EXAMINES BOTH THE INCENTIVES AND MARKET ACCESS PATHWAYS FOR DIGITAL SOLUTIONS AND THE PRICE EFFECTS BROUGHT ABOUT BY THE NEW REGULATORY FRAMEWORK IN GERMANY FURTHER IT DISCUSSES THE DIFFICULTIES IN PRICING DUE TO THE MONOPOLISTIC BFARM REGISTER AND NEGOTIATIONS WITH THE ASSOCIATION OF ALL GERMAN HEALTH INSURANCE COMPANIES THE BOOK ADDRESSES A WIDE RANGE OF TOPICS INCLUDING INCENTIVES FOR INNOVATION SPECIFICS OF DIGITAL HEALTH APPLICATIONS REIMBURSEMENT AND FINANCING OPTIONS FOR DIGITAL HEALTH SOLUTIONS LASTLY IT PRESENTS AN OUTLOOK FOR THE FUTURE AND A COMPARISON BETWEEN GERMANY AND OTHER COUNTRIES NAMELY THE USA AND JAPAN GIVEN ITS SCOPE THIS BOOK WILL APPEAL TO SCHOLARS OF HEALTH ECONOMICS HEALTHCARE MANAGEMENT AND PUBLIC HEALTH AS WELL AS PRACTITIONERS AND PROFESSIONALS IN THE PUBLIC HEALTH SECTOR

Digital Healthcare in Germany

2022-05-10

THE BEST SOURCE FOR CUTTING EDGE INSIGHTS INTO AI IN HEALTHCARE OPERATIONS AI IN HEALTHCARE HOW ARTIFICIAL INTELLIGENCE IS CHANGING IT OPERATIONS AND INFRASTRUCTURE SERVICES COLLECTS ORGANIZES AND PROVIDES THE LATEST MOST UP TO DATE RESEARCH ON THE EMERGING TECHNOLOGY OF ARTIFICIAL INTELLIGENCE AS IT IS APPLIED TO HEALTHCARE OPERATIONS WRITTEN BY A WORLD LEADING TECHNOLOGY EXECUTIVE SPECIALIZING IN HEALTHCARE IT THIS BOOK PROVIDES CONCRETE EXAMPLES AND PRACTICAL ADVICE ON HOW TO DEPLOY ARTIFICIAL INTELLIGENCE SOLUTIONS IN YOUR HEALTHCARE ENVIRONMENT AI IN HEALTHCARE REVEALS TO READERS HOW THEY CAN TAKE ADVANTAGE OF CONNECTING REAL TIME EVENT CORRELATION AND RESPONSE AUTOMATION TO MINIMIZE IT DISRUPTIONS IN CRITICAL HEALTHCARE IT FUNCTIONS THIS BOOK PROVIDES IN DEPTH COVERAGE OF ALL THE MOST IMPORTANT AND CENTRAL TOPICS IN THE HEALTHCARE APPLICATIONS OF ARTIFICIAL INTELLIGENCE INCLUDING HEALTHCARE IT AI CLINICAL OPERATIONS AI OPERATIONAL INFRASTRUCTURE PROJECT PLANNING METRICS REPORTING AND SERVICE PERFORMANCE AIOPS IN AUTOMATION AIOPS CLOUD OPERATIONS FUTURE OF AI WRITTEN IN AN ACCESSIBLE AND STRAIGHTFORWARD STYLE THIS BOOK WILL BE INVALUABLE TO IT MANAGERS ADMINISTRATORS AND ENGINEERS IN HEALTHCARE SETTINGS AS WELL AS ANYONE WITH AN INTEREST OR STAKE IN HEALTHCARE TECHNOLOGY

AI in Healthcare

2021-01-27

THE TRADITIONAL PATHOPHYSIOLOGY BOOK IS WRITTEN FOR THE MEDICAL STUDENT NURSING AND ALLIED HEALTH STUDENTS USUALLY AT THE SOPHOMORE LEVEL HAVE SIMPLY HAD TO MAKE DO WITH CUMBERSOME 1500 TO 1600 PAGE BOOKS THAT ASSUME CONSIDERABLY MORE SCIENCE BACKGROUND THAN THE TYPICAL ALLIED HEALTH STUDENT HAS ACQUIRED THE NOWAK BOOK IS NOT ONLY BRIEFER AT 700 PAGES BUT IS ORGANIZED IN A MANNER THAT BRINGS THE PRINCIPLES OF PATHOPHYSIOLOGY TO THE FOREFRONT THE AUTHORS FOCUS ON THE RELATIVELY FEW PATTERNS OF DISEASE RATHER THAN ASKING STUDENTS TO MEMORIZE EXTENSIVE CATALOGS OF SPECIFIC DISEASES THIS CONCEPTUAL APPROACH IS MORE SUITED TO THE ALLIED HEALTH STUDENT THAN THE DISEASE CENTERED APPROACH FEATURED IN THE MAJOR COMPETITORS

Pathophysiology: Concepts and Applications for Health Care Professionals

2003-03-06

DIGITAL DISRUPTION IN HEALTHCARE IS GENERATING NEW TECHNOLOGIES APPLICATIONS AND LARGE DATA SETS AND THESE ARE ALL PRECIPITATING SIGNIFICANT CHANGES IN HEALTHCARE PROCESSES EMERGING APPLICATIONS DUE TO DIGITAL DISRUPTION AND THEIR IMPACT ON HEALTHCARE DELIVERY AND QUALITY ARE BECOMING SOME OF THE KEY FOCUS AREAS OF RESEARCH HOWEVER TO DATE SYSTEMATIC GENERALIZABLE FULL SCALE EVALUATION OF THESE NEW TECHNOLOGIES APPLICATIONS IS LACKING LITTLE IS KNOWN ABOUT THE NET SHORT OR LONG TERM HEALTH AND WELLNESS IMPACTS OF DIGITAL TECHNOLOGIES SIMILARLY THE CARE DELIVERY AND MANAGEMENT PROCESS CHANGES CAUSED BY DIGITAL DISRUPTION ARE FORCING HEALTHCARE ORGANIZATIONS TO REACT RATHER THAN PLAN FOR

THEM IN ADVANCE GIVEN THESE GAPS THIS BOOK ADDRESSES THE TECHNOLOGY APPLICATIONS DATA AND PROCESS ASPECTS OF DIGITAL DISRUPTION IN HEALTHCARE THIS VOLUME IS A COLLECTION OF KEY AREAS IN HEALTH AND WELLNESS IMPACTED BY DIGITAL DISRUPTION IT HIGHLIGHTS THE BENEFITS BARRIERS FACILITATORS AND TRANSFORMATIVE FORCES THAT ARE SHAPING HEALTHCARE DIGITAL DISRUPTION TOPICS EXPLORED IN THE CHAPTERS INCLUDE TOWARDS NETWORK MEDICINE IMPLEMENTATION OF PANOMICS AND ARTIFICIAL INTELLIGENCE FOR PRECISION MEDICINE TELEHEALTH IMPLEMENTATION A SYNOPSIS OF PATIENTS EXPERIENCE OF CLINICAL OUTCOMES REALISING THE HEALTHCARE VALUE PROPOSITION OF BETTER ACCESS QUALITY AND VALUE OF CARE BY INCORPORATING THE SOCIAL DETERMINANTS OF HEALTH WITH DIGITAL HEALTH THE INTERNET HOSPITAL IN THE TIME OF COVID 19 AN EXAMPLE FROM CHINA GIVEN THE DIVERSE INTEREST IN HEALTHCARE DELIVERY SOLUTIONS TODAY THE NEED IS BROAD ACROSS ACADEMIA AND THE HEALTHCARE INDUSTRY FOR A COMPREHENSIVE RESOURCE FOR TEACHING PRACTICE AND RESEARCH DIGITAL DISRUPTION IN HEALTHCARE IS A POINT OF ENTRY RESOURCE FOR TRANSFERRING THEORY INTO PRACTICE FOR HEADS OF IT DEPARTMENTS IN HOSPITALS CONSULTANTS AND ACADEMIA AS WELL AS SCHOLARS AND RESEARCHERS BOTH GRADUATE AND UNDERGRADUATE STUDENTS AS WELL AS CERTIFICATE SEEKING HEALTH INFORMATICS AND PUBLIC HEALTH STUDENTS WOULD BENEFIT FROM THIS BOOK FURTHERMORE IT IS USEFUL FOR HEALTHCARE STAKEHOLDERS INCLUDING HEALTHCARE PROFESSIONALS CLINICIANS MEDICAL ADMINISTRATORS MANAGERS CONSULTANTS POLICY MAKERS AND IT PRACTITIONERS WITHIN THE HEALTHCARE SPACE

Digital Disruption in Healthcare

2022-06-23

ENERGY EFFICIENCY OF MEDICAL DEVICES AND HEALTHCARE FACILITIES PROVIDES COMPREHENSIVE COVERAGE OF CUTTING EDGE INTERDISCIPLINARY RESEARCH AND COMMERCIAL SOLUTIONS IN THIS FIELD THE AUTHORS DISCUSS ENERGY RELATED CHALLENGES SUCH AS ENERGY EFFICIENT DESIGN INCLUDING RENEWABLE ENERGY OF DIFFERENT MEDICAL DEVICES FROM A HARDWARE AND MECHANICAL PERSPECTIVES AS WELL AS ENERGY MANAGEMENT SOLUTIONS AND TECHNIQUES IN HEALTHCARE NETWORKS AND FACILITIES THEY ALSO DISCUSS ENERGY RELATED TRADE OFFS TO MAXIMIZE THE MEDICAL DEVICES AVAILABILITY ESPECIALLY BATTERY OPERATED ONES WHILE PROVIDING IMMEDIATE RESPONSE AND LOW LATENCY COMMUNICATION IN EMERGENCY SITUATIONS SUSTAINABILITY AND ROBUSTNESS FOR CHRONIC DISEASE TREATMENT IN ADDITION TO HIGH PROTECTION AGAINST CYBER ATTACKS THAT MAY THREATEN PATIENTS LIVES FINALLY THE BOOK EXAMINES TECHNOLOGIES AND FUTURE TRENDS OF NEXT GENERATION HEALTHCARE FROM AN ENERGY EFFICIENCY AND MANAGEMENT POINT OF VIEW SUCH AS PERSONALIZED OR SMART HEALTH AND THE INTERNET OF MEDICAL THINGS IOMT WHERE PATIENTS CAN PARTICIPATE IN THEIR OWN TREATMENT THROUGH INNOVATIVE MEDICAL DEVICES AND SOFTWARE APPLICATIONS AND TOOLS THE BOOKS APPLIED APPROACH MAKES IT A USEFUL RESOURCE FOR ENGINEERING RESEARCHERS AND PRACTITIONERS OF ALL LEVELS INVOLVED IN MEDICAL DEVICES DEVELOPMENT HEALTHCARE SYSTEMS AND ENERGY MANAGEMENT OF HEALTHCARE FACILITIES GRADUATE STUDENTS IN MECHANICAL AND ELECTRIC ENGINEERING AND COMPUTER SCIENCE STUDENTS AND PROFESSIONALS ALSO BENEFIT PROVIDES IN DEPTH KNOWLEDGE AND UNDERSTANDING OF THE BENEFITS OF ENERGY EFFICIENCY IN THE DESIGN OF MEDICAL DEVICES AND HEALTHCARE NETWORKS AND FACILITIES PRESENTS BEST PRACTICES AND STATE OF ART TECHNIQUES AND COMMERCIAL SOLUTIONS IN ENERGY MANAGEMENT OF HEALTHCARE NETWORKS AND SYSTEMS EXPLORES KEY ENERGY TRADEOFFS TO PROVIDE SCALABLE ROBUST AND EFFECTIVE HEALTHCARE SYSTEMS AND NETWORKS

Energy Efficiency of Medical Devices and Healthcare Applications

2020-02-15

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