Microcontroller Based Wireless Heart Rate Telemonitor For

This volume contains 73 papers presented at CSI 2014: Emerging ICT for Bridging the Future: Proceedings of the 49th Annual Convention of Computer Society of India. The convention was held during 12-14, December, 2014 at Hyderabad, Telangana, India. This volume contains papers mainly focused on Fuzzy Systems, Image Processing, Software Engineering, Cyber Security and Digital Forensic, E-Commerce, Big Data, Cloud Computing and ICT applications.
This volume presents the contributions of the fifth International Conference on Advancements of Medicine and Health Care through Technology (Meditech 2016), held in in Cluj-Napoka, Romania. The papers of this Proceedings volume present new developments in - Health Care Technology, - Medical Devices, Measurement and Instrumentation, - Medical Imaging, Image and Signal Processing, - Modeling and Simulation, - Molecular Bioengineering, - Biomechanics.
Topics of interest include, but are not limited to Software and Hardware Architectures for Embedded Systems Systems on Chip (SoCs) and Multicore Systems Communications, Networking and Connectivity Sensors and Sensor Networks Mobile and Pervasive Ubiquitous Computing Distributed Embedded ComputingReal Time Systems Adaptive Systems Reconfigurable Systems Design Methodology and Tools Application Analysis and Parallelization System Architecture Synthesis Multi objective Optimization Low power Design and Energy Management Hardware Software Simulation Rapid prototyping Testing and Benchmarking Micro and Nano Technology Organic Flexible Printed Electronics MEMS VLSI Design and Implementation Microcontroller and FPGA Implementation Embedded Real Time Operating Systems Cloud Computing in Embedded System Development Digital Filter Design Digital Signal Processing and Applications Image and Multidimensional Signal Processing Embedded Systems in Multimedia, Related fileds
M-health can be defined as the ‘emerging mobile communications and network technologies for healthcare systems.' This book paves the path toward understanding the future of m-health technologies and services and also introducing the impact of mobility on existing e-health and commercial telemedical systems. M-Health: Emerging Mobile Health Systems presents a new and forward-looking source of information that explores the present and future trends in the applications of current and emerging wireless communication and network technologies for different healthcare scenaria. It also provides a discovery path on the synergies between the 2.5G and 3G systems and other relevant computing and information technologies and how they prescribe the way for the next generation of m-health services. The book contains 47 chapters, arranged in five thematic sections: Introduction to Mobile M-health Systems, Smart Mobile Applications for Health Professionals, Signal, Image, and Video Compression for M-health Applications, Emergency Health Care Systems and Services, Echography Systems and Services, and Remote and Home Monitoring. This book is intended for all those working in the field of information technologies in biomedicine, as well as for people working in future applications of wireless communications and wireless telemedical systems. It provides different levels of material to researchers, computing engineers, and medical practitioners interested in emerging e-health systems. This book will be a useful reference for all the readers in this important and growing field of research, and will contribute to the roadmap of future m-health systems and improve the development of effective healthcare delivery systems.
The field of SMART technologies is an interdependent discipline. It involves the latest burning issues ranging from machine learning, cloud computing, optimisations, modelling techniques, Internet of Things, data analytics, and Smart Grids among others, that are all new fields. It is an applied and multi-disciplinary subject with a focus on Specific, Measurable, Achievable,

Realistic & Timely system operations combined with Machine intelligence & Real-Time computing. It is not possible for any one person to comprehensively cover all aspects relevant to SMART Computing in a limited-extent work. Therefore, these conference proceedings address various issues through the deliberations by distinguished Professors and researchers. The SMARTCOM 2020 proceedings contain tracks dedicated to different areas of smart technologies such as Smart System and Future Internet, Machine Intelligence and Data Science, Real-Time and VLSI Systems, Communication and Automation Systems. The proceedings can be used as an advanced reference for research and for courses in smart technologies taught at graduate level.

This book features selected papers presented at the Fourth International Conference on Nanoelectronics, Circuits and Communication Systems (NCCS 2018). Covering topics such as MEMS and nanoelectronics, wireless communications, optical communications, instrumentation, signal processing, the Internet of Things, image processing, bioengineering, green energy, hybrid vehicles, environmental science, weather forecasting, cloud computing, renewable energy, RFID, CMOS sensors, actuators, transducers, telemetry systems, embedded systems, and sensor network applications in mines, it offers a valuable resource for young scholars, researchers, and academics alike.

This book is a printed edition of the Special Issue "Real-Time Embedded Systems" that was published in Electronics

The book includes 61 selected papers from 106 presented at the second International Conference on Machine Automation (ICMA2000). The conference focused, for the first time, on human friendly mechantronics which covers machine systems interacting with human beings, psychological, physiological, and physical behaviors of the human being itself, robotics, human-mimetic mechanical systems, commercial application examples and so on. Machine automation has owed a lot to mechatronics technology in the last decades, however, a paradigm shift is desired and emphasized in the 21st century in every aspect of our society, and mechantronics is not an exception. The paradigm shift in mechatronics is a pursuit of productivity and efficiency to the preference of humans, and it is time that a new concept of a human friendly robot must be proposed that is welcome by human users. The book aims to offer the most up-to-date and valuable information on: •Human Interface & Communication •Human Support Technology •Actuator & Control •Vision & Sensing •Robotics and Design •Manufacturing System We believe this book will bring advanced knowledge and valuable information to the industries as well as to academics and will contribute to the further development in mechatronics and its related fields.

Electronic Devices, Circuits, and Systems for Biomedical Applications: Challenges and Intelligent Approaches explains the latest information on the design of new technological solutions for low-power, high-speed efficient biomedical devices, circuits and systems. The book outlines new methods to enhance system performance, provides key parameters to explore the electronic devices and circuit biomedical applications, and discusses innovative materials that improve device performance, even for those with smaller dimensions and lower costs. This book is ideal for graduate students in biomedical engineering

and medical informatics, biomedical engineers, medical device designers, and researchers in signal processing. Presents major design challenges and research potential in biomedical systems Walks readers through essential concepts in advanced biomedical system design Focuses on healthcare system design for low power-efficient and highly-secured biomedical electronics

A guide to intelligent decision and pervasive computing paradigms for healthcare analytics systems with a focus on the use of bio-sensors Intelligent Pervasive Computing Systems for Smarter Healthcare describes the innovations in healthcare made possible by computing through bio-sensors. The pervasive computing paradigm offers tremendous advantages in diversified areas of healthcare research and technology. The authors—noted experts in the field—provide the state-of-the-art intelligence paradigm that enables optimization of medical assessment for a healthy, authentic, safer, and more productive environment. Today's computers are integrated through bio-sensors and generate a huge amount of information that can enhance our ability to process enormous bio-informatics data that can be transformed into meaningful medical knowledge and help with diagnosis, monitoring and tracking health issues, clinical decision making, early detection of infectious disease prevention, and rapid analysis of health hazards. The text examines a wealth of topics such as the design and development of pervasive healthcare technologies, data modeling and information management, wearable biosensors and their systems, and more. This important resource: Explores the recent trends and developments in computing through bio-sensors and its technological applications Contains a review of biosensors and sensor systems and networks for mobile health monitoring Offers an opportunity for readers to examine the concepts and future outlook of intelligence on healthcare systems incorporating biosensor applications Includes information on privacy and security issues on wireless body area network for remote healthcare monitoring Written for scientists and application developers and professionals in related fields, Intelligent Pervasive Computing Systems for Smarter Healthcare is a guide to the most recent developments in intelligent computer systems that are applicable to the healthcare industry.

With the current advances in technology innovation, the field of medicine and healthcare is rapidly expanding and, as a result, many different areas of human health diagnostics, treatment and care are emerging. Wireless technology is getting faster and 5G mobile technology allows the Internet of Medical Things (IoMT) to greatly improve patient care and more effectively prevent illness from developing. This book provides an overview and review of the current and anticipated changes in medicine and healthcare due to new technologies and faster communication between users and devices. This groundbreaking book presents state-of-the-art chapters on many subjects including: A review of the implications of VR and AR healthcare applications A review of current augmenting dental care An overview of typical human-computer interaction (HCI)

that can help inform the development of user interface designs and novel ways to evaluate human behavior to responses in virtual reality (VR) and other new technologies A review of telemedicine technologies Building empathy in young children using augmented reality AI technologies for mobile health of stroke monitoring & rehabilitation robotics control Mobile doctor brain AI App An artificial intelligence mobile cloud computing tool Development of a robotic teaching aid for disabled children Training system design of lower limb rehabilitation robot based on virtual reality

Biomechanics covers a wide field such as organ mechanics, tissue mechanics, cell mechanics to molecular mechanics. At the 6th World Congress of Biomechanics WCB 2010 in Singapore, authors presented the largest experimental studies, technologies and equipment. Special emphasis was placed on state-of-the-art technology and medical applications. This volume presents the Proceedings of the 6th WCB 2010 which was hold in conjunction with 14th International Conference on Biomedical Engineering (ICBME) & 5th Asia Pacific Conference on Biomechanics (APBiomech). The peer reviewed scientific papers are arranged in the six themes Organ Mechanics, Tissue Mechanics, Cell Mechanics, Molecular Mechanics, Materials, Tools, Devices & Techniques, Special Topics.

The use of mobile devices in medical care settings and by wellness professionals has influenced and changed many aspects of clinical practice. Mobile devices have become ubiquitous in these settings, leading to rapid growth in the development of medical apps. Contemporary Applications of Mobile Computing in Healthcare Settings is a critical scholarly resource that explores the benefits of using mobile devices and apps in the medical field and examines the shortcomings in the validation practices regarding these technologies. Featuring coverage on a wide range of topics such as smart healthcare, patient surveillance, and body fitness monitoring, this book is geared toward academicians, nurses, medical professionals, practitioners, and students seeking current research on the quality and safety of the apps currently available for use by medical care professionals.

Provides a comprehensive overview of the basic concepts behind the application and designs of medical instrumentation This premiere reference on medical instrumentation describes the principles, applications, and design of the medical instrumentation most commonly used in hospitals. It places great emphasis on design principles so that scientists with limited background in electronics can gain enough information to design instruments that may not be commercially available. The revised edition includes new material on microcontroller-based medical instrumentation with relevant code, device design with circuit simulations and implementations, dry electrodes for electrocardiography, sleep apnea monitor, Infusion pump system, medical imaging techniques and electrical safety. Each chapter includes new problems and updated reference material that covers the latest medical technologies. Medical Instrumentation: Application and Design,

Fifth Edition covers general concepts that are applicable to all instrumentation systems, including the static and dynamic characteristics of a system, the engineering design process, the commercial development and regulatory classifications, and the electrical safety, protection, codes and standards for medical devices. The readers learn about the principles behind various sensor mechanisms, the necessary amplifier and filter designs for analog signal processing, and the digital data acquisition, processing, storage and display using microcontrollers. The measurements of both cardiovascular dynamics and respiratory dynamics are discussed, as is the developing field of biosensors. The book also covers general concepts of clinical laboratory instrumentation, medical imaging, various therapeutic and prosthetic devices, and more. Emphasizes design throughout so scientists and engineers can create medical instruments Updates the coverage of modern sensor signal processing New material added to the chapter on modern microcontroller use Features revised chapters, descriptions, and references throughout Includes many new worked out examples and supports student problem-solving Offers updated, new, and expanded materials on a companion webpage Supplemented with a solutions manual containing complete solutions to all problems Medical Instrumentation: Application and Design, Fifth Edition is an excellent book for a senior to graduate-level course in biomedical engineering and will benefit other health professionals involved with the topic.

This book provides a collection of comprehensive research articles on data analytics and applications of wearable devices in healthcare. This Special Issue presents 28 research studies from 137 authors representing 37 institutions from 19 countries. To facilitate the understanding of the research articles, we have organized the book to show various aspects covered in this field, such as eHealth, technology-integrated research, prediction models, rehabilitation studies, prototype systems, community health studies, ergonomics design systems, technology acceptance model evaluation studies, telemonitoring systems, warning systems, application of sensors in sports studies, clinical systems, feasibility studies, geographical location based systems, tracking systems, observational studies, risk assessment studies, human activity recognition systems, impact measurement systems, and a systematic review. We would like to take this opportunity to invite high quality research articles for our next Special Issue entitled “Digital Health and Smart Sensors for Better Management of Cancer and Chronic Diseases” as a part of Sensors journal.

Get mobile messaging going on virtually any platform, in any language Mobile Application Development Using SMS and the SIM Toolkit is just the guide you’ve been looking for if you’re building applications for GSM or 3G networks, wish you had sample code for reality-based applications, or want to add mobile extensions to your software products and corporate network. In this straight-talking tutorial, smart card expert Scott Guthery teams with information management specialist Mary Cronin to provide you with authoritative guidance on SIM application

design, integration, and management for any platform. Seasoned developers will quickly learn how to: Create code that harnesses the power of the SIM Use the micro-browsers and micro-Web servers in 3G phones Construct leading-edge mobile commerce applications on today's network Send and receive SMS messages from your server or your laptop Enable interfaces and other needed components Create secure wireless applications for corporate networks and VPNs

This volume presents the processing of the 15th ICMBE held from 4th to 7th December 2013, Singapore. Biomedical engineering is applied in most aspects of our healthcare ecosystem. From electronic health records to diagnostic tools to therapeutic, rehabilitative and regenerative treatments, the work of biomedical engineers is evident. Biomedical engineers work at the intersection of engineering, life sciences and healthcare. The engineers would use principles from applied science including mechanical, electrical, chemical and computer engineering together with physical sciences including physics, chemistry and mathematics to apply them to biology and medicine. Applying such concepts to the human body is very much the same concepts that go into building and programming a machine. The goal is to better understand, replace or fix a target system to ultimately improve the quality of healthcare. With this understanding, the conference proceedings offer a single platform for individuals and organizations working in the biomedical engineering related field to gather and network with each other in so doing create the catalyst for future development of biomedical engineering in Asia.

The book titled Advanced Computational and Communication Paradigms: Proceedings of International Conference on ICACCP 2017, Volume 1 presents refereed high-quality papers of the First International Conference on Advanced Computational and Communication Paradigms (ICACCP 2017) organized by the Department of Computer Science and Engineering, Sikkim Manipal Institute of Technology, held from 8– 10 September 2017. ICACCP 2017 covers an advanced computational paradigms and communications technique which provides failsafe and robust solutions to the emerging problems faced by mankind. Technologists, scientists, industry professionals and research scholars from regional, national and international levels are invited to present their original unpublished work in this conference. There were about 550 technical paper submitted. Finally after peer review, 142 high-quality papers have been accepted and registered for oral presentation which held across 09 general sessions and 05 special sessions along with 04 keynote address and 06 invited talks. This volume comprises 65 accepted papers of ICACCP 2017.

This book gathers the proceedings of the Third International Conference on Computational Advancement in Communication Circuits and Systems (ICCACCS 2020), organized virtually by Narula Institute of Technology, Kolkata, India. The book presents peer-reviewed papers that highlight new theoretical and experimental findings in the fields of electronics and communication engineering,

including interdisciplinary areas like advanced computing, pattern recognition and analysis, and signal and image processing. The respective papers cover a broad range of principles, techniques, and applications in microwave devices, communication and networking, signal and image processing, computations and mathematics, and control.

Design of Pulse Oximeters describes the hardware and software needed to make a pulse oximeter, and includes the equations, methods, and software required for them to function effectively. The book begins with a brief description of how oxygen is delivered to the tissue, historical methods for measuring oxygenation, and the invention of the pulse oximeter in the early 1980s. Subsequent chapters explain oxygen saturation display and how to use an LED, provide a survey of light sensors, and review probes and cables. The book closes with an assessment of techniques that may be used to analyze pulse oximeter performance and a brief overview of pulse oximetry applications. The book contains useful worked examples, several worked equations, flow charts, and examples of algorithms used to calculate oxygen saturation. It also includes a glossary of terms, instructional objectives by chapter, and references to further reading.

The 4th European Congress of the International Federation for Medical and Biological Federation was held in Antwerp, November 2008. The scientific discussion on the conference and in this conference proceedings include the following issues: Signal & Image Processing ICT Clinical Engineering and Applications Biomechanics and Fluid Biomechanics Biomaterials and Tissue Repair Innovations and Nanotechnology Modeling and Simulation Education and Professional

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

This book presents selected, high-quality research papers from the International Conference on Electronic Systems and Intelligent Computing (ESIC 2020), held at NIT Yupia, Arunachal Pradesh, India, on 2 – 4 March 2020. Discussing the latest challenges and solutions in the field of smart computing, cyber-physical systems and intelligent technologies, it includes papers based on original theoretical, practical and experimental simulations, developments, applications, measurements, and testing. The applications and solutions featured provide valuable reference material for future product development.

A Beginners Guide to Data Agglomeration and Intelligent Sensing provides an overview of the Sensor Cloud Platform, Converge-casting, and Data Aggregation in support of intelligent sensing and relaying of information. The book begins with a brief introduction on sensors and transducers, giving readers insight into the various types of sensors and how one can work with them. In addition, it gives several real-life examples to help readers properly understand concepts. An overview of concepts such as wireless sensor networks, cloud platforms, and device-to-cloud and sensor cloud architecture are explained briefly, as is data gathering in wireless sensor networks and aggregation procedures. Final sections explore how to process gathered data and relay the data in an intelligent way, including concepts such as supervised and unsupervised learning, software defined networks, sensor data mining and smart systems. Presents the latest advances in data agglomeration for intelligent sensing Discusses the basic concepts of sensors, real-life applications of sensors and systems, the protocols and applications of wireless sensor networks, the methodology of sensor data accumulation, and real-life applications of Intelligent Sensor Networks Provides readers with an easy-to-learn and understand introduction to the concepts of the cloud platform, Sensor Cloud and Machine Learning

This book faces the interdisciplinary challenge of formulating performance-assessing design approaches for networked cyber-physical systems (NCPSs). Its novel distributed multilayer cooperative control deals simultaneously with communication-network and control performance required for the network and application layers of an NCPS respectively. Practically, it distributes the computational burden among different devices, which act cooperatively to achieve NCPS goals. The approach can be applied to NCPSs based on both wired and wireless technologies and so is suitable for future network infrastructures in which different protocols and technologies coexist. The book reports realistic results from performance evaluation of the new approach, when applied in different operative scenarios. Readers of this book will benefit by: learning a general, technology-independent methodology for the design and implementation of cooperative distributed algorithms for flow control at the network layer of an NCPS that gives algorithm-parameter-tuning guidelines for assessing the desired quality of service performance; learning a general methodology for the design and implementation of consensus-based algorithms at the application layer that allows monitoring and control of distributed physical systems and gives algorithm-parameter-tuning guidelines for assessing the desired control system performance; understanding the main network simulators needed to validate the effectiveness of the proposed multilayer control approach in different realistic network operation scenarios; and practising with a cooperative multilayer control project that assesses acceptable NCPS performance in networked monitoring and robot systems, autonomous and queuing networks, and other critical human relief applications. Researchers, graduate students and practitioners working in automation, engineering, sensor

networks, mobile robotics and computer networks will find this book instructive. It will also be helpful to network administrators and technicians implementing application-layer and network-layer solutions or installing, configuring or troubleshooting network and control system components of NCPSs.

This book contains a selection of thoroughly refereed and revised papers from the Second International ICST Conference on Wireless and Mobile Communication in Healthcare, MobiHealth 2010, held in Ayia Napa, Cyprus, in October 2010. The 33 papers in this volume describe various applications of information and communication technologies in healthcare and medicine and cover a wide range of topics such as intelligent public health monitoring services, mobile health technologies, signal processing techniques for monitoring services, wearable biomedical devices, ambient assistive technologies, emergency and disaster applications, and integrated systems for chronic monitoring and management.

The Biomed 2011 brought together academicians and practitioners in engineering and medicine in this ever progressing field. This volume presents the proceedings of this international conference which was hold in conjunction with the 8th Asian Pacific Conference on Medical and Biological Engineering (APCMBE 2011) on the 20th to the 23rd of June 2011 at Berjaya Times Square Hotel, Kuala Lumpur. The topics covered in the conference proceedings include: Artificial organs, bioengineering education, bionanotechnology, biosignal processing, bioinformatics, biomaterials, biomechanics, biomedical imaging, biomedical instrumentation, BioMEMS, clinical engineering, prosthetics.

The proceeding is a collection of research papers presented at the 2nd International Colloquium on Sports Science, Exercise, Engineering and Technology (ICoSSEET2015), a conference dedicated to address the challenges in the areas of sports science, exercise, sports engineering and technology including other areas of sports, thereby presenting a consolidated view to the interested researchers in the aforesaid fields. The goal of this conference was to bring together researchers and practitioners from academia and industry to focus on the scope of the conference and establishing new collaborations in these areas. The topics of interest are in mainly (1) Sports and Exercise Science (2) Sports Engineering and Technology Application (3) Sports Industry and Management.

IoT Based Data Analytics for the Healthcare Industry: Techniques and Applications explores recent advances in the analysis of healthcare industry data through IoT data analytics. The book covers the analysis of ubiquitous data generated by the healthcare industry, from a wide range of sources, including patients, doctors, hospitals, and health insurance companies. The book provides AI solutions and support for healthcare industry end-users who need to analyze and manipulate this vast amount of data. These solutions feature deep learning and a wide range of intelligent methods, including simulated annealing, tabu search, genetic algorithm, ant colony optimization, and particle swarm optimization. The book also explores challenges, opportunities, and future research directions, and discusses the data collection and pre-processing stages, challenges and issues in data collection, data handling, and data collection

set-up. Healthcare industry data or streaming data generated by ubiquitous sensors cocooned into the IoT requires advanced analytics to transform data into information. With advances in computing power, communications, and techniques for data acquisition, the need for advanced data analytics is in high demand. Provides state-of-art methods and current trends in data analytics for the healthcare industry Addresses the top concerns in the healthcare industry using IoT and data analytics, and machine learning and deep learning techniques Discusses several potential AI techniques developed using IoT for the healthcare industry Explores challenges, opportunities, and future research directions, and discusses the data collection and pre-processing stages

The book addresses issues towards the design and development of Wireless Sensor Network based Smart Home and fusion of Real-Time Data for Wellness Determination of an elderly person living alone in a Smart Home. The fundamentals of selection of sensor, fusion of sensor data, system design, modelling, characterizations, experimental investigations and analyses have been covered. This book will be extremely useful for the engineers and researchers especially higher undergraduate, postgraduate students as well as practitioners working on the development of Wireless Sensor Networks, Internet of Things and Data Mining.

This volume presents the 5th European Conference of the International Federation for Medical and Biological Engineering (EMBEC), held in Budapest, 14-18 September, 2011. The scientific discussion on the conference and in this conference proceedings include the following issues: - Signal & Image Processing - ICT - Clinical Engineering and Applications - Biomechanics and Fluid Biomechanics - Biomaterials and Tissue Repair - Innovations and Nanotechnology - Modeling and Simulation - Education and Professional

Ambient Intelligence (AmI) is a recent paradigm emerging from Artificial Intelligence, in which computers are used as proactive tools to assist people with their day-to-day activities, making their lives more comfortable. Another main goal of AmI originates from the human/computer interaction domain and focuses on offering ways to interact with systems in a more natural way by means of user-friendly interfaces. This field is evolving quickly, as can be witnessed by the emerging natural-language-based and gesture-based types of interaction. The inclusion of computational power and communication technologies in everyday objects is growing, and their embeddedness in our environments should be as invisible as possible. In order for AmI to be successful, human interaction with computing power and embedded systems in the surroundings should be smooth and take place without people actually noticing it. The only things people should notice in connection with AmI are more safety, comfort and wellbeing, emerging in a natural and inherent way. ISAmI is the International Symposium on Ambient Intelligence and aims to bring together researchers from the various disciplines that constitute the scientific field of Ambient Intelligence to present and discuss the latest results, new ideas, projects and lessons learned, especially in terms of software and applications.

The book comprises selected papers presented at the International Conference on Wireless Communication (ICWiCOM), which is organized by D. J. Sanghvi College of Engineering's Department of Electronics and Telecommunication Engineering. The book focuses on specific topics of wireless communication, like signal and image processing applicable to wireless domains, networking, microwave and antenna design, and telemedicine systems. Covering three main areas – networking, antenna designs and embedded systems applicable to communication – it is a valuable resource for postgraduate and doctoral students.

This book comprises of 74 contributions from the experts covering the following topics. " Information Communication Technologies " Network Technologies " Wireless And Sensor Networks " Soft Computing " Circuits and Systems " Software Engineering " Data Mining " Bioinformatics " Data and Network Security