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Semantic Multimedia Analysis and Processing Evaggelos Spyrou 2017-12-19 Broad in scope, Semantic Multimedia Analysis and Processing provides a complete reference of techniques, algorithms, and solutions for the design and the implementation of contemporary multimedia systems. Offering a balanced, global look at the latest advances in semantic indexing, retrieval, analysis, and processing of multimedia, the book features the contributions of renowned researchers from around the world. Its contents are based on four fundamental thematic pillars: 1) information and content retrieval, 2) semantic knowledge exploitation paradigms, 3) multimedia personalization, and 4) human-computer affective multimedia interaction. Its 15 chapters cover key topics such as content creation, annotation and modeling for the semantic web, multimedia content understanding, and efficiency and scalability. Fostering a deeper understanding of a popular area of research, the text: Describes state-of-the-art schemes and applications Supplies authoritative guidance on research and deployment issues Presents novel methods and applications in an informative and reproducible way Contains numerous examples, illustrations, and tables summarizing results from quantitative studies Considers ongoing trends and designates future challenges and research perspectives Includes bibliographic links for further exploration Uses both SI and US units Ideal for engineers and scientists specializing in the design of multimedia systems, software applications, and image/video analysis and processing technologies, Semantic Multimedia Analysis and Processing aids researchers, practitioners, and developers in finding innovative solutions to existing problems, opening up new avenues of research in uncharted waters.

Advanced Computing and Systems for Security Rituparna Chaki 2018-05-10 This book contains extended version of selected works that have been discussed and presented in the fourth International Doctoral Symposium on Applied Computation and Security Systems (ACSS 2017) held in Patna, India during March 17-19, 2017. The symposium was organized by the Departments of Computer Science & Engineering and A. K. Choudhury School of Information Technology, both from University of Calcutta in collaboration with NIT, Patna. The International partners for ACSS 2016 had been Ca Foscari University of Venice, Italy and Bialystok University of Technology, Poland. This bi-volume book has a total of 21 papers divided in 7 chapters. The chapters reflect the sessions in which the works have been discussed during the symposium. The different chapters in the book include works on biometrics, image processing, pattern recognition, algorithms, cloud computing, wireless sensor networks and security systems.

Cognitive Systems and Signal Processing Fuchun Sun 2021-05-04 This book constitutes the refereed post-conference proceedings of the 5th International Conference on Cognitive Systems and Signal Processing, ICCSIP 2020, held in Zhuhai, China, in December 2020. The 59 revised papers presented were carefully reviewed and selected from 120 submissions. The papers are organized in topical sections on algorithm; application; manipulation; bioinformatics; vision; and autonomous vehicles.

Electrospinning for Advanced Biomedical Applications and Therapies Nuno M Neves 2012-08-30 The main focus of this book is on the development of electrospun membranes for advanced biomedical technologies including tissue engineering and drug delivery devices.Serving as a reference book for the beginner this book also provides an in-depth analysis of the challenges to be overcome in the future. Each section of the book covers not only the developments in the various fields of application of the electrospun meshes, but also the advances required for the successful development of new and high-end biomedical applications.Important areas tackled include:Biomedical applications of the technologySpecific aspects of equipments and materialsSurface characterization and functionalizationIn vitro testing with electrospun meshes. In all of these areas the main achievements, challenges ahead and expert opinions are given, making this book highly unusual in the level of detail covered.

Proceedings of International Ethical Hacking Conference 2018 Mohuya Chakraborty 2018-10-04 This book discusses the implications of new technologies for a secured society. As such, it reflects the main focus of the International Conference on Ethical Hacking, eHaCon 2018, which is essentially in evaluating the security of computer systems using penetration testing techniques. Showcasing the most outstanding research papers presented at the conference, the book shares new findings on computer network attacks and defenses, commercial security solutions, and hands-on, real-world security experience. The respective sections include network security, ethical hacking, cryptography, digital forensics, cloud security, information security, mobile communications security, and cyber security.

Distributed, Ambient and Pervasive Interactions Norbert Streitz 2019-07-10 This book constitutes the refereed proceedings of the 7th International Conference on Distributed, Ambient and Pervasive Interactions, DAPI 2019, held as part of the 21st International Conference on Human-Computer Interaction, HCII 2019, in Orlando, Florida, USA, in July 2019. A total of 1274 papers and 209 posters have been accepted for publication in the HCII 2019 proceedings from a total of 5029 submissions. The 36 papers included in this volume were organized in topical sections on IoT and big data; smart cities and built environments; perception and emotion in DAPI; and DAPI for health and learning.

The Third International Conference on the Development of Biomedical Engineering in Vietnam Vo Van Toi 2010-04-03 Vietnam is a rapidly developing, socially dynamic country, where interest in biomedical engineering activities has grown considerably in recent years. The leadership of the Vietnamese government, and of research and educational institutions, are well aware of the importance of this field for the development of the country and have instituted policies to promote its development. The political, economic and social environment within the country offers unique opportunities for the international community and this conference was intended to provide a vehicle for the sharing of experiences; development of support and collaboration networks for research; and exchange of ideas on how to improve the educational and entrepreneurial environment to better address the urgent needs of Vietnam. In January 2004, under the sponsorship of the U.S. National Science Foundation, a U.S. delegation that consisted of Biomedical Engineering professors from different universities in the United States, visited several universities and research institutions in Vietnam to assess the state of development of this field. This delegation proposed a five year plan that was

enthusiastically embraced by the international scientific communities to actively develop collaborations with Vietnam. Within this framework, in July 2005, the First International Conference on the Development of Biomedical Engineering in Vietnam was held in Ho Chi Minh City. From that conference a Consortium of Vietnam-International Universities was created to advise and assist the development of Biomedical Engineering in Vietnamese universities.

3rd Kuala Lumpur International Conference on Biomedical Engineering 2006 F. Ibrahim 2007-04-28 The Kuala Lumpur International Conference on Biomedical Engineering (BioMed 2006) was held in December 2006 at the Palace of the Golden Horses, Kuala Lumpur, Malaysia. The papers presented at BioMed 2006, and published here, cover such topics as Artificial Intelligence, Biological effects of non-ionising electromagnetic fields, Biomaterials, Biomechanics, Biomedical Sensors, Biomedical Signal Analysis, Biotechnology, Clinical Engineering, Human performance engineering, Imaging, Medical Informatics, Medical Instruments and Devices, and many more.

Information Technology in Bio- and Medical Informatics Miroslav Bursa 2017-08-11 This book constitutes the refereed proceedings of the 8th International Conference on Information Technology in Bio- and Medical Informatics, ITBAM 2017, held in Lyon, France, in August 2017. The 3 revised full papers and 6 poster papers presented were carefully reviewed and selected from 15 submissions. The papers address a broad range of topics in applications of information technology to biomedical engineering and medical informatics.

Medical Image Computing and Computer-Assisted Intervention - MICCAI 2008 Dimitris N. Metaxas 2008

13th International Conference on Electrical Bioimpedance and 8th Conference on Electrical Impedance Tomography 2007 Hermann Scharfetter 2007-08-29 This book presents the proceedings of the 13th International Conference on Electrical Bioimpedance, ICEBI 2007, combined with the 8th Conference on Electrical Impedance Tomography, held at the Graz University of Technology in Graz, Austria, in August 2007.

World Congress on Medical Physics and Biomedical Engineering September 7 - 12, 2009 Munich, Germany Olaf Dössel 2010-01-06 Present Your Research to the World! The World Congress 2009 on Medical Physics and Biomedical Engineering – the triennial scientific meeting of the IUPESM - is the world's leading forum for presenting the results of current scientific work in health-related physics and technologies to an international audience. With more than 2,800 presentations it will be the biggest conference in the fields of Medical Physics and Biomedical Engineering in 2009! Medical physics, biomedical engineering and bioengineering have been driving forces of innovation and progress in medicine and healthcare over the past two decades. As new key technologies arise with significant potential to open new options in diagnostics and therapeutics, it is a multidisciplinary task to evaluate their benefit for medicine and healthcare with respect to the quality of performance and therapeutic output. Covering key aspects such as information and communication technologies, micro- and nanosystems, optics and biotechnology, the congress will serve as an inter- and multidisciplinary platform that brings together people from basic research, R&D, industry and medical application to discuss these issues. As a major event for science, medicine and technology the congress provides a comprehensive overview and in–depth, first-hand information on new developments, advanced technologies and current and future applications. With this Final Program we would like to give you an overview of the dimension of the congress and invite you to join us in Munich! Olaf Dössel Congress President Wolfgang C.

3rd International Conference for Innovation in Biomedical Engineering and Life Sciences Fatimah Ibrahim 2021-01-07 This book presents innovative engineering solution for medical diagnosis, therapy and life science studies. Gathering the proceedings of the 3rd International Conference for Innovation in Biomedical Engineering and Life Sciences, ICIBEL 2020, held on December 6-7, 2019, in Kuala Lumpur, Malaysia, this book aims at informing on engineering tools and their clinical applications, and being a source of inspiration for future research and interdisciplinary collaborations.

Computer Vision and Image Processing in Intelligent Systems and Multimedia Technologies Sarfraz, Muhammad 2014-04-30 The fields of computer vision and image processing are constantly evolving as new research and applications in these areas emerge. Staying abreast of the most up-to-date developments in this field is necessary in order to promote further research and apply these developments in real-world settings. Computer Vision and Image Processing in Intelligent Systems and Multimedia Technologies features timely and informative research on the design and development of computer vision and image processing applications in intelligent agents as well as in multimedia technologies. Covering a diverse set of research in these areas, this publication is ideally designed for use by academicians, technology professionals, students, and researchers interested in uncovering the latest innovations in the field.

Proceedings of the Eighth International Conference on Soft Computing and Pattern Recognition (SoCPaR 2016) Ajith Abraham 2017-08-17 This volume presents 70 carefully selected papers from a major joint event: the 8th International Conference on Soft Computing and Pattern Recognition (SoCPaR 2016) and the 8th International Conference on Computational Aspects of Social Networks (CASoN 2016). SoCPaR–CASoN 2016, which was organized by the Machine Intelligence Research Labs (MIR Labs), USA and Vellore Institute of Technology (VIT), India and held at the VIT on December 19–21, 2016. It brings together researchers and practitioners from academia and industry to share their experiences and exchange new ideas on all interdisciplinary areas of soft computing and pattern recognition, as well as intelligent methods applied to social networks. This book is a valuable resource for practicing engineers/scientists and researchers working in the field of soft computing, pattern recognition and social networks.

Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2019 Aboul Ella Hassanien 2019-10-02 This book presents the proceedings of the 5th International Conference on Advanced Intelligent Systems and Informatics 2019 (AISI2019), which took place in Cairo, Egypt, from October 26 to 28, 2019. This international and interdisciplinary conference, which highlighted essential research and developments in the fields of informatics and intelligent systems, was organized by the Scientific Research Group in Egypt (SRGE). The book is divided into several sections, covering the following topics:

machine learning and applications, swarm optimization and applications, robotic and control systems, sentiment analysis, e-learning and social media education, machine and deep learning algorithms, recognition and image processing, intelligent systems and applications, mobile computing and networking, cyber-physical systems and security, smart grids and renewable energy, and micro-grid and power systems.

Functional Materials Ewa Klodzinska 2015-03-02 Through advanced characterization and new fabrication techniques, the physics, chemistry, and structure of functional materials have become a central focus of investigation in materials science, chemistry, physics, and engineering. This book presents a detailed overview of recent research developments on functional materials, including nanomaterials, synthesis, characterization, and applications. A series of chapters provides state-of-the-art information on structures and performance of polymer composites. This volume contains topical articles by prominent leaders in this field. The research presented discusses design principles, candidate materials and systems, and current advances, and serves as a useful source of insight into this field. This book provides a strong understanding of the primary types of materials and composites, as well as the relationships that exist between the structural elements of materials and their properties. The relationships among processing, structure, properties, and performance components are explored throughout the chapters.

Interdisciplinary Approaches to Altering Neurodevelopmental Disorders Wadhera, Tanu 2020-03-13 Disorder-assistive and neurotechnological devices are experiencing a boom in the global market. Mounting evidence suggests that approaches based on several different domains should move towards the goal of early diagnosis of individuals affected by neurodevelopmental disorders. Using an interdisciplinary and collaborative approach in diagnosis and support can resolve many hurdles such as lack of awareness, transport, and financial burdens by being made available to individuals at the onset of symptoms. Interdisciplinary Approaches to Altering Neurodevelopmental Disorders is a pivotal reference source that explores neurodevelopmental disorders and a diverse array of diagnostic tools and therapies assisted by neurotechnological devices. While covering a wide range of topics including individual-centered design, artificial intelligence, and multifaceted therapies, this book is ideally designed for neuroscientists, medical practitioners, clinical psychologists, special educators, counselors, therapists, researchers, academicians, and students.

Translational Ayurveda Sanjeev Rastogi 2018-11-11 Translational Ayurveda is the implementation of translational medicine ideas taking into account Ayuraveda's unique health care principles and their application in patient care. This book addresses various domains of Ayurveda, discussing its fundamentals and clinical practice in terms of the various modalities available, and offering deep insights into what is actually described in the classical Ayurveda texts. It also explores the public health impacts of such classical thoughts from a completely new angle. In Ayurveda, there are huge gaps between knowledge and its practical application. The book identifies these gaps to provide a new perspective on Ayurvedic wisdom in light of contemporary scientific advances.

Intelligent Information and Database Systems Jeng-Shyang Pan 2012-03-14 The three-volume set LNAI 7196, LNAI 7197 and LNAI 7198 constitutes the refereed proceedings of the 4th Asian Conference on Intelligent Information and Database Systems, ACIIDS 2012, held in Kaohsiung, Taiwan in March 2012. The 161 revised papers presented were carefully reviewed and selected from more than 472 submissions. The papers included cover the following topics: intelligent database systems, data warehouses and data mining, natural language processing and computational linguistics, semantic Web, social networks and recommendation systems, collaborative systems and applications, e-bussiness and e-commerce systems, e-learning systems, information modeling and requirements engineering, information retrieval systems, intelligent agents and multi-agent systems, intelligent information systems, intelligent internet systems, intelligent optimization techniques, object-relational DBMS, ontologies and knowledge sharing, semi-structured and XML database systems, unified modeling language and unified processes, Web services and semantic Web, computer networks and communication systems.

Launching IFMBE into the 21st Century: 50 Years and Counting Herbert Voigt 2013-10-29 This book has been created for the 50th anniversary of the International Federation for Medical and Biological Enineering and Computing IFMBE. The IFMBE is primarily a professional organization of national and transnational societies representing interests in medical and biological engineering. In six parts, this book presents an overview on the federation, its activities and the characters who shaped IFMBE. In the last part, all member societies give a short presentation.

Handbook of Research on Functional Materials Charles A. Wilkie 2016-04-19 Handbook of Research on Functional Materials: Principles, Capabilities and Limitations covers a broad range of modern materials and provides industry professionals and researchers in polymer science and technology with a single, comprehensive book summarizing all aspects involved in the modern materials production chain. The book focuses on industrially important materials, analytical techniques, and formulation methods, with chapters covering step-growth, radical, and co-polymerization, crosslinking and grafting, reaction engineering, advanced technology applications, including conjugated, dendritic, and nanomaterial polymers and emulsions, and characterization methods, which includes spectroscopy, light scattering, and microscopy. The book introduces current state-of-the-art technology in modern materials with an emphasis on the rapidly growing technologies. It takes a unique approach by presenting specific materials and then progresses into a discussion of the ways in which these materials and processes are integrated into today's functioning manufacturing industry. It follows a more quantitative and design-oriented approach than other texts in the market, helping readers gain a better understanding of important concepts. Readers will also discover how material properties relate to the process variables in a given process as well as how to perform quantitative engineering analysis of manufacturing processes.

Intelligent and Cloud Computing Debahuti Mishra 2020-08-28 This book features a collection of high-quality research papers presented at the International Conference on Intelligent and Cloud Computing (ICICC 2019), held at Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, India, on December 20, 2019. Including contributions on system and network design that can support existing and future applications and services, it covers topics such as cloud computing system and network design, optimization for cloud computing, networking, and applications, green cloud system design, cloud storage design and networking, storage security, cloud system models, big data storage, intra-cloud computing, mobile cloud system design, real-time resource reporting and monitoring for cloud management, machine learning, data mining for cloud computing, data-driven methodology and architecture, and networking for machine learning systems.

Advances in Computer Communication and Computational Sciences Sanjiv K. Bhatia 2018-08-22 The book includes the insights that reflect 'Advances in Computer and Computational Sciences' from upcoming researchers and leading academicians across the globe. It contains the high-quality peer-reviewed papers of 'International Conference on Computer, Communication and Computational Sciences (IC4S 2017), held during 11—12 October, 2017 in Thailand. These papers are arranged in the form of chapters. The content of this book is divided into two volumes that cover variety

of topics such as intelligent hardware and software design, advanced communications, intelligent computing techniques, intelligent image processing, and web and informatics. This book helps the perspective readers' from computer industry and academia to derive the advances of next generation computer and communication technology and shape them into real life applications.

Proceedings of 3rd International Conference on Computer Vision and Image Processing Bidyut B. Chaudhuri 2019-09-19 This book is a collection of carefully selected works presented at the Third International Conference on Computer Vision & Image Processing (CVIP 2018). The conference was organized by the Department of Computer Science and Engineering of PDPM Indian Institute of Information Technology, Design & Manufacturing, Jabalpur, India during September 29 - October 01, 2018. All the papers have been rigorously reviewed by the experts from the domain. This 2 volume proceedings include technical contributions in the areas of Image/Video Processing and Analysis; Image/Video Formation and Display; Image/Video Filtering, Restoration, Enhancement and Super-resolution; Image/Video Coding and Transmission; Image/Video Storage, Retrieval and Authentication; Image/Video Quality; Transform-based and Multi-resolution Image/Video Analysis; Biological and Perceptual Models for Image/Video Processing; Machine Learning in Image/Video Analysis; Probability and uncertainty handling for Image/Video Processing; and Motion and Tracking.

5th Kuala Lumpur International Conference on Biomedical Engineering 2011 Hua-Nong Ting 2011-06-17 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.

Computational Intelligence for Decision Support in Cyber-Physical Systems Zeashan H Khan 2014-02-18 This book is dedicated to applied computational intelligence and soft computing techniques with special reference to decision support in Cyber Physical Systems (CPS), where the physical as well as the communication segment of the networked entities interact with each other. The joint dynamics of such systems result in a complex combination of computers, software, networks and physical processes all combined to establish a process flow at system level. This volume provides the audience with an in-depth vision about how to ensure dependability, safety, security and efficiency in real time by making use of computational intelligence in various CPS applications ranging from the nano-world to large scale wide area systems of systems. Key application areas include healthcare, transportation, energy, process control and robotics where intelligent decision support has key significance in establishing dynamic, ever-changing and high confidence future technologies. A recommended text for graduate students and researchers working on the applications of computational intelligence methods in CPS.

13th International Conference on Biomedical Engineering Chwee Teck Lim 2009-03-15 th On behalf of the organizing committee of the 13 International Conference on Biomedical Engineering, I extend our w- mest welcome to you. This series of conference began in 1983 and is jointly organized by the YLL School of Medicine and Faculty of Engineering of the National University of Singapore and the Biomedical Engineering Society (Singapore). First of all, I want to thank Mr Lim Chuan Poh, Chairman A*STAR who kindly agreed to be our Guest of Honour to give th the Opening Address amidst his busy schedule. I am delighted to report that the 13 ICBME has more than 600 participants from 40 countries. We have received very high quality papers and inevitably we had to turndown some papers. We have invited very prominent speakers and each one is an authority in their field of expertise. I am grateful to each one of them for setting aside their valuable time to participate in this conference. For the first time, the Biomedical Engineering Society (USA) will be sponsoring two symposia, ie "Drug Delivery S- tems" and "Systems Biology and Computational Bioengineering". I am thankful to Prof Tom Skalak for his leadership in this initiative. I would also like to acknowledge the contribution of Prof Takami Yamaguchi for organizing the NUS-Tohoku's Global COE workshop within this conference. Thanks also to Prof Fritz Bodem for organizing the symposium, "Space Flight Bioengineering". This year's conference proceedings will be published by Springer as an IFMBE Proceedings Series.

Advanced Composite Materials Ashutosh Tiwari 2016-09-14 Composites materials is basically the combining of unique properties of materials to have synergistic effects. A combination of materials is needed to adapt to certain properties for any application area. There is an everlasting desire to make composite materials stronger, lighter or more durable than traditional materials. Carbon materials are known to be attractive in composites because of their combination of chemical and physical properties. In the recent years, development of new composites has been influenced by precision green approaches that restrict hazardous substances and waste created during production. This book ranges from the fundamental principles underpinning the fabrication of different composite materials to their devices, for example, applications in energy harvesting, memory devices, electrochemical biosensing and other advanced composite-based biomedical applications. This book provides a compilation of innovative fabrication strategies and utilization methodologies which are frequently adopted in the advanced composite materials community with respect to developing appropriate composites to efficiently utilize macro and nanoscale features. The key topics are: Pioneer composite materials for printed electronics Current-limiting defects in superconductors High-tech ceramics materials Carbon nanomaterials for electrochemical biosensing Nanostructured ceramics and bioceramics for bone cancer Importance of biomaterials for bone regeneration Tuning hydroxyapatite particles Carbon nanotubes reinforced bioceramic composite Biomimetic prototype interface

4th Kuala Lumpur International Conference on Biomedical Engineering 2008 Noor Azuan Abu Osman 2008-07-30 It is with great pleasure that we present to you a collection of over 200 high quality technical papers from more than 10 countries that were presented at the Biomed 2008. The papers cover almost every aspect of Biomedical Engineering, from artificial intelligence to biomechanics, from medical informatics to tissue engineering. They also come from almost all parts of the globe, from America to Europe, from the Middle East to the Asia-Pacific. This set of papers presents to you the current research work being carried out in various disciplines of Biomedical En- neering, including new and innovative researches in emerging areas. As the organizers of Biomed 2008, we are very proud to be able to come-up with this publication. We owe the success to many individuals who worked very hard to achieve this: members of the Technical Committee, the Editors, and the Inter- tional Advisory Committee. We would like to take this opportunity to record our thanks and appreciation to each and every one of them. We are pretty sure that you will find many of the papers illuminating and useful for your own research and study. We hope that you will enjoy yourselves going through them as much as we had enjoyed compiling them into the proceedings. Assoc. Prof. Dr. Noor Azuan Abu Osman Chairperson, Organising Committee, Biomed 2008

International Advanced Researches & Engineering Congress 2017 Proceeding Book Recep HALICIOGLU 2017-12-29 INTERNATIONAL WORKSHOPS (at IAREC'17) (This book inclueds English (main) and Turkish languages) International Workshop on Mechanical Engineering International Workshop on Mechatronics Engineering

International Workshop on Energy Systems Engineering International Workshop on Automotive Engineering and Aerospace Engineering International Workshop on Material Engineering International Workshop on Manufacturing Engineering International Workshop on Physics Engineering International Workshop on Electrical and Electronics Engineering International Workshop on Computer Engineering and Software Engineering International Workshop on Chemical Engineering International Workshop on Textile Engineering International Workshop on Architecture International Workshop on Civil Engineering International Workshop on Geomatics Engineering International Workshop on Industrial Engineering International Workshop on Food Engineering International Workshop on Aquaculture Engineering International Workshop on Agriculture Engineering International Workshop on Mathematics Engineering International Workshop on Bioengineering Engineering International Workshop on Biomedical Engineering International Workshop on Genetic Engineering International Workshop on Environmental Engineering International Workshop on Other Engineering Science

Emotion and Stress Recognition Related Sensors and Machine Learning Technologies
Kyandoghere Kyamakya 2021-09-01 This book includes impactful chapters which present scientific concepts, frameworks, architectures and ideas on sensing technologies and machine learning techniques. These are relevant in tackling the following challenges: (i) the field readiness and use of intrusive sensor systems and devices for capturing biosignals, including EEG sensor systems, ECG sensor systems and electrodermal activity sensor systems; (ii) the quality assessment and management of sensor data; (iii) data preprocessing, noise filtering and calibration concepts for biosignals; (iv) the field readiness and use of nonintrusive sensor technologies, including visual sensors, acoustic sensors, vibration sensors and piezoelectric sensors; (v) emotion recognition using mobile phones and smartwatches; (vi) body area sensor networks for emotion and stress studies; (vii) the use of experimental datasets in emotion recognition, including dataset generation principles and concepts, quality insurance and emotion elicitation material and concepts; (viii) machine learning techniques for robust emotion recognition, including graphical models, neural network methods, deep learning methods, statistical learning and multivariate empirical mode decomposition; (ix) subject-independent emotion and stress recognition concepts and systems, including facial expression-based systems, speech-based systems, EEG-based systems, ECG-based systems, electrodermal activity-based systems, multimodal recognition systems and sensor fusion concepts and (x) emotion and stress estimation and forecasting from a nonlinear dynamical system perspective. This book, emerging from the Special Issue of the Sensors journal on "Emotion and Stress Recognition Related Sensors and Machine Learning Technologies" emerges as a result of the crucial need for massive deployment of intelligent sociotechnical systems. Such technologies are being applied in assistive systems in different domains and parts of the world to address challenges that could not be addressed without the advances made in these technologies.

Principles and Methods of Explainable Artificial Intelligence in Healthcare
Albuquerque, Victor Hugo C. de 2022-05-20 Explainable artificial intelligence is proficient in operating and analyzing the unconstrainted environment in fields like robotic medicine, robotic treatment, and robotic surgery, which rely on computational vision for analyzing complex situations. Explainable artificial intelligence is a well-structured customizable technology that makes it possible to generate promising unbiased outcomes. The model's adaptability facilitates the management of heterogeneous healthcare data and the visualization of biological structures through virtual reality. Explainable artificial intelligence has newfound applications in the healthcare industry, such as clinical trial matching, continuous healthcare monitoring, probabilistic evolutions, and evidence-based mechanisms. Principles and Methods of Explainable Artificial Intelligence in Healthcare discusses explainable artificial intelligence and its applications in healthcare, providing a broad overview of state-of-the-art approaches for accurate analysis and diagnosis. The book also encompasses computational vision processing techniques that handle complex data like physiological information, electronic healthcare records, and medical imaging data that assist in earlier prediction. Covering topics such as neural networks and disease detection, this reference work is ideal for industry professionals, practitioners, academicians, researchers, scholars, instructors, and students.

International Conference on Emerging Applications and Technologies for Industry 4.0 (EATI'2020) Jemal H. Abawajy This book addresses the adoption of intelligent algorithms for resolving challenges in different aspects of the society such as sport, cyber-security, COVID-19 pandemic, advertising, driving, smart environment sensors, blockchain, cloud computing, and health. In addition, the book also covers machine learning fundamentals such as feature selection. The book presents practical simulation results and different illustrations in different chapters for easy understanding of concepts and approaches. The types of contributions in the book are as follows: original research, survey, and theoretical insight that describe advancement in the adoption of technique for resolving the broad range of challenges. Researchers, undergraduates, postgraduates, and industry experts will find the book as a valuable resource that bridges theory and practice. .

Advances in Intelligent Computing and Communication Mihir Narayan Mohanty 2020-01-13 This book features high-quality research papers presented at the 2nd International Conference on Intelligent Computing and Advances in Communication (ICAC 2019), held at Siksha 'O' Anusandhan Deemed to be University, Bhubaneswar, Odisha, India, in November 2019. Covering a wide variety of topics, including management of clean and smart energy systems and environmental challenges, it is a valuable resource for researchers and practicing engineers working in various fields of renewable energy generation, and clean and smart energy management.

Wireless Computing in Medicine Mary Mehrnoosh Eshaghian-Wilner 2016-07-05 Provides a comprehensive overview of wireless computing in medicine, with technological, medical, and legal advances This book brings together the latest work of leading scientists in the disciplines of Computing, Medicine, and Law, in the field of Wireless Health. The book is organized into three main sections. The first section discusses the use of distributed computing in medicine. It concentrates on methods for treating chronic diseases and cognitive disabilities like Alzheimer's, Autism,

etc. It also discusses how to improve portability and accuracy of monitoring instruments and reduce the redundancy of data. It emphasizes the privacy and security of using such devices. The role of mobile sensing, wireless power and Markov decision process in distributed computing is also examined. The second section covers nanomedicine and discusses how the drug delivery strategies for chronic diseases can be efficiently improved by Nanotechnology enabled materials and devices such as MENs and Nanorobots. The authors will also explain how to use DNA computation in medicine, model brain disorders and detect bio-markers using nanotechnology. The third section will focus on the legal and privacy issues and how to implement these technologies in a way that is a safe and ethical. Defines the technologies of distributed wireless health, from software that runs cloud computing data centers, to the technologies that allow new sensors to work Explains the applications of nanotechnologies to prevent, diagnose, and cure disease Includes case studies on how the technologies covered in the book are being implemented in the medical field, through both the creation of new medical applications and their integration into current systems Discusses pervasive computing's organizational benefits to hospitals and health care organizations, and their ethical and legal challenges Wireless Computing in Medicine: From Nano to Cloud with Its Ethical and Legal Implications is written as a reference for computer engineers working in wireless computing, as well as medical and legal professionals. The book will also serve students in the fields of advanced computing, nanomedicine, health informatics, and technology law. Dr. Mary Mehrnoosh Eshaghian-Wilner, Esq. is an interdisciplinary scientist and patent attorney. She received a B.S. degree in Biomedical and Electrical Engineering (1985), M.S. degree in Computer Engineering (1985), Engineers degree in Electrical Engineering (1988), and Ph.D. in Computer Engineering (1988), all from the University of Southern California (USC). She holds a J.D. degree from the Northwestern California School of Law, and has graduated Cum Laude with an LL.M. degree from the Thomas Jefferson School of Law. Professor Eshaghian-Wilner is currently a Professor of Engineering Practice at the Electrical Engineering Department of USC. She is best known for her work in the areas of Optical Computing, Heterogeneous Computing, and Nanocomputing. Her current research involves the applications and implications of these and other emerging technologies in medicine and law. Professor Eshaghian-Wilner has founded and/or chaired numerous IEEE conferences and organizations, and serves on the editorial board of several journals. She is the recipient of several prestigious awards, and has authored and/or edited hundreds of publications, including three books.

Developments in Sustainable Chemical and Bioprocess Technology Ravindra Pogaku 2013-11-26 Environmental sustainability and development is of critical importance. Technological advances in the production of new energy sources are making their way into our lives in more and more depth every day. However, there is an urgent need to address the technological challenges and advancement of the various chemical and bio-processes to maintain the dynamic sustainability of our energy needs. Toward that end, an attempt is being made to look at recent advances, key issues still faced and where possible, offer suggestions on alternative technologies to optimize sustainable processes. Still considered a new area of science, energy sources themselves are still being 'discovered'...meaning, what is financially viable in the current marketplace is changing. For example, energy from plants has not been financially viable in the past because of the high cost of growing, harvesting, breaking down cell walls, disposal of waste products, etc. Materials used to derive energy from sustainable resources is changing, making previously high-cost processes more efficient. It is crucial that the industry as a while works in tandem to develop crops that new technological advances make financially feasible. This book will cover recent advances in the chemicals, bioprocesses and other materials used in growing and extracting energy from sustainable products. Membrane/cell wall digestion issues will also be covered as well as recovering mamixal amounts of energy from sources to limit waste. Finally a section on safety and control will be presented with has been poorly covered in other publications.

Sustainable Ethanol and Climate Change Muhammad Arshad 2020-11-13 This book amalgamates the facts about carbon dioxide capture from ethanol fermentation of sugarcane molasses and its impact on climate changes. Learning objectives will be achieved through tables and figures that guide professional and students alike through a user-friendly format. The book presents advanced information on CO_2 production from ethanol facilities, impact on climate changes and global warming. Utilization of CO_2 in various chemical industries, carbonated beverage industry, and processing and preservation of food are illustrated. The book is equally invaluable to students of the relevant disciplines and to those taking more specialized climate change/sustainability courses. Industry employees involved in product development, production management and quality management will benefit as well. Academics in teaching, research and personnel involved in environment regulatory capacity should also find this book ideal for their use.

Human-Computer Interaction -- INTERACT 2011 Pedro Campos 2011-09-01 The four-volume set LNCS 6946-6949 constitutes the refereed proceedings of the 13th IFIP TC13 International Conference on Human-Computer Interaction, INTERACT 2011, held in Lisbon, Portugal, in September 2011. The 47 papers included in the first volume are organized in topical sections on accessibility, affective HCI, computer-mediated communication, computer-supported cooperative work, evaluation, finding and retrieving, fun/aesthetic design, gestures, and HCI in the classroom.

Soft Computing Models in Industrial and Environmental Applications, 6th International Conference SOCO 2011 Emilio Corchado 2011-03-04 This volume of Advances in Intelligent and Soft Computing contains accepted papers presented at SOCO 2011 held in the beautiful and historic city of Salamanca, Spain, April 2011. This volume presents the papers accepted for the 2011 edition, both for the main event and the Special Sessions. SOCO 2011 Special Sessions are a very useful tool in order to complement the regular program with new or emerging topics of particular interest to the participating community. Four special sessions were organized related to relevant topics as: Optimization and Control in Industry, Speech Processing and Soft Computing, Systems, Man & Cybernetics and Soft Computing for Medical Applications.