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The two-volume set LNCS 10735 and 10736 constitutes the thoroughly refereed proceedings of the 18th Pacific-Rim Conference on Multimedia, PCM 2017, held in Harbin, China, in September 2017. The 184 full papers presented were carefully reviewed and selected from 264 submissions. The papers are organized in topical sections on: Best Paper Candidate; Video Coding; Image Super-resolution, Deblurring, and Dehazing; Person Identity and Emotion; Tracking and Action Recognition; Detection and Classification; Multimedia Signal Reconstruction and Recovery; Text and Line Detection/Recognition; Social Media; 3D and Panoramic Vision; Deep Learning for Signal Processing and Understanding; Large-Scale Multimedia Affective Computing; Sensor-enhanced Multimedia Systems; Content Analysis; Coding, Compression, Transmission, and Processing.

As more and more of our data is stored remotely, accessing that data wherever and whenever it is needed is a critical concern. More concerning is managing the databanks and storage space necessary to enable cloud systems. Resource Management of Mobile Cloud Computing Networks and Environments reports on the latest advances in the development of computationally intensive and cloud-based applications. Covering a wide range of problems, solutions, and perspectives, this book is a scholarly resource for specialists and end-users alike making use of the latest cloud technologies.

Neuromorphic engineering has just reached its 25th year as a discipline. In the first two decades neuromorphic engineers focused on building models of sensors, such as silicon cochleas and retinas, and building blocks such as silicon neurons and synapses. These designs have honed our skills in implementing sensors and neural networks in VLSI using analog and mixed mode circuits. Over the last decade the address event representation has been used to interface devices and computers from different designers and even different groups. This facility has been essential for our ability to combine sensors, neural networks, and actuators into neuromorphic systems. More recently, several big projects have emerged to build very large scale neuromorphic systems. The Telluride Neuromorphic Engineering Workshop (since 1994) and the CapoCaccia Cognitive Neuromorphic Engineering Workshop (since 2009) have been instrumental not only in creating a strongly connected research community, but also in introducing different groups to each other's hardware. Many neuromorphic systems are first created at one of these workshops. With this special research topic, we showcase the state-of-the-art in neuromorphic systems.

The volume contains latest research work presented at International Conference on Computing and Communication Systems (I3CS 2016) held at North Eastern Hill University (NEHU), Shillong, India. The book presents original research results, new ideas and practical development experiences which concentrate on both theory and practices. It includes papers from all areas of information technology, computer science, electronics and communication engineering written by researchers, scientists, engineers and scholar students and experts from India and abroad.

The Internet of Things (IoT) is one of the core technologies of current and future information and communications technology (ICT) sectors. IoT technologies will be deployed in numerous industries, including health, transport, smart cities, utility sectors, environment, security, and many other areas. In a manner suitable to a broad range of

readers, this book introduces various key IoT technologies focusing on algorithms, process algebra, network architecture, energy harvesting, wireless communications, and network security. It presents IoT system design techniques, international IoT standards, and recent research outcomes relevant to the IoT system developments and provides existing and emerging solutions to the design and development of IoT platforms for multi-sector industries, particularly for Industry 4.0. The book also addresses some of the regulatory issues and design challenges related to IoT system deployments and proposes guidelines for possible future applications.

This book constitutes thoroughly reviewed, revised and selected papers from the 5th International Conference on Human Centered Computing, HCC 2019, held in ?a?ak, Serbia, in August 2019. The 48 full and 23 short papers presented in this volume were carefully reviewed and selected from a total of 133 submissions. The papers focus on deep learning and its applications on a variety of real-life problems, ranging from image/video analysis, to human-computer interaction, and to logistics and supply chain management.

The volume LNCS 9377 constitutes the refereed proceedings of the 12th International Symposium on Neural Networks, ISNN 2015, held in Jeju, South Korea in October 2015. The 55 revised full papers presented were carefully reviewed and selected from 97 submissions. These papers cover many topics of neural network-related research including intelligent control, neurodynamic analysis, memristive neurodynamics, computer vision, signal processing, machine learning, and optimization.

The volume set LNAI 11740 until LNAI 11745 constitutes the proceedings of the 12th International Conference on Intelligent Robotics and Applications, ICIRA 2019, held in Shenyang, China, in August 2019. The total of 378 full and 25 short papers presented in these proceedings was carefully reviewed and selected from 522 submissions. The papers are organized in topical sections as follows: Part I: collective and social robots; human biomechanics and human-centered robotics; robotics for cell manipulation and characterization; field robots; compliant mechanisms; robotic grasping and manipulation with incomplete information and strong disturbance; human-centered robotics; development of high-performance joint drive for robots; modular robots and other mechatronic systems; compliant manipulation learning and control for lightweight robot. Part II: power-assisted system and control; bio-inspired wall climbing robot; underwater acoustic and optical signal processing for environmental cognition; piezoelectric actuators and micro-nano manipulations; robot vision and scene understanding; visual and motional learning in robotics; signal processing and underwater bionic robots; soft locomotion robot; teleoperation robot; autonomous control of unmanned aircraft systems. Part III: marine bio-inspired robotics and soft robotics: materials, mechanisms, modelling, and control; robot intelligence technologies and system integration; continuum mechanisms and robots; unmanned underwater vehicles; intelligent robots for environment detection or fine manipulation; parallel robotics; human-robot collaboration; swarm intelligence and multi-robot cooperation; adaptive and learning control system; wearable and assistive devices and robots for healthcare; nonlinear systems and control. Part IV: swarm intelligence unmanned system; computational intelligence inspired robot navigation and SLAM; fuzzy modelling for automation, control, and robotics; development of ultra-thin-film, flexible sensors, and tactile sensation; robotic technology for deep space exploration; wearable sensing based limb

motor function rehabilitation; pattern recognition and machine learning; navigation/localization. Part V: robot legged locomotion; advanced measurement and machine vision system; man-machine interactions; fault detection, testing and diagnosis; estimation and identification; mobile robots and intelligent autonomous systems; robotic vision, recognition and reconstruction; robot mechanism and design. Part VI: robot motion analysis and planning; robot design, development and control; medical robot; robot intelligence, learning and linguistics; motion control; computer integrated manufacturing; robot cooperation; virtual and augmented reality; education in mechatronics engineering; robotic drilling and sampling technology; automotive systems; mechatronics in energy systems; human-robot interaction.

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

This book gathers the proceedings of the 20th International Conference on Advanced Computer Systems 2016, held in Międzyzdroje (Poland) on October 19–21, 2016. Addressing topics that include artificial intelligence (AI), software technologies, multimedia systems, IT security and design of information systems, the main purpose of the conference and the book is to create an opportunity to exchange significant insights on this area between science and business. In particular, this expertise concerns the use of hard and soft computational methods for artificial intelligence, image and data processing, and finally, the design of information and security systems. The book contains a collection of carefully selected, peer-reviewed papers, combining high-quality original unpublished research, case studies, and implementation experiences.

The four-volume set LNCS 11056, 110257, 11258, and 11073 constitutes the refereed proceedings of the First Chinese Conference on Pattern Recognition and Computer Vision, PRCV 2018, held in Guangzhou, China, in November 2018. The 179 revised full papers presented were carefully reviewed and selected from 399 submissions. The papers have been organized in the following topical sections: Part I: Biometrics, Computer Vision Application. Part II: Deep Learning. Part III: Document Analysis, Face Recognition and Analysis, Feature Extraction and Selection, Machine Learning. Part IV: Object Detection and Tracking, Performance Evaluation and Database, Remote Sensing.

This book constitutes the conference proceedings of the 9th Pacific Rim Symposium on Image and Video Technology, PSIVT 2019, held in Sydney, NSW, Australia, in November 2019. A total of 31 papers were carefully reviewed and selected from 55 submissions. The main conference comprises 11 major subject areas that span the field of image and video technology, namely imaging and graphics hardware and visualization, image/video coding and

transmission, image/video processing and analysis, image/video retrieval and scene understanding, applications of image and video technology, biomedical image processing and analysis, biometrics and image forensics, computational photography and arts, computer and robot vision, pattern recognition, and video surveillance.

The two-volume proceedings LNCS 9314 and 9315, constitute the proceedings of the 16th Pacific-Rim Conference on Multimedia, PCM 2015, held in Gwangju, South Korea, in September 2015. The total of 138 full and 32 short papers presented in these proceedings was carefully reviewed and selected from 224 submissions. The papers were organized in topical sections named: image and audio processing; multimedia content analysis; multimedia applications and services; video coding and processing; multimedia representation learning; visual understanding and recognition on big data; coding and reconstruction of multimedia data with spatial-temporal information; 3D image/video processing and applications; video/image quality assessment and processing; social media computing; human action recognition in social robotics and video surveillance; recent advances in image/video processing; new media representation and transmission technologies for emerging UHD services.

This two-volume set (CCIS 1367-1368) constitutes reviewed and selected papers from the 10th International Advanced Computing Conference, IACC 2020, held in December 2020. The 65 full papers and 2 short papers presented in two volumes were thoroughly reviewed and selected from 286 submissions. The papers are organized in the following topical sections: Application of Artificial Intelligence and Machine Learning in Healthcare; Using Natural Language Processing for Solving Text and Language related Applications; Using Different Neural Network Architectures for Interesting applications; ?Using AI for Plant and Animal related Applications.- Applications of Blockchain and IoT.- Use of Data Science for Building Intelligence Applications; Innovations in Advanced Network Systems; Advanced Algorithms for Miscellaneous Domains; New Approaches in Software Engineering.

The book provides an up-to-date and authoritative treatment of pattern recognition and computer vision, with chapters written by leaders in the field. On the basic methods in pattern recognition and computer vision, topics range from statistical pattern recognition to array grammars to projective geometry to skeletonization, and shape and texture measures. Recognition applications include character recognition and document analysis, detection of digital mammograms, remote sensing image fusion, and analysis of functional magnetic resonance imaging data, etc.

The three-volume set LNCS 11857, 11858, and 11859 constitutes the refereed proceedings of the Second Chinese Conference on Pattern Recognition and Computer Vision, PRCV 2019, held in Xi'an, China, in November 2019. The 165 revised full papers presented were carefully reviewed and selected from 412 submissions. The papers have been organized in the following topical sections: Part I: Object Detection, Tracking and Recognition, Part II: Image/Video Processing and Analysis, Part III: Data Analysis and Optimization.

This book constitutes the refereed proceedings of the 7th International Workshop on Representations, Analysis and Recognition of Shape and Motion from Imaging Data, RFMI 2017, held in Savoi, France, in December 2017. The 8 revised full papers and 9 revised short papers presented were carefully reviewed and selected from 23 submissions. The papers are organized in topical sections on analyzing motion data; deep learning on image and shape data; 2D and 3D pattern classification; watermarking, segmentation and deformations.

The International Conference on Communication and Computing Systems (ICCCS 2018) provides a high-level international forum for researchers and recent advances in the field of electronic devices, computing, big data analytics, cyber security, quantum computing, biocomputing, telecommunication, etc. The aim of the conference was to bridge the gap between the technological advancements in the industry and the academic research.

High-performance computing (HPC) describes the use of connected computing units to

perform complex tasks. It relies on parallelization techniques and algorithms to synchronize these disparate units in order to perform faster than a single processor could, alone. Used in industries from medicine and research to military and higher education, this method of computing allows for users to complete complex data-intensive tasks. This field has undergone many changes over the past decade, and will continue to grow in popularity in the coming years. Innovative Research Applications in Next-Generation High Performance Computing aims to address the future challenges, advances, and applications of HPC and related technologies. As the need for such processors increases, so does the importance of developing new ways to optimize the performance of these supercomputers. This timely publication provides comprehensive information for researchers, students in ICT, program developers, military and government organizations, and business professionals.

This book constitutes the proceedings of the First International Conference on Smart Multimedia, ICSM 2018, which was held in Toulon, France, in August 2018. The 39 papers presented were selected from about 100 submissions and are grouped in sections on social, affective and cognition analysis, person-centered smart multimedia: serving people with disabilities to the general population, haptic and robots for smart multimedia applications, MR, 3D, underwater image processing, smart signal processing meets smart sensing, visual behavior analysis: methods and applications, video analysis, learning, low-level vision, miscellaneous.

"This book offers balanced coverage of the technological solutions that contribute to the design of digital textbooks and contribute to achieving learning objectives, offering an emphasis on assessment mechanisms and learning theory"--

Programming has become a significant part of connecting theoretical development and scientific application computation. Computer programs and processes that take into account the goals and needs of the user meet with the greatest success, so it behooves software engineers to consider the human element inherent in every line of code they write. Research Anthology on Recent Trends, Tools, and Implications of Computer Programming is a vital reference source that examines the latest scholarly material on trends, techniques, and uses of various programming applications and examines the benefits and challenges of these computational developments. Highlighting a range of topics such as coding standards, software engineering, and computer systems development, this multi-volume book is ideally designed for programmers, computer scientists, software developers, analysts, security experts, IoT software programmers, computer and software engineers, students, professionals, and researchers.

High spatial resolution data including those from satellite, manned aircraft, and unmanned aerial vehicle (UAV) platforms provide a novel data source for addressing environmental questions with an unprecedented level of detail. To effectively utilize information contained in high spatial resolution imagery, some key questions must be addressed, including: (1) what are the challenges of using new sensors and new platforms? (2) what are the cutting-edge methods for fine-level information extraction from high spatial resolution images? and (3) how can high spatial resolution data improve the quantification and characterization of physical-environmental or human patterns and processes? The chapters in this book provide a snapshot of cutting-edge high spatial resolution remote sensing image collection, preprocessing, processing, and applications. This book intends to provide a useful benchmark for the high spatial resolution remote sensing community and inspire more studies that would address important scientific and technical challenges in use of high spatial remote sensing.

International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies publishes a wide spectrum of research and technical articles as well as reviews, experiments, experiences, modelings, simulations, designs, and innovations from engineering, sciences, life sciences, and related disciplines as well as interdisciplinary/cross-

disciplinary/multidisciplinary subjects. Original work is required. Article submitted must not be under consideration of other publishers for publications.

This book constitutes - in conjunction with the two-volume set LNCS 10954 and LNCS 10955 - the refereed proceedings of the 14th International Conference on Intelligent Computing, ICIC 2018, held in Wuhan, China, in August 2018. The 275 full papers and 72 short papers of the three proceedings volumes were carefully reviewed and selected from 632 submissions. The papers are organized in topical sections such as Evolutionary Computation and Learning; Neural Networks; Pattern Recognition; Image Processing; Information Security; Virtual Reality and Human-Computer Interaction; Business Intelligence and Multimedia Technology; Biomedical Informatics Theory and Methods; Swarm Intelligence and Optimization; Natural Computing; Quantum Computing; Intelligent Computing in Computer Vision; Fuzzy Theory and Algorithms; Machine Learning; Systems Biology; Intelligent Systems and Applications for Bioengineering; Evolutionary Optimization: Foundations and Its Applications to Intelligent Data Analytics; Swarm Evolutionary Algorithms for Scheduling and Combinatorial Optimization; Swarm Intelligence and Applications in Combinatorial Optimization; Advances in Metaheuristic Optimization Algorithm; Advances in Image Processing and Pattern Techniques; Bioinformatics.

The three-volume set LNCS 101164, 11165, and 11166 constitutes the refereed proceedings of the 19th Pacific-Rim Conference on Multimedia, PCM 2018, held in Hefei, China, in September 2018. The 209 regular papers presented together with 20 special session papers were carefully reviewed and selected from 452 submissions. The papers cover topics such as: multimedia content analysis; multimedia signal processing and communications; and multimedia applications and services.

This two-volume set of LNCS 11643 and LNCS 11644 constitutes - in conjunction with the volume LNAI 11645 - the refereed proceedings of the 15th International Conference on Intelligent Computing, ICIC 2019, held in Nanchang, China, in August 2019. The 217 full papers of the three proceedings volumes were carefully reviewed and selected from 609 submissions. The ICIC theme unifies the picture of contemporary intelligent computing techniques as an integral concept that highlights the trends in advanced computational intelligence and bridges theoretical research with applications. The theme for this conference is "Advanced Intelligent Computing Methodologies and Applications." Papers related to this theme are especially solicited, including theories, methodologies, and applications in science and technology.

Applications of Computer Vision in Fashion and Textiles provides a systematic and comprehensive discussion of three key areas that are taking advantage of developments in computer vision technology, namely textile defect detection and quality control, fashion recognition and 3D modeling, and 2D and 3D human body modeling for improving clothing fit. It introduces the fundamentals of computer vision techniques for fashion and textile applications, also reviewing computer

vision techniques for textile quality control, including chapters on wavelet transforms, Gabor filters, Fourier transforms, and neural network techniques. Final sections cover recognition, modeling, retrieval technologies and advanced human shape modeling techniques. The book is essential reading for scientists and researchers working in the field of fashion production, quality assurance, product development, textiles, fashion supply chain managers, R&D professionals and managers in the textile industry. Explores computer vision technology with reference to improving budget, quality and schedule control in textile manufacturing Provides a thorough understanding of the role of computer vision in developing intelligent systems for the fashion and textiles industries Elucidates the connections between human body modeling technology and intelligent manufacturing systems

Innovative Research and Applications in Next-Generation High Performance Computing IGI Global

Biometrics, such as fingerprint, iris, face, hand print, hand vein, speech and gait recognition, etc., as a means of identity management have become commonplace nowadays for various applications. Biometric systems follow a typical pipeline, that is composed of separate preprocessing, feature extraction and classification. Deep learning as a data-driven representation learning approach has been shown to be a promising alternative to conventional data-agnostic and handcrafted pre-processing and feature extraction for biometric systems. Furthermore, deep learning offers an end-to-end learning paradigm to unify preprocessing, feature extraction, and recognition, based solely on biometric data. This Special Issue has collected 12 high-quality, state-of-the-art research papers that deal with challenging issues in advanced biometric systems based on deep learning. The 12 papers can be divided into 4 categories according to biometric modality; namely, face biometrics, medical electronic signals (EEG and ECG), voice print, and others.

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: Concepts, Methodologies, Tools, and Applications is an innovative reference source for the latest academic material on development of computers for gaining understanding about videos and digital images. Highlighting a range of topics, such as computational models, machine learning, and image processing, this multi-volume book is ideally designed for academicians, technology professionals, students, and researchers interested in uncovering the latest innovations in the field.

The proceedings set LNCS 11727, 11728, 11729, 11730, and 11731 constitute the proceedings of the 28th International Conference on Artificial Neural Networks, ICANN 2019, held in Munich, Germany, in September 2019. The total of 277 full papers and 43 short papers presented in these proceedings was

carefully reviewed and selected from 494 submissions. They were organized in 5 volumes focusing on theoretical neural computation; deep learning; image processing; text and time series; and workshop and special sessions.

This book constitutes the refereed proceedings of the Second International Conference on Intelligent Technologies and Applications, INTAP 2019, held in Bahawalpur, Pakistan, in November 2019. The 60 revised full papers and 6 revised short papers presented were carefully reviewed and selected from 224 submissions. Additionally, the volume presents 1 invited paper. The papers of this volume are organized in topical sections on AI and health; sentiment analysis; intelligent applications; social media analytics; business intelligence; Natural Language Processing; information extraction; machine learning; smart systems; semantic web; decision support systems; image analysis; automated software engineering.

This book constitutes the thoroughly refereed post-conference proceedings of the Third International Conference on Pattern Recognition, ICPRAM 2014, held in Angers, France, in March 2014. The 18 revised full papers were carefully reviewed and selected from 179 submissions and describe up-to-date applications of Pattern Recognition techniques to real-world problems, interdisciplinary research, experimental and/or theoretical studies yielding new insights that advance Pattern Recognition methods.

A selection of 50 papers presented at CAA2016. Papers are grouped under the following headings: Ontologies and Standards; Field and Laboratory Data Recording and Analysis; Archaeological Information Systems; GIS and Spatial Analysis; 3D and Visualisation; Complex Systems Simulation; Teaching Archaeology in the Digital Age.

The two volume proceedings of CCIS 698 and 699 constitutes revised selected papers from the 4th International Conference on Geo-Informatics in Resource Management and Sustainable Ecosystem, GRMSE 2016, held in Hong Kong, China, in November 2016. The total of 118 papers presented in these proceedings were carefully reviewed and selected from 311 submissions. The contributions were organized in topical sections named: smart city in resource management and sustainable ecosystem; spatial data acquisition through RS and GIS in resource management and sustainable ecosystem; ecological and environmental data processing and management; advanced geospatial model and analysis for understanding ecological and environmental processes; applications of geo-informatics in resource management and sustainable ecosystem.

The two-volume set LNCS 10132 and 10133 constitutes the thoroughly refereed proceedings of the 23rd International Conference on Multimedia Modeling, MMM 2017, held in Reykjavik, Iceland, in January 2017. Of the 149 full papers submitted, 36 were selected for oral presentation and 33 for poster presentation; of the 34 special session papers submitted, 24 were selected for oral presentation and 2 for poster presentation; in addition, 5 demonstrations were

accepted from 8 submissions, and all 7 submissions to VBS 2017. All papers presented were carefully reviewed and selected from 198 submissions. MMM is a leading international conference for researchers and industry practitioners for sharing new ideas, original research results and practical development experiences from all MMM related areas, broadly falling into three categories: multimedia content analysis; multimedia signal processing and communications; and multimedia applications and services.

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