Multimedia Information Technology Volume 40 Number 4

Broadband technology is ushering the telecom industry through a unique period of change with profound business implications for suppliers and users. This single source describes the four major broadband technologies that are shaping telecommunications networks: frame relay; optical fiber (including SONET); distributed queue dual bus (DQDB); and asynchronous transfer mode (ATM).

This book reports on the state of the art in multimedia information processing. The emphasis is on the convergence of information processing algorithms and associated technologies. The areas of interest include video/image coding, color vision, 3D reconstruction, field programmable devices, and many others. Contents:Selected Topics in Medical Image Processing (J Cornelis et al.)A Restoration Method for Delay Proportional Differentiated Services (J Tsiligaridis & R Acharya)Massive Marching: A Parallel Computation of Distance Function (E Dejno(ková et al.)A Novel Intrusive Voice Transmission Quality Test System for Mobile Networks (J Holub et al.)FPAD Versus FPGA for Future Mobile Communications (S A Colsell & R Edwards)Nonuniform Sampling of Chrominance and Its Application to Intra-Frame Coding (M Doma(ski et al.)Analytical Design of 2-D FIR Filters for Image Compression (P Zahradnik & M Vlcek)HMM-based Dance Gesture Recognition (F Cheneviere et al.)A Progressive Wavelet Oriented Watershed Technique for Image Segmentation (D K Bechtsis et al.)Spiking Neuron Auditory Model for Speech Processing Systems (A V Ivanov et al.)Focal Region-Based Volume Rendering (J Zhou & K D Toennies)On the Choice of Transform for Low Frequency Image Watermaking (D Taskovski et al.)Online Classification of EEG Signals Using Artificial Neural Networks for Biofeedback Training of Patients with Epilepsy (M Schroder et al.)Data Mining and Telecommunication Fraud Detection Using Artificial Neural Networks (A J Hussain & E Chew)Large Scale Features in Prokaryote and Eukaryote Genomics Signals (P D Cristea)A Basis of Invariant Moments for Color Images (R Bidoggia & S Gentili)Fast Segmentation of Color Images Using the Fuzzy K-Means Algorithm and Different Sampling Approaches (A G Yiannoulis et al.)and other papers Readership: Graduate students, academics and industrialists in image/video coding, multimedia, neural nets and image analysis. Keywords:Image Processing and Analysis;Video Coding;Neural Networks;Bioinformatics;Field Programmable Devices;Fuzzy Logic;Multimedia

Managing Information Technology Resources in Organizations in the Next Millennium contains more than 200 unique perspectives on numerous timely issues of managing information technology in organizations around the world. This book, featuring the latest research and applied IT practices, is a valuable source in support of teaching and research agendas.

Presently, in our world, visual information dominates. The turn of the millenium marks the age of visual information systems. Enabled by picture sensors of all kinds turning digital, visual information will not only enhance the value of existing information, it will also open up a new horizon of previously untapped information sources. There is a huge demand for visual information access from the consumer. As well, the handling of visual information is boosted by the rapid increase of hardware and Internet capabilities. Advanced technology for visual information systems is more urgently needed than ever before: not only new computational methods to retrieve, index, compress and uncover pictorial information, but also new metaphors to organize user interfaces. Also, new ideas and algorithms are needed which allow access to very large databases of digital pictures and videos. Finally we should not forget new systems with visual interfaces integrating the above components into new types of image, video or multimedia databases and hyperdocuments. All of these technologies will enable the construction of systems that are radically different from conventional information systems. Many novel issues will need to be addressed: query formulation for pictorial information, consistency management thereof, indexing and assessing the quality of these systems. Historically, the expression Visual Information Systems can be understood either as a system for image information or as visual system for any kind information.

Hardware Software Co-Design of a Multimedia SOC Platform is one of the first of its kinds to provide a comprehensive overview of the design and implementation of the hardware and software of an SoC platform for multimedia applications. Topics covered in this book range from system level design methodology, multimedia algorithm implementation, a sub-word parallel, single-instruction-multiple data (SIMD) processor design, and its virtual platform implementation, to the development of an SIMD parallel compiler as well as a real-time operating system (RTOS). Hardware Software Co-Design of a Multimedia SOC Platform is written for practitioner engineers and technical managers who want to gain first hand knowledge about the hardware-software design process of an SoC platform. It offers both tutorial-like details to help readers become familiar with a diverse range of subjects, and in-depth analysis for advanced readers to pursue further.

Everything you ever wanted to know about multimedia retrieval and management. This comprehensive book offers a full picture of the cutting-edge technologies necessary for a profound introduction to the field. Leading experts also cover a broad range of practical applications.

Addresses a wide selection of multimedia applications, programmable and custom architectures for the implementations of multimedia systems, and arithmetic architectures and design methodologies. The book covers recent applications of digital signal processing algorithms in multimedia, presents high-speed and low-priority binary and finite field arithmetic architectures, details VHDL-based implementation approaches, and more.

Volume is indexed by Thomson Reuters CPCI-S (WoS). The objective of this volume is to provide up-to-date information for researchers, educators, engineers, and government officials who are involved in the general area of Materials Science & Technology, mechatronics, robotics, automation, power and sensors. It will serve well in disseminating the latest research results and alternative views concerning the future research directions in these fields.

Welcome to the proceedings of the 5th Paci?c Rim Conference on Multimedia (PCM 2004) held in Tokyo Waterfront City, Japan, November 30–December 3, 2004. Following the success of the preceding conferences, PCM 2000 in Sydney, PCM 2001 in Beijing, PCM 2002 in Hsinchu, and PCM 2003 in Singapore, the ?fth PCM brought together the researchers, developers, practitioners, and educators in the ?eld of multimedia. Theoretical breakthroughs and practical systems were presented at this conference, thanks to the support of the IEEE Circuits and Systems Society, IEEE Region 10 and IEEE Japan Council, ACM SIGMM, IEICE and ITE. PCM2004featuredacomprehensiveprogramincludingkeynotetalks,regular paperpresentations,posters,demos,andspecialsessions.Wereceived385papers andthenumberofsubmissionswasthelargestamongrecentPCMs.Amongsuch a large number of submissions, we accepted only 94 oral presentations and 176 poster presentations. Seven special sessions were also organized by world-leading researchers. We kindly acknowledge the great support provided in the reviewing of submissions by the program committee members, as well as the additional reviewers who generously gave their time. The many useful comments provided by the reviewing process must have been very valuable for the authors' work. Thisconferencewouldneverhavehappenedwithoutthehelpofmanypeople. We greatly appreciate the support of our strong organizing committee chairs and advisory chairs. Among the chairs, special thanks go to Dr. Ichiro Ide and Dr. Takeshi Naemura who smoothly handled publication of the proceedings with Springer. Dr. Kazuya Kodama did a fabulous job as our Web master.

It. is well known that t.he introduction of a new technology in one organization not always produces the intended benefits (Levine, 1994). In many cases, either the receivers do not reach the intended level of use or simply the technology is rejected because it does not match with the expectations (true or false) and the accepted psychological effort to use it. The case of formal methods is a paradigmatic example of continual failures. The published cases with problems or failures only constitute the visible part of a

large iceberg of adoption cases. It. is difficult to get companies to openly express the problems they had; however, from the experience of the author, failure cases are very common and they include any type of company. Many reasons to explain the failures (and in some cases the successes) could be postulated; however, the experiences are not structured enough and it is difficult to extract from them useful guidelines for avoiding future problems. Generally speaking, there is a trend to find the root of the problems in the technol ogy itself and in its adequacy with the preexistent technological context. Technocratic technology transfer models describe the problems in terms of these aspects. Although it is true that those factors limit the probability of success, there is another source of explanations linked to the individuals and working teams and how they perceive the technology.

If there is any one element to the engineering of service systems that is unique, it is the extent to which the suitability of the system for human use, human service, and excellent human experience has been and must always be considered. An exploration of this emerging area of research and practice, Advances in the Human Side of Service Engineering covers a broad spectrum of ergonomics and human factors issues highlighting the design of contemporary service systems.

This book constitutes the refereed proceedings of the 4th International Conference on Advances in Information Systems, ADVIS 2006, held in Izmir, Turkey in October 2006. The 38 revised full papers presented together with four invited lectures were carefully reviewed and selected from 120 submissions. The papers are organized in topical sections.

This sixth volume of PISA 2009 results explores students' use of information technologies to learn.

Emphasizes the convergence of information processing algorithms and associated technologies.

This handbook is organized under three major parts. The first part of this handbook deals with multimedia security for emerging applications. The chapters include basic concepts of multimedia tools and applications, biological and behavioral biometrics, effective multimedia encryption and secure watermarking techniques for emerging applications, an adaptive face identification approach for android mobile devices, and multimedia using chaotic and perceptual hashing function. The second part of this handbook focuses on multimedia processing for various potential applications. The chapter includes a detail survey of image processing based automated glaucoma detection techniques and role of de-noising, recent study of dictionary learning based image reconstruction techniques for analyzing the big medical data, brief introduction of quantum image processing and it applications, a segmentation-less efficient Alzheimer detection approach, object recognition, image enhancements and de-noising techniques for emerging applications, improved performance of image compression approach, and automated detection of eye related diseases using digital image processing. The third part of this handbook introduces multimedia applications. The chapter includes the extensive survey on the role of multimedia in medicine and multimedia forensics classification, a finger based authentication system for e-health security, analysis of recently developed deep learning techniques for emotion and activity recognition. Further, the book introduce a case study on change of ECG according to time for user identification, role of multimedia in big data, cloud computing, the Internet of things (IoT) and blockchain environment in detail for real life applications. This handbook targets researchers, policy makers, programmers and industry professionals in creating new knowledge for developing efficient techniques/framework for multimedia applications. Advanced level students studying computer science, specifically security and multimedia will find this book useful as a reference.

Throughout society the explosion of information technologies is changing how we work and live. This volume focuses on emerging technologies and their impact on people and organizations in the early years of the new century. This book contains a collection of 36 papers selected from more than 110 high quality presentations at the 2000 International Conference on the Information Society in the 21st Ceptury (IS2000). The conference was held November 5-8, 2000, in Aizu Wakamatsu, Japan. IS2000 featured lively exchanges of ideas and opinions on the im pact of emerging technologies on our society among international participants from academic and industrial organizations. The chapters in this book are grouped under the following six headings: Information and Knowledge Management Towards an Intelligent Society; Collaborative Internet, Multimedia, and Electronic Commerce; Intelligent Robots and Auditory Interfaces; New Models and Approaches for a Knowledge Economic Society; IT-Based Innovative Edu cation Systems and Strategies; and Emerging Technologies for the Information Society in the New Century. The papers offer excellent perspectives on advances in the various fields and provide a framework for the development of improvements in technologies that hold promise for enhancing our lives in the new century. Special thanks are due to the University of Aizu and the Telecommunications Ad vancement Foundation for providing grants to support IS2000 and the publication of this volume. We also would like to thank all the authors for their excellent work in assuring the high quality of the contents.

This book constitutes the refereed proceedings of the First EurAsian Conference on Information and Communication Technology, EurAsia-ICT 2002, held in Shiraz, Iran, in October 2002. The 116 revised full papers presented were carefully reviewed and selected from more than 300 submissions. The papers are organized in topical sections on artificial intelligence, data mining, multimedia, security, neural networks, data and knowledge engineering, XML, mobile communication, computer graphics, digital libraries, natural language processing, Internet and QoS, information society, e-learning, mobile Web information systems, wireless communications, Web-based applications, intelligent agents, real-time sytems, software engineering, algorithms, and theoretical computer science.

Since the beginning of human history we have had a communication network that is identical with the physical distribution network. In the late 19th century we established the energy network to distribute electric and thermal energy, launching the modern society. The analog communication network became popular in the middle of the 20th century. And now, at the end of the 20th century, we have global digital information networks.Along with the advancement of the communication network, the progress of the information processing technology can be classified into three historical phases. The first phase technology is physical information processing, treating physical data from the real world. This technology is often called "signal processing" and is based on the physical law of nature. The second phase is free from the physical constraints. It is logical information processing, dealing with knowledge and rules. The most important aspect of this phase is consistency. "Provable" is employed to confirm the reality of the system.Based on the advanced computer and network technology, we are entering the third phase of information processing, which is "Kansei" information processing. ("Kansei" is a Japanese word expressing some subjective ability referred to as "sensibility", "intuition", "affection" or "emotion"). Emotional resonance or consent is important in the pursuit of reality in this phase.Multimedia modeling to harmonize different media and systems is one of the key technologies in the third phase of information processing. It will provide a next generation framework to construct a human-centered information environment that is more comfortable and more productive.This volume is devoted to a discussion on effective modeling of multimedia information and

systems for a wide range of applications. It contains 30 technical articles, all of which were selected, after vigorous peer reviews, for presentation at the International Conference on Multimedia Modeling held in Nagano, Japan, on 13-15 November 2000. This book constitutes the refereed proceedings of the Third IEEE Pacific Rim Conference on Multimedia, PCM 2002, held in Hsinchu, Taiwan in December 2002. The 154 revised full papers presented were carefully reviewed and selected from 224 submissions. The papers are organized in topical sections on mobile multimedia, digitial watermarking and data hiding, motion analysis, mulitmedia retrieval techniques, image processing, mulitmedia security, image coding, mulitmedia learning, audio signal processing, wireless multimedia streaming, multimedia systems in the Internet, distance education and multimedia, Internet security, computer graphics and virtual reality, object tracking, face analysis, and MPEG-4.

This comprehensive yet accessible text provides a good introduction to the fundamental concepts of Information Technology and skillfully elaborates on their applications, covering in the process the entire spectrum of IT related topics. Organized into three parts, the book offers an insightful analysis of the subject, explaining the concepts through suitable illustrations. Part I covers basic issues and concepts of Internet and the techniques of acquiring, storing, structuring and managing information that may involve images, text files and video data. The reader is exposed to both centralized and distributed database systems. Part II deals with the core topics in developing information systems which are based on audio and speech compression, multimedia communication techniques, and soft computing for analysis and interpretation of data. Part III focusses on a number of application areas-as remote sensing, telemedicine, e-commerce, cybermediary and rural development-besides the traditional engineering disciplines, highlighting their social impacts. The book is intended for undergraduate and postgraduate students of information technology, computer science as well as electronics and electrical communication engineering. It should also serve as an excellent reference for professionals in the IT field. Key Features: Discusses in detail the theoretical basis behind a web graph. Deals with security issues of computer networks and their implications in an easy-to-understand manner. Contains more than 30 projects (with useful hints) that students of various IT courses would find interesting to work on. Three chapters are exclusively devoted to different aspects of database management and data mining systems.

Scientists in different geographical locations conduct real-time experiments in a virtual shared workspace. E-commerce provides an emerging market for businesses large and small. E-mail, Servers, and Enterprise Resources Planning have revolutionized businesses on every level. People from all over the globe gather in chat rooms. The Internet is here to stay and Internet technologies and applications continue to grow and evolve. The Handbook of Internet Computing presents comprehensive coverage of all technical issues related to the Internet and its applications. It addresses hot topics such as Internet architectures, content-based multimedia retrieval on the Internet, Web-based collaboration, Web search engines, digital libraries, and more. Real-life examples illustrate the concepts so that technical, non-technical and business people can quickly grasp the fundamentals. Advances in Multimedia Information Processing - PCM 20045th Pacific Rim Conference on Multimedia, Tokyo, Japan, November 30 - December 3, 2004, Proceedings, Part IISpringer

This volume contains the proceedings of the 5th International Conference on Frontier Computing (FC 2016), Tokyo, Japan, July 13-15, 2016. This international meeting provided a forum for researchers to share current understanding of recent advances and emergence in information technology, science, and engineering, with themes in the scope of Communication Networks, Business Intelligence and Knowledge Management, Web Intelligence, and any related fields that further the development of information technology. The articles presented cover a wide spectrum of topics: database and data mining, networking and communications, web and internet of things, embedded system, soft computing, social network analysis, security and privacy, optics communication, and ubiquitous/pervasive computing. Many papers report results of great academic potential and value, and in addition, indicate promising directions of research in the focused realm of this conference series. Readers, including students, academic researchers, and professionals, will benefit from the results presented in this book. It also provides an overview of current research and can be used as a guidebook for those new to the field.

Welcome to the second IEEE Pacific Rim Conference on Multimedia (IEEE PCM 2001) held in Zhongguanchun, Beijing, China, October 22 24, 2001. Building upon the success of the inaugural IEEE PCM 2000 in Sydney in December 2000, the second PCM again brought together the researchers, developers, practitioners, and educators of multimedia in the Pacific area. Theoretical breakthroughs and practical systems were presented at this conference, thanks to the sponsorship by the IEEE Circuit and Systems Society, IEEE Signal Processing Society, China Computer Foundation, China Society of Image and Graphics, National Natural Science Foundation of China, Tsinghua University, and Microsoft Research, China. IEEE PCM 2001 featured a comprehensive program including keynote talks, regular paper presentations, posters, demos, and special sessions. We received 244 papers and accepted only 104 of them as regular papers, and 53 as poster papers. Our special session chairs, Shin'ichi Satoh and Mohan Kankanhalli, organized 6 special sessions. We acknowledge the great contribution from our program committee members and paper reviewers who spent many hours reviewing submitted papers and providing valuable comments for the authors. The conference would not have been successful without the help of so many people. We greatly appreciated the support of our honorary chairs: Prof. Sun Yuan Kung of Princeton University, Dr. Ya Qin Zhang of Microsoft Research China, and Prof.

This book constitutes the refereed proceedings of the 7th Pacific Rim Conference on Multimedia, PCM 2006, held in Hangzhou, China in November 2006. The 116 revised papers presented cover a wide range of topics, including all aspects of multimedia, both technical and artistic perspectives and both theoretical and practical issues.

Cyber security research is one of the important areas in the computer science domain which also plays a major role in the life of almost every individual, enterprise, society and country, which this book illustrates. A large number of advanced security books focus on either cryptography or system security which covers both information and network security. However, there is hardly any books available for advanced-level students and research scholars in security research to systematically study how the major attacks are studied, modeled, planned and combated by the community. This book aims to fill this gap. This book provides focused content related to specific attacks or attack families. These dedicated discussions in the form of individual chapters covers the application or area specific aspects, while discussing the placement of defense solutions to combat the attacks. It includes eight high quality chapters from established security research groups worldwide, which address important attacks from theoretical (modeling) as well as practical aspects. Each chapter brings together comprehensive and structured information on an attack or an attack family. The authors

present crisp detailing on the state of the art with quality illustration of defense mechanisms and open research problems. This book also covers various important attacks families such as insider threats, semantics social engineering attacks, distributed denial of service attacks, botnet based attacks, cyber physical malware based attacks, cross-vm attacks, and IoT covert channel attacks. This book will serve the interests of cyber security enthusiasts, undergraduates, post-graduates, researchers and professionals working in this field.

This Book Is Specially Designed To Improve The Problem Solving Ability And The Imaginative Power Of Students Over The Subjects Of Information Technology, Network And Internet. The Conventional Text And Reference Books Ignore That Fact Young Minds Need To Be Properly Trained And Nurtured To Achieve Excellency. In The Book Lots Of Research Issues Are Discussed Pertaining The Current Issues Of Networking. The Book Covers General Topics Of Information Technology Including The Future Trends Of Computing And Networking, Networks In General Staring With Protocol To Wireless Networking, Internet Technology In Details Including Next Generation Internet.The Evolution Of Networking, Economics Benefits, Transitional Phases, Evolution Of Generations Of Computers And Communications, Pcn, Packet Switching To Atm Cell Switching, Lan, Man, Wan, Ethernet And Its Future Generations, Internetworking, Gateways, Bridges, Isdn, Xdsl And Applications Are Discussed. Tcp/Ip, Udp, Icmp, Arp, Rarp, Ipv6, Firewall Are Dealt With Problems And Exercises. The Future Network Will Face Three Major Challenges Of High Data Rate, Reliable Transport And Secured Transport. Two Exclusives Chapters Deal With Reliable Transport (Basically Error Control) And Secured Transport. The Details Analysis Of Bec Techniques Including Those Of Basic Arqs And Several New And Modified Approaches Are Extensively Discussed. Many Research Direction Are Examined.The Conventional Security Techniques Namely Coding Schemes, Key Transport Protocol, Key Distribution Protocols, One Time Key Pad, Des, Aes And Md Etc. Are Thoroughly Discussed In The Book. The Future Research Areas Of Secured Techniques Are Explored With Possible Solution. A Chapter On Successor Of Ir Now Believed As Knowledge Technology Has Been Referred To. In Fact In Every Chapter, Some Research Issues Are Mentioned With Judicious Selection And Approaches.The Book Is Aimed To Benefit Be/Btech And Mtech Students Of Computer Science & Engineering, Electronics & Communication Engineering, Information Technology And Electrical Engineering.

Reliability Engineering and Quality Management provides a competitive advantage and market leadership in a global environment where market barriers are fast disappearing both in the domain of cutting edge and contemporary technologies, manufacturing, process and service sectors like information technology sector. The growth of Q R has been fuelled by increasing sophistication and complexity of system and organisational awareness to produce and market high quality and reliability products and services by the consumer and global market pressures. This subject being interdisciplinary in nature has also brought about a convergence of numerous solution strategies employing Fuzzy Sets, Artificial Neural Nets, Modeling and Simulation, Knowledge Base Systems, Operations Research and Mathematical Programming to achieve high Reliability. This book is intended for both the beginner and practitioner from manufacturing and service sector, research laboratories and academic institutions. This book is unique also as it gives an insight into the current practices and future directions.

Voice communications remains the most important facet of mobile radio services, which may be delivered over conventional fixed links, the Internet or wireless channels. This all-encompassing volume reports on the entire 50-year history of voice compression, on recent audio compression techniques and the protection as well as transmission of these signals in hostile wireless propagation environments. Audio and Voice Compression for Wireless and Wireline Communications, Second Edition is divided into four parts with Part I covering the basics, while Part II outlines the design of analysis-by-synthesis coding, including a 100-page chapter on virtually all existing standardised speech codecs. The focus of Part III is on wideband and audio coding as well as transmission. Finally, Part IV concludes the book with a range of very low rate encoding techniques, scanning a range of research-oriented topics. Fully updated and revised second edition of "Voice Compression and Communications", expanded to cover Audio features Includes two new chapters, on narrowband and wideband AMR coding, and MPEG audio coding Addresses the new developments in the field of wideband speech and audio compression Covers compression, error resilience and error correction coding, as well as transmission aspects, including cutting-edge turbo transceivers Presents both the historic and current view of speech compression and communications. Covering fundamental concepts in a non-mathematical way before moving to detailed discussions of theoretical principles, future concepts and solutions to various specific wireless voice communication problems, this book will appeal to both advanced readers and those with a background knowledge of signal processing and communications.

Spread in 133 articles divided in 20 sections the present treatises broadly discusses: Part 1: Image Processing Part 2: Radar and Satellite Image Processing Part 3: Image Filtering Part 4: Content Based Image Retrieval Part 5: Color Image Processing and Video Processing Part 6: Medical Image Processing Part 7: Biometric Part 8: Network Part 9: Mobile Computing Part 10: Pattern Recognition Part 11: Pattern Classification Part 12: Genetic Algorithm Part 13: Data Warehousing and Mining Part 14: Embedded System Part 15: Wavelet Part 16: Signal Processing Part 17: Neural Network Part 18: Nanotechnology and Quantum Computing Part 19: Image Analysis Part 20: Human Computer Interaction

Wolfgang Glatthaar International Business Machines (IBM), Gennany The rapid developments in infonnation technology (IT) will continue through the coming years. New application areas will be added. Whereas the use of infonnation technology in the past decade has been concentrated primarily on business and public administration, in future the suppliers of infonnation technology will develop an increasing number of applications for the private household (see fig. 1). Traditional perspective: New perspective: 'IT-solutions for the "IT-solutions for the company' private household" ~ . . . . . . \ . . . . \ . . . . \ . . . . \ . . . . \ . . . . \ \ \ \ \ Fig. 1. New perspective on

information technology This development has already generated considerable market dynamics. Latest forecasts for the USA suggest that by 1996 at the latest the private household will present greater sales potential for home computers than business and public administration. VI Preface Up to now the use of infonnation technology in the private household has not been regarded as highly significant by either business or science, even though PCs have become widespread in the private sphere. In the ESPRIT framework there have been individual projects dealing with home networks, and in a number of Asian and European countries, as well as America, experiments with interactive television are taking place. Internet and commercial online services are experiencing rapid growth. This application area for infonnation technology in the private household, which is generating increasing business attention, must also be the subject of appropriate research activities.

The natural mission of Computational Science is to tackle all sorts of human problems and to work out intelligent automata aimed at alleviating the b- den of working out suitable tools for solving complex problems. For this reason ComputationalScience,thoughoriginatingfromtheneedtosolvethemostch- lenging problems in science and engineering (computational science is the key player in the ?ght to gain fundamental advances in astronomy, biology, che- stry, environmental science, physics and several other scienti?c and engineering disciplines) is increasingly turning its attention to all ?elds of human activity. In all activities, in fact, intensive computation, information handling, kn- ledge synthesis, the use of ad-hoc devices, etc. increasingly need to be exploited and coordinated regardless of the location of both the users and the (various and heterogeneous) computing platforms. As a result the key to understanding the explosive growth of this discipline lies in two adjectives that more and more appropriately refer to Computational Science and its applications: interoperable and ubiquitous. Numerous examples of ubiquitous and interoperable tools and applicationsaregiveninthepresentfourLNCSvolumescontainingthecontri- tions delivered at the 2004 International Conference on Computational Science and its Applications (ICCSA 2004) held in Assisi, Italy, May 14–17, 2004.

This volume presents work from the IFIP TC 8 WG 8.9 International Conference on the Research and Practical Issues of Enterprise Information Systems (CONFENIS 2007). Enterprise information systems (EIS) have become increasingly popular. EIS integrate and support business processes across functional boundaries in a supply chain environment. In recent years, more and more enterprises world-wide have adopted EIS such as Enterprise Resource Planning (ERP) for running their businesses.

Bringing together papers presented at the ninth International Conference on Data Mining, this book addresses the developments in this important field. Featured topics include: data preparation, clustering technologies, customer relationship management, text mining, web mining, and categorisation methods.

This volume provides a snapshot of the current state of the art in data mining, presenting it both in terms of technical developments and industrial applications. The collection of chapters is based on works presented at the Australasian Data Mining conferences and industrial forums. Authors include some of Australia's leading researchers and practitioners in data mining. The volume also contains chapters by regional and international authors.

We are delighted to welcome readers to the proceedings of the 6th Pacific-Rim Conference on Multimedia (PCM). The first PCM was held in Sydney, Australia, in 2000. Since then, it has been hosted successfully by Beijing, China, in 2001, Hsinchu, Taiwan, in 2002, Singapore in 2003, and Tokyo, Japan, in 2004, and finally Jeju, one of the most beautiful and fantastic islands in Korea. This year, we accepted 181 papers out of 570 submissions including regular and special session papers. The acceptance rate of 32% indicates our commitment to ensuring a very high-quality conference. This would not be possible without the full support of the excellent Technical Committee and anonymous reviewers that provided timely and insightful reviews. We would therefore like to thank the Program Committee and all reviewers. The program of this year reflects the current interests of the PCM's. The accepted papers cover a range of topics, including, all aspects of multimedia, both technical and artistic perspectives and both theoretical and practical issues. The PCM 2005 program covers tutorial sessions and plenary lectures as well as regular presentations in three tracks of oral sessions and a poster session in a single track. We have tried to expand the scope of PCM to the artistic papers which need not to be strictly technical.