

# FILE INTELLIGENT INFORMATION PROCESSING IV 5TH IFIP INTERNATIONAL CONFERENCE ON INTELLIGENT INFORMATION PROCESSING OCTOBER 19 22 2008 BEIJING CHINA IN INFORMATION AND COMMUNICATION TECHNOLOGY

## **Intelligent Information Processing IV**

Knowledge existing in modern information systems usually comes from many sources and is mapped in many ways. There is a real need for representing “knowledge pieces” as rather universal objects that should fit to multi-purpose applications. According to great number of information system’s tasks, knowledge representation is more or less detailed (e.g. some level of its granularity is assumed). The main goal of this paper is to present chosen aspects of expressing granularity of knowledge implemented in intelligent systems. One of the main reasons of granularity phenomena is diversification of knowledge sources, therefore the next section is devoted to this issue. 2. Heterogeneous Knowledge as a Source for Intelligent Systems Knowledge, the main element of so-called intelligent applications and systems, is very often heterogeneous. This heterogeneity concerns the origin of knowledge, its sources as well as its final forms of presentation. In this section the selected criteria of knowledge differentiation will be presented, in the context of potential sources of knowledge acquisition. In Fig. 1 an environment of intelligent systems is shown, divided into different knowledge sources for the system. Fig. 1. Potential knowledge sources for intelligent information/reasoning system. Source: own elaboration based on (Mach, 2007) p. 24.

## **Intelligent Information Processing III**

Intelligent Information Processing supports the most advanced productive tools that are said to be able to change human life and the world itself. This book presents the proceedings of the 4th IFIP International Conference on Intelligent Information Processing. This conference provides a forum for engineers and scientists in academia, university and industry to present their latest research findings in all aspects of Intelligent Information Processing.

## **Yearbook of International Organizations**

This book provides the technical essentials, state-of-the-art knowledge, business ecosystem and standards of Near Field Communication (NFC) by NFC Lab – Istanbul research centre which conducts intense research on NFC technology. In this book, the authors present the contemporary research on all aspects of NFC, addressing related security aspects as well as information on various business models. In addition, the book provides comprehensive information a designer needs to design an NFC project, an analyzer needs to analyze requirements of a new NFC based system, and a programmer needs to implement an application. Furthermore, the authors introduce the technical and administrative issues related to NFC technology, standards, and global stakeholders. It also offers comprehensive information as well as use case studies for each NFC operating mode to give the usage idea behind each operating mode thoroughly. Examples of NFC

application development are provided using Java technology, and security considerations are discussed in detail. Key Features: Offers a complete understanding of the NFC technology, including standards, technical essentials, operating modes, application development with Java, security and privacy, business ecosystem analysis Provides analysis, design as well as development guidance for professionals from administrative and technical perspectives Discusses methods, techniques and modelling support including UML are demonstrated with real cases Contains case studies such as payment, ticketing, social networking and remote shopping This book will be an invaluable guide for business and ecosystem analysts, project managers, mobile commerce consultants, system and application developers, mobile developers and practitioners. It will also be of interest to researchers, software engineers, computer scientists, information technology specialists including students and graduates.

## **Haematologica (Rome, Italy)**

This book discusses various aspects of text data mining. Unlike other books that focus on machine learning or databases, it approaches text data mining from a natural language processing (NLP) perspective. The book offers a detailed introduction to the fundamental theories and methods of text data mining, ranging from pre-processing (for both Chinese and English texts), text representation and feature selection, to text classification and text clustering. It also presents the predominant applications of text data mining, for example, topic modeling, sentiment analysis and opinion mining, topic detection and tracking, information extraction, and automatic text summarization. Bringing all the related concepts and algorithms together, it offers a comprehensive, authoritative and coherent overview. Written by three leading experts, it is valuable both as a textbook and as a reference resource for students, researchers and practitioners interested in text data mining. It can also be used for classes on text data mining or NLP.

## **Near Field Communication (NFC)**

Professionalism is arguably more important in some occupations than in others. It is vital in some because of the life and death decisions that must be made, for example in medicine. In others the rapidly changing nature of the occupation makes efficient regulation difficult and so the professional behaviour of the practitioners is central to the good functioning of that occupation. The core idea behind this book is that Information and Communication Technology (ICT) is changing so quickly that professional behaviour of its practitioners is vital because regulation will always lag behind.

## **Yearbook of International Organizations**

The Internet of Things (IoT) has attracted much attention from society, industry and academia as a promising technology that can enhance day to day activities, and the creation of new business models, products and services, and serve as a broad source of research topics and ideas. A future digital society is envisioned, composed of numerous wireless connected sensors and devices. Driven by huge demand, the massive IoT (mIoT) or massive machine type communication (mMTC) has been identified as one of the three main communication scenarios for 5G. In addition to connectivity, computing and storage and data management are also long-standing issues for low-cost devices and sensors. The book is a collection of outstanding technical research and industrial papers covering new research results, with a wide range of features within the 5G-and-beyond framework. It provides a range of discussions of the major research challenges and achievements within this topic.

## **Text Data Mining**

This book explores the use of a socio-inspired optimization algorithm (the Cohort Intelligence algorithm), along with Cognitive Computing and a Multi-Random Start Local Search optimization algorithm. One of the most important types of media used for steganography is the JPEG image. Considering four important aspects of steganography techniques – picture quality, high data-hiding capacity, secret text security and

computational time – the book provides extensive information on four novel image-based steganography approaches that employ JPEG compression. Academics, scientists and engineers engaged in research, development and application of steganography techniques, optimization and data analytics will find the book's comprehensive coverage an invaluable resource.

## **Professionalism in the Information and Communication Technology Industry**

This open access book explores the collision between the sustainable energy transition and the Internet of Things (IoT). In that regard, this book's arrival is timely. Not only is the Internet of Things for energy applications, herein called the energy Internet of Things (eIoT), rapidly developing but also the transition towards sustainable energy to abate global climate is very much at the forefront of public discourse. It is within the context of these two dynamic thrusts, digitization and global climate change, that the energy industry sees itself undergoing significant change in how it is operated and managed. This book recognizes that they impose five fundamental energy management change drivers: 1.) the growing demand for electricity, 2.) the emergence of renewable energy resources, 3.) the emergence of electrified transportation, 4.) the deregulation of electric power markets, 5.) and innovations in smart grid technology. Together, they challenge many of the assumptions upon which the electric grid was first built. The goal of this book is to provide a single integrated picture of how eIoT can come to transform our energy infrastructure. This book links the energy management change drivers mentioned above to the need for a technical energy management solution. It, then, describes how eIoT meets many of the criteria required for such a technical solution. In that regard, the book stresses the ability of eIoT to add sensing, decision-making, and actuation capabilities to millions or perhaps even billions of interacting "smart" devices. With such a large scale transformation composed of so many independent actions, the book also organizes the discussion into a single multi-layer energy management control loop structure. Consequently, much attention is given to not just network-enabled physical devices but also communication networks, distributed control & decision making, and finally technical architectures and standards. Having gone into the detail of these many simultaneously developing technologies, the book returns to how these technologies when integrated form new applications for transactive energy. In that regard, it highlights several eIoT-enabled energy management use cases that fundamentally change the relationship between end users, utilities, and grid operators. Consequently, the book discusses some of the emerging applications for utilities, industry, commerce, and residences. The book concludes that these eIoT applications will transform today's grid into one that is much more responsive, dynamic, adaptive and flexible. It also concludes that this transformation will bring about new challenges and opportunities for the cyber-physical-economic performance of the grid and the business models of its increasingly growing number of participants and stakeholders.

## **Internet of Things and Sensors Networks in 5G Wireless Communications**

This book reports on research and developments in human-technology interaction. A special emphasis is given to human-computer interaction, and its implementation for a wide range of purposes such as healthcare, aerospace, telecommunication, and education, among others. The human aspects are analyzed in detail. Timely studies on human-centered design, wearable technologies, social and affective computing, augmented, virtual and mixed reality simulation, human rehabilitation and biomechanics represent the core of the book. Emerging technology applications in business, security, and infrastructure are also critically examined, thus offering a timely, scientifically-grounded, but also professionally-oriented snapshot of the current state of the field. The book is based on contributions presented at the 3rd International Conference on Human Interaction and Emerging Technologies: Future Applications, IHET 2020, held on August 27-29, 2020. It offers a timely survey and a practice-oriented reference guide to researchers and professionals dealing with design and/or management of the new generation of service systems.

## **Optimization Models in Steganography Using Metaheuristics**

This book constitutes the refereed proceedings of the 12th IFIP WG 5.5/SOCOLNET Advanced Doctoral

Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021, held in Costa de Caparica, Portugal, in July 2021.\* The 34 papers presented were carefully reviewed and selected from 92 submissions. The papers present selected results produced in engineering doctoral programs and focus on technological innovation for industry and service systems. Research results and ongoing work are presented, illustrated and discussed in the following areas: collaborative networks; smart manufacturing; cyber-physical systems and digital twins; intelligent decision making; smart energy management; communications and electronics; classification systems; smart healthcare systems; and medical devices. \*The conference was held virtually. Chapters “Characteristics of Adaptable Control of Production Systems and the Role of Self-organization Towards Smart Manufacturing” and “Predictive Manufacturing: Enabling Technologies, Frameworks and Applications” are available open access under a Creative Commons Attribution 4.0 International License via [link.springer.com](http://link.springer.com).

## **eIoT**

Human Choice and Computers: Issues of Choice and Quality of Life in the Information Society presents different views about how terrorist actions are influencing political and social discussions and decisions, and it covers questions related to legitimacy and power in the Information Society. Ethical principles are important guidelines for responsible behavior of IT professionals. But even under strong external pressure, long ranging aspects such as education and the roles of developing countries in the Information Society are important to discuss, especially to enable all to actively participate in information processes.

## **Human Interaction, Emerging Technologies and Future Applications III**

International Federation for Information Processing The IFIP series publishes state-of-the-art results in the sciences and technologies of information and communication. The scope of the series includes: foundations of computer science; software theory and practice; education; computer applications in technology; communication systems; systems modeling and optimization; information systems; computers and society; computer systems technology; security and protection in information processing systems; artificial intelligence; and human-computer interaction. Proceedings and post-proceedings of referred international conferences in computer science and interdisciplinary fields are featured. These results often precede journal publication and represent the most current research. The principal aim of the IFIP series is to encourage education and the dissemination and exchange of information about all aspects of computing. For more information about the 300 other books in the IFIP series, please visit [springeronline.com](http://springeronline.com). For more information about IFIP, please visit [www.ifip.org](http://www.ifip.org).

## **Technological Innovation for Applied AI Systems**

The present book contains the proceedings of two conferences held at the World Computer Congress 2010 in Brisbane, Australia (September 20–23) organised by the International Federation for Information Processing (IFIP). In the first part, the reader can find the proceedings of the 9th Human Choice and Computers International Conference (HCC9) organised by the IFIP Technical Committee TC9 on the Relationship Between ICT and Society. The HCC9 part is subdivided into four tracks: Ethics and ICT Governance, Virtual Technologies and Social Shaping, Surveillance and Privacy, and ICT and Sustainable Development. The second part consists of papers given at the Critical Information Infrastructure Protection Conference (CIP) organized by the IFIP Technical Committee TC11 on Security and Privacy Protection in Information Processing Systems. The two parts of the book are introduced by the respective Conference Chairs. Chapter 1 introduces HCC9, providing a short summary of the HCC conference series, which started in 1974, and explaining the overview of HCC9, detailing the rationale behind each of the tracks in this conference. The details related to the papers of each track are discussed by the Track Chairs in the respective introductions to the specific tracks of HCC9 (Chaps. 2, 10, 16 and 22). Finally, Chap. 22 introduces the CIP part.

## **Human Choice and Computers**

This book constitutes the refereed postconference proceedings of the 4th IFIP WG 9.2, 9.6, 11.6, 11.7/FIDIS International Summer School, held in Brno, Czech Republic, in September 2008. The 20 revised papers were carefully selected from numerous submissions during two rounds of reviewing. They are grouped in topical sections on information, ethics, identifiers; privacy issues; wireless security and privacy; challenges of emerging technologies; privacy-enhanced and anonymous applications; business and organizational perspectives; privacy awareness and individual control; and anonymity attacks and analysis. These interdisciplinary contributions target researchers and practitioners interested in the technical, social, ethical or legal perspectives of increasing diversity of information and communication technologies.

## **The Information Society: Emerging Landscapes**

Technology Enhanced Learning (TEL) is a very broad and increasingly mature research field. It encompasses a wide variety of research topics, ranging from the study of different pedagogical approaches and teaching/learning strategies and techniques, to the application of advanced technologies in educational settings such as the use of different kinds of mobile devices, sensors and sensor networks to provide the technical foundation for context-aware, ubiquitous learning. The TEL community has also been exploring the use of artificial intelligence tools and techniques for the development of intelligent learning environments capable of adapting to learners' needs and preferences and providing learners with personalized learning experience. Recognizing the potential of online social networks, social media, and web-based social software tools as learning platforms for online education, the TEL community has devoted significant time and effort into researching how these popular technologies could be combined with appropriate pedagogical approaches to make learning experience more engaging, satisfying, and successful. Among the most important results of these research endeavors are personal learning environments that allow learners to create mash-ups of diverse social software tools based on their own needs and preferences as well as to create and maintain their online learning networks. Undeniably, technological advancement is making education more accessible to an increasing number of people worldwide. To fully exploit the huge benefit the technology is offering, the TEL community is exploring effective approaches for adapting learning resources to address language, generation, and cultural specificities. Aiming to make learning accessible to all, the community has also focused on the development of solutions for learners with special needs. Finally, it should be noted that all the above mentioned research efforts of the TEL community are finding their applications in different learning contexts and domains, including formal education and informal learning, as well as workplace learning in small, medium, and large organizations. Since the scope of TEL research is constantly evolving, the above given overview of the current research efforts does not aim to be exhaustive by any means. Instead, its purpose is to give some insights into the breadth of research topics and challenges that this edited book aims to cover. The book comprises 14 chapters, which are topically organized into several sections. However, this division of chapters into sections is not strictly definitive as each of the chapters itself presents a comprehensive research work that often spans across diverse TEL areas and thus could be categorized into more than one section of the book.

## **What Kind of Information Society? Governance, Virtuality, Surveillance, Sustainability, Resilience**

"This book examines the current scope of theoretical and practical applications on the security of mobile and wireless communications, covering fundamental concepts of current issues, challenges, and solutions in wireless and mobile networks"--Provided by publisher.

## **The Future of Identity in the Information Society**

This book represents the compilation of papers presented at the IFIP Working Group 8.2 conference entitled "Information Technology in the Service Economy: Challenges and Possibilities for the 21 Century." The

conference took place at Ryerson University, Toronto, Canada, on August 10-13, 2008. Participation in the conference spanned the continents from Asia to Europe with paper submissions global in focus as well. Conference submissions included completed research papers and research in progress reports. Papers submitted to the conference went through a double blind review process in which the program co chairs, an associate editor, and reviewers provided assessments and recommendations. The editorial efforts of the associate editors and reviewers in this process were outstanding. To foster high quality research publications in this field of study, authors of accepted papers were then invited to revise and resubmit their work. Through this rigorous review and revision process, 12 completed research papers and 11 research in progress reports were accepted for presentation and publication. Paper workshop sessions were also established to provide authors of emergent work an opportunity to receive feedback from the IFIP 8.2 community. Abstracts of these new projects are included in this volume. Four panels were presented at the conference to provide discussion forums for the varied aspects of IT, service, and globalization. Panel abstracts are also included here.

## **Technological and Social Environments for Interactive Learning**

Collaborative Networks is a fast developing area, as shown by the already large number of diverse real-world implemented cases and the dynamism of its related involved research community. Being recognized as the most focused scientific and technical conference on Collaborative Networks, PRO-VE continues to offer the opportunity for presentation and discussion of both the latest research developments as well as the practical application case studies.

## **Security, Privacy, Trust, and Resource Management in Mobile and Wireless Communications**

This book contains selected papers presented at the 15th IFIP WG 9.2, 9.6/11.7, 11.6/SIG 9.2.2 International Summer School on Privacy and Identity Management, held in Maribor, Slovenia, in September 2020.\* The 13 full papers included in this volume were carefully reviewed and selected from 21 submissions. Also included is a summary paper of a tutorial. As in previous years, one of the goals of the IFIP Summer School was to encourage the publication of thorough research papers by students and emerging scholars. The papers combine interdisciplinary approaches to bring together a host of perspectives, such as technical, legal, regulatory, socio-economic, social or societal, political, ethical, anthropological, philosophical, or psychological perspectives. \*The summer school was held virtually.

## **Information Technology in the Service Economy:**

The First Conference on the History of Nordic Computing (HiNC1) was organized in Trondheim, in June 2003. The HiNC1 event focused on the early years of computing, that is the years from the 1940s through the 1960s, although it formally extended to year 1985. In the preface of the proceedings of HiNC1, Janis Bubenko, Jr., John Impagliazzo, and Arne Sølvberg describe well the peculiarities of early Nordic computing [1]. While developing hardware was a necessity for the first professionals, quite soon the computer became an industrial product. Computer scientists, among others, grew increasingly interested in programming and application software. Progress in these areas from the 1960s to the 1980s was experienced as astonishing. The developments during these decades were taken as the focus of HiNC2. During those decades computers arrived to every branch of large and medium-sized businesses and the users of the computer systems were no longer only computer specialists but also people with other main duties. Compared to the early years of computing before 1960, where the number of computer projects and applications was small, capturing a holistic view of the history between the 1960s and the 1980s is considerably more difficult. The HiNC2 conference attempted to help in this endeavor.

## **Network-Centric Collaboration and Supporting Frameworks**

The papers in this volume comprise the refereed proceedings of the Second IFIP International Conference on Computer and Computing Technologies in Agriculture (CCTA2008), in Beijing, China, 2008. The conference on the Second IFIP International Conference on Computer and Computing Technologies in Agriculture (CCTA 2008) is cooperatively sponsored and organized by the China Agricultural University (CAU), the National Engineering Research Center for Information Technology in Agriculture (NERCITA), the Chinese Society of Agricultural Engineering (CSAE), International Federation for Information Processing (IFIP), Beijing Society for Information Technology in Agriculture, China and Beijing Research Center for Agro-products Test and Farmland Inspection, China. The related departments of China's central government bodies like: Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Education and the Beijing Municipal Natural Science Foundation, Beijing Academy of Agricultural and Forestry Sciences, etc. have greatly contributed and supported to this event. The conference is as good platform to bring together scientists and researchers, agronomists and information engineers, extension servers and entrepreneurs from a range of disciplines concerned with impact of Information technology for sustainable agriculture and rural development. The representatives of all the supporting organizations, a group of invited speakers, experts and researchers from more than 15 countries, such as: the Netherlands, Spain, Portugal, Mexico, Germany, Greece, Australia, Estonia, Japan, Korea, India, Iran, Nigeria, Brazil, China, etc.

## **Privacy and Identity Management**

It is well known that the 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 technology 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.

## **History of Nordic Computing 2**

This book constitutes the refereed proceedings of the Third CCF Conference, NLPCC 2014, held in Shenzhen, China, in December 2014. The 35 revised full papers presented together with 8 short papers were carefully reviewed and selected from 110 English submissions. The papers are organized in topical sections on fundamentals on language computing; applications on language computing; machine translation and multi-lingual information access; machine learning for NLP; NLP for social media; NLP for search technology and ads; question answering and user interaction; web mining and information extraction.

## **Computer and Computing Technologies in Agriculture II, Volume 1**

The five-volume set IFIP AICT 630, 631, 632, 633, and 634 constitutes the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2021, held in Nantes, France, in September 2021.\* The 378 papers presented were carefully reviewed and selected from 529 submissions. They discuss artificial intelligence techniques, decision aid and new and renewed

paradigms for sustainable and resilient production systems at four-wall factory and value chain levels. The papers are organized in the following topical sections: Part I: artificial intelligence based optimization techniques for demand-driven manufacturing; hybrid approaches for production planning and scheduling; intelligent systems for manufacturing planning and control in the industry 4.0; learning and robust decision support systems for agile manufacturing environments; low-code and model-driven engineering for production system; meta-heuristics and optimization techniques for energy-oriented manufacturing systems; metaheuristics for production systems; modern analytics and new AI-based smart techniques for replenishment and production planning under uncertainty; system identification for manufacturing control applications; and the future of lean thinking and practice Part II: digital transformation of SME manufacturers: the crucial role of standard; digital transformations towards supply chain resiliency; engineering of smart-product-service-systems of the future; lean and Six Sigma in services healthcare; new trends and challenges in reconfigurable, flexible or agile production system; production management in food supply chains; and sustainability in production planning and lot-sizing Part III: autonomous robots in delivery logistics; digital transformation approaches in production management; finance-driven supply chain; gastronomic service system design; modern scheduling and applications in industry 4.0; recent advances in sustainable manufacturing; regular session: green production and circularity concepts; regular session: improvement models and methods for green and innovative systems; regular session: supply chain and routing management; regular session: robotics and human aspects; regular session: classification and data management methods; smart supply chain and production in society 5.0 era; and supply chain risk management under coronavirus Part IV: AI for resilience in global supply chain networks in the context of pandemic disruptions; blockchain in the operations and supply chain management; data-based services as key enablers for smart products, manufacturing and assembly; data-driven methods for supply chain optimization; digital twins based on systems engineering and semantic modeling; digital twins in companies first developments and future challenges; human-centered artificial intelligence in smart manufacturing for the operator 4.0; operations management in engineer-to-order manufacturing; product and asset life cycle management for smart and sustainable manufacturing systems; robotics technologies for control, smart manufacturing and logistics; serious games analytics: improving games and learning support; smart and sustainable production and supply chains; smart methods and techniques for sustainable supply chain management; the new digital lean manufacturing paradigm; and the role of emerging technologies in disaster relief operations: lessons from COVID-19 Part V: data-driven platforms and applications in production and logistics: digital twins and AI for sustainability; regular session: new approaches for routing problem solving; regular session: improvement of design and operation of manufacturing systems; regular session: crossdock and transportation issues; regular session: maintenance improvement and lifecycle management; regular session: additive manufacturing and mass customization; regular session: frameworks and conceptual modelling for systems and services efficiency; regular session: optimization of production and transportation systems; regular session: optimization of supply chain agility and reconfigurability; regular session: advanced modelling approaches; regular session: simulation and optimization of systems performances; regular session: AI-based approaches for quality and performance improvement of production systems; and regular session: risk and performance management of supply chains \*The conference was held online.

## **Diffusion and Adoption of Information Technology**

This important text/reference presents the latest research and developments in the field of mobile payment systems (MPS), covering issues of mobile device security, architectures and models for MPS, and transaction security in MPS. Topics and features: introduces the fundamental concepts in MPS, discussing the benefits and disadvantages of such systems, and the entities that underpin them; reviews the mobile devices and operating systems currently available on the market, describing how to identify and avoid security threats to such devices; examines the different models for mobile payments, presenting a classification based on their core features; presents a summary of the most commonly used cryptography schemes for secure communications; outlines the key challenges in MPS, covering security for ubiquitous mobile commerce and usability issues; highlights the opportunities offered by mobile cloud computing and vehicular ad hoc networks in the design and development of MPS.



## **Natural Language Processing and Chinese Computing**

Learn about the basics and the future of vehicular networking research with this essential guide to in- and inter-vehicle communication.

## **Advances in Production Management Systems. Artificial Intelligence for Sustainable and Resilient Production Systems**

This publication identifies and discusses important challenges affecting eHealth in the EU and North America in the three areas of law, ethics and governance. It makes meaningful contributions to the eHealth discourse by suggesting solutions and making recommendations for good practice and potential ways forward. Legal challenges discussed include issues related to electronic medical records, telemedicine, the Internet and pharmaceutical drugs, healthcare information systems and medical liability. Ethical challenges focus on telehealth and service delivery in the home, Web 2.0 and the Internet, patient perceptions and ethical frameworks. Governance challenges focus on IT governance in healthcare, governance and decision-making in acute care hospitals, and different models of eHealth governance. The publication provides useful support materials and readings for persons active in developing current understandings of the legal, ethical and governance challenges involved in the eHealth context.

## **Mobile Payment Systems**

In this book, the author examines the ethical implications of Artificial Intelligence systems as they integrate and replace traditional social structures in new sociocognitive-technological environments. She discusses issues related to the integrity of researchers, technologists, and manufacturers as they design, construct, use, and manage artificially intelligent systems; formalisms for reasoning about moral decisions as part of the behavior of artificial autonomous systems such as agents and robots; and design methodologies for social agents based on societal, moral, and legal values. Throughout the book the author discusses related work, conscious of both classical, philosophical treatments of ethical issues and the implications in modern, algorithmic systems, and she combines regular references and footnotes with suggestions for further reading. This short overview is suitable for undergraduate students, in both technical and non-technical courses, and for interested and concerned researchers, practitioners, and citizens.

## **Vehicular Networking**

The International Conference on Communications, Management, and Information Technology (ICCMIT'16) provides a discussion forum for scientists, engineers, educators and students about the latest discoveries and realizations in the foundations, theory, models and applications of systems inspired on nature, using computational intelligence methodologies, as well as in emerging areas related to the three tracks of the conference: Communication Engineering, Knowledge, and Information Technology. The best 25 papers to be included in the book will be carefully reviewed and selected from numerous submissions, then revised and expanded to provide deeper insight into trends shaping future ICT.

## **eHealth: Legal, Ethical and Governance Challenges**

This volume contains the edited proceedings of the Working Conference on the Transfer and Diffusion of IT for Organizational Resilience, sponsored by the International Federation for Information Processing (IFIP) Working Group 8.6 (Transfer and Diffusion of Information Technology), and held in Galway, Ireland in June of 2006. The material contained in this book represents current thinking on the topic of resilience by academics and leading practitioners.

## **Responsible Artificial Intelligence**

This book gathers papers addressing state-of-the-art research in all areas of information and communication technologies and their applications in intelligent computing, cloud storage, data mining and software analysis. It presents the outcomes of the Fourth International Conference on Information and Communication Technology for Intelligent Systems, which was held in Ahmedabad, India. Divided into two volumes, the book discusses the fundamentals of various data analysis techniques and algorithms, making it a valuable resource for researchers and practitioners alike.

## **Shaping the Future of ICT**

The papers in this volume comprise the refereed proceedings of the Second IFIP International Conference on Computer and Computing Technologies in Agriculture (CCTA2008), in Beijing, China, 2008. The conference on the Second IFIP International Conference on Computer and Computing Technologies in Agriculture (CCTA 2008) is cooperatively sponsored and organized by the China Agricultural University (CAU), the National Engineering Research Center for Information Technology in Agriculture (NERCITA), the Chinese Society of Agricultural Engineering (CSAE), International Federation for Information Processing (IFIP), Beijing Society for Information Technology in Agriculture, China and Beijing Research Center for Agro-products Test and Farmland Inspection, China. The related departments of China's central government bodies like: Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Education and the Beijing Municipal Natural Science Foundation, Beijing Academy of Agricultural and Forestry Sciences, etc. have greatly contributed and supported to this event. The conference is as good platform to bring together scientists and researchers, agronomists and information engineers, extension servers and entrepreneurs from a range of disciplines concerned with impact of Information technology for sustainable agriculture and rural development. The representatives of all the supporting organizations, a group of invited speakers, experts and researchers from more than 15 countries, such as: the Netherlands, Spain, Portugal, Mexico, Germany, Greece, Australia, Estonia, Japan, Korea, India, Iran, Nigeria, Brazil, China, etc.

## **The Transfer and Diffusion of Information Technology for Organizational Resilience**

This comprehensive text/reference examines the various challenges to secure, efficient and cost-effective next-generation wireless networking. Topics and features: presents the latest advances, standards and technical challenges in a broad range of emerging wireless technologies; discusses cooperative and mesh networks, delay tolerant networks, and other next-generation networks such as LTE; examines real-world applications of vehicular communications, broadband wireless technologies, RFID technology, and energy-efficient wireless communications; introduces developments towards the 'Internet of Things' from both a communications and a service perspective; discusses the machine-to-machine communication model, important applications of wireless technologies in healthcare, and security issues in state-of-the-art networks.

## **Information and Communication Technology for Intelligent Systems**

This book provides a thorough treatment of privacy and security issues for researchers in the fields of smart grids, engineering, and computer science. It presents comprehensive insight to understanding the big picture of privacy and security challenges in both physical and information aspects of smart grids. The authors utilize an advanced interdisciplinary approach to address the existing security and privacy issues and propose legitimate countermeasures for each of them in the standpoint of both computing and electrical engineering. The proposed methods are theoretically proofed by mathematical tools and illustrated by real-world examples.

## **Computer and Computing Technologies in Agriculture II, Volume 3**

As networks of video cameras are installed in many applications like security and surveillance, environmental monitoring, disaster response, and assisted living facilities, among others, image understanding in camera networks is becoming an important area of research and technology development. There are many challenges that need to be addressed in the process. Some of them are listed below: - Traditional computer vision challenges in tracking and recognition, robustness to pose, illumination, occlusion, clutter, recognition of objects, and activities; - Aggregating local information for wide area scene understanding, like obtaining stable, long-term tracks of objects; - Positioning of the cameras and dynamic control of pan-tilt-zoom (PTZ) cameras for optimal sensing; - Distributed processing and scene analysis algorithms; - Resource constraints imposed by different applications like security and surveillance, environmental monitoring, disaster response, assisted living facilities, etc. In this book, we focus on the basic research problems in camera networks, review the current state-of-the-art and present a detailed description of some of the recently developed methodologies. The major underlying theme in all the work presented is to take a network-centric view whereby the overall decisions are made at the network level. This is sometimes achieved by accumulating all the data at a central server, while at other times by exchanging decisions made by individual cameras based on their locally sensed data. Chapter One starts with an overview of the problems in camera networks and the major research directions. Some of the currently available experimental testbeds are also discussed here. One of the fundamental tasks in the analysis of dynamic scenes is to track objects. Since camera networks cover a large area, the systems need to be able to track over such wide areas where there could be both overlapping and non-overlapping fields of view of the cameras, as addressed in Chapter Two: Distributed processing is another challenge in camera networks and recent methods have shown how to do tracking, pose estimation and calibration in a distributed environment. Consensus algorithms that enable these tasks are described in Chapter Three. Chapter Four summarizes a few approaches on object and activity recognition in both distributed and centralized camera network environments. All these methods have focused primarily on the analysis side given that images are being obtained by the cameras. Efficient utilization of such networks often calls for active sensing, whereby the acquisition and analysis phases are closely linked. We discuss this issue in detail in Chapter Five and show how collaborative and opportunistic sensing in a camera network can be achieved. Finally, Chapter Six concludes the book by highlighting the major directions for future research. Table of Contents: An Introduction to Camera Networks / Wide-Area Tracking / Distributed Processing in Camera Networks / Object and Activity Recognition / Active Sensing / Future Research Directions

## **Next-Generation Wireless Technologies**

Data science is emerging as a field that is revolutionizing science and industries alike. Work across nearly all domains is becoming more data driven, affecting both the jobs that are available and the skills that are required. As more data and ways of analyzing them become available, more aspects of the economy, society, and daily life will become dependent on data. It is imperative that educators, administrators, and students begin today to consider how to best prepare for and keep pace with this data-driven era of tomorrow. Undergraduate teaching, in particular, offers a critical link in offering more data science exposure to students and expanding the supply of data science talent. Data Science for Undergraduates: Opportunities and Options offers a vision for the emerging discipline of data science at the undergraduate level. This report outlines some considerations and approaches for academic institutions and others in the broader data science communities to help guide the ongoing transformation of this field.

## **Smart Grids: Security and Privacy Issues**

This book constitutes the refereed proceedings of the 13th IFIP TC 9 International Conference on Human Choice and Computers, HCC13 2018, held at the 24th IFIP World Computer Congress, WCC 2018, in Poznan, Poland, in September 2018. The 29 revised full papers presented were carefully reviewed and selected from 48 submissions. The papers are based on both academic research and the professional experience of information practitioners working in the field. They deal with multiple challenges society will be facing in the future and are organized in the following topical sections: history of computing: \

changed everything"; ICT4D and improvements of ICTs; ICTs and sustainability; gender; ethical and legal considerations; and philosophy.

## **Camera Networks**

Data Science for Undergraduates

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