Smarter Homes How Technology Has Changed Your Home Life

Technologically supported healthcare management is beginning to take center stage as advances occur in many aspects of healthcare, involving big data, artificial intelligence, and improved user interfaces. This volume provides a perspective on a number of such advances, ranging from homecare with remote network support and primary homecare to telemedicine application for pediatric cardiology. A special section with chapters on Clinical Decision Support Systems (CDSS) addresses topics in improved human interfaces, intelligent support for better quality home and institutional care, effective big data visualization for decision-makers, and gathering data from multiple sources to support the battle against resistant bacteria.

Smart Homes in easy steps shows you how to start to take advantage of the current smart technology that is beginning to revolutionise the way in which we run our homes! The idea of a smart home – using digital devices throughout the home that can be controlled by digital voice assistants, apps, smartphones and tablets – is not a science fiction vision of the future: it is very much part of the here and now, and available to all. Also known as the Internet of Things (IoT), smart home devices can be used to automate tasks, save time and money, and to control devices in your home with a touch of a button – even when you are somewhere else. Smart Homes in easy steps takes the mystery out of all of the elements that are required to set up a smart home: it defines a smart home and shows what is needed to make a home smart: digital voice assistants, devices and apps. Initially, the book looks at the concept of a smart home and how it is now affordable and accessible enough for it to be a serious option for any household. Then, setting up items for a smart home is covered in detail – installing the devices, and also linking them to apps and digital voice assistants for controlling them. The book then examines the digital voice assistants that can be used in the home to control smart home devices, including detailed information about using the most popular options (and their related speakers): Alexa and the Amazon Echo; Google Assistant and the Google Home; and Siri and the Apple HomePod. The book then looks at specific areas of smart home devices, including installation and setup, and how to control them once they are up and running. Some of the areas that are covered in detail include: Smart lighting Smart heating Smart security systems Smart home cameras Smart locks Smart plugs Illustrated using Amazon Echo and Alexa; Google Assistant and Google Home; Apple HomePod and the Home app; and Nest. Smart Homes in easy steps is not a look into the future: it is a comprehensive yet concise, step-by-step guide on how to start transforming your home right now, using this exciting and now affordable technology – for smart learning! Contents: 1. About Smart Homes 2. About Digital Voice Assistants 3. Alexa and the Amazon Echo 4. Google Assistant and Google Home 5. HomePod and the Home app 6. Using Smart Devices 7. Smart Lighting 8. Smart Heating 9. Smart Security 10. More Smart Home Options 11. Looking Forward This book focuses on the development of wellness protocols for smart home monitoring, aiming to forecast the wellness of individuals living in ambient assisted living (AAL) environments. It describes in detail the design and implementation of heterogeneous wireless sensors and networks as applied to data mining and machine

learning, which the protocols are based on. Further, it shows how these sensor and actuator nodes are deployed in the home environment, generating real-time data on object usage and other movements inside the home, and therefore demonstrates that the protocols have proven to offer a reliable, efficient, flexible, and economical solution for smart home systems. Documenting the approach from sensor to decision making and information generation, the book addresses various issues concerning interference mitigation, errors, security and large data handling. As such, it offers a valuable resource for researchers, students and practitioners interested in interdisciplinary studies at the intersection of wireless sensing processing, radio communication, the Internet of Things and machine learning, and in how they can be applied to smart home monitoring and assisted living environments.

"This multi-volume book delves into the many applications of information technology ranging from digitizing patient records to high-performance computing, to medical imaging and diagnostic technologies, and much more"--

The thought behind this publication is to continue to develop an active research community dedicated to explore how Smart Homes and Health Telematics can foster independent living and offer an enhanced quality of life for ageing and disabled people. As we begin to witness the effects of changing demographics on today's society we begin to appreciate that the increase in the number of elderly and in the prevalence of those suffering from chronic disease and disabilities are likely to further increase in the next two to three decades. To react to the needs of this cohort to provide an environment within which the people can reside for as long as possible, whilst maintaining their quality of life and independence, is a widespread concern for all. As such, there is real benefit to further investigate the role of technologies to address these changes and subsequently offer practical solutions to support independent living. The editors feel that within the realms of Smart Homes and Health Telematics real, affordable and useful services can be developed which will have the necessary underlying technological and service delivery infrastructures to allow seamless integration into existing care delivery paradigms. The introduction of technology can provide a positive impact. However, it is necessary to avoid any detrimental effects if reliance upon technology within the home environment becomes so great that people will not leave their own home in fear of losing the support once outside of the home, or its close proximity. This publication focuses on promoting personal autonomy and extending the quality of life by considering including smart services inside and outside of the home.

The development and advancement of personalised health management systems requires the consideration of advances in sensor technologies and advanced textiles in addition to nano technologies and evolving information and communication technologies. We are now living in an environment where changes in healthcare structures and requests from patients to have an increased participation in their own healthcare are demanding the availability of affordable and readily available personalised health management systems. Recent research has taken us a step closer in providing such solutions, however, efforts are still required to address the issues of integration of new technologies into existing health care practices, implications of interoperability of services, analysis of results following large scale clinical evaluations and development of technology which is small, reliable and affordable by its users. This

publication shows a synergy between research efforts in three diverse areas; sensor technologies, advanced textiles and nanotechnology and computing. It brings together researchers from academia, industry and clinical healthcare provision and emphasises the need for multi-disciplinary collaborations in the future developments of personalised health management systems.

The term 'Smart Home' generates a lot of buzz in recent times. Most of the times, the idea resonates around ad-hoc solutions that convert your home into a digital gadget. Google, Apple, Amazon, etc. has lots of solutions that make homes more fun and entertaining in recent times. However, just a few people have given Home Technology a very holistic thought. An iPhone is a unified product, marrying hardware and software - same as (recent) automobiles. But when it comes to homes, there is a party that is just concerned with the Building Structure/Delivery; and yet another party concerned with Building Technology. This brings about a divide and ends up keeping homes from being unified solutions that they should be. This book challenges that status quo. It began by exploring the concepts of Smart Homes. The Fundamentals, the Technology Foundations, the Structural Components, the Technological Components. The first part ended by offering some very Unique Innovations that are only possible with the Technology Foundations of Smart Building Technology. Such innovations as the use of Direct Electricity (Solar), Operating Systems, Unified Cabling, etc. The second part of the book tells a (holistic) story of the 'Smart Home Delivery Company'. Imagine Apple for Smartphones or Mercedez for Automobiles. This started with the Planning Process; then to the Design Coordination; and then to the wider Value Chain; to the Prefabrication Process. It ended with the Management of the Smart Home Facility. The role of such transformational processes as Building Information Modeling (BIM) is a central theme of the second part of this book. The last part proffers solutions that are possible with Smart Building Technology. Again this is from a very holistic viewpoint. It summarizes the book in a very interactive way - taking the reader through the journey of purchasing a Unified Smart Home, in a similar way you purchase an iPhone. A very important takeaway from this book is that Smart Homes should holistically merge a Building Structure with the Building Technology - right from the design stage of the home. This concept can easily be extended to other types of buildings - Commercial, Entertainment, etc. We believe that by reading this book, you will gain a renewed sense of refreshment about the future of the Architecture, Engineering, and Construction (AEC) sector.

The two volume set, CCIS 265 and 266, constitutes the refereed proceedings of the International Conference, FGCN 2011, held as Part of the Future Generation Information Technology Conference, FGIT 2011, Jeju Island, Korea, in December 2011. The papers presented were carefully reviewed and selected from numerous submissions and focus on the various aspects of future generation communication and networking.

Nowadays networks, microprocessors, memory chips, smart sensors and actuators are faster, cheaper and smaller than ever. They are becoming available anywhere, anytime. Current advances in such enabling technologies let foresee novel applications and services for improving the life of elderly and disabled people in their home and outside. These conference proceedings present the latest approaches and technical solutions in the area of smart homes, health telematics, and enabling technologies. The first chapter delves into the user perspective to ascertain real needs and design truly useful services. The following chapter explores the

enabling technology. Distributed sensors, smart devices and networks appear as the nuts and bolts compulsory to build up smart homes. Chapter three looks at the realization of smart homes. Pervasive computing is emerging as one of the key approaches to organize computations within smart homes. The fourth chapter addresses the issue of using smart home features to design and deliver smart care services to persons with disabilities and elderly people. Finally Chapter five outlines standardization efforts and practical and industrial experiences. ICOST aims at creating an active research community dedicated to explore how smart homes in particular and health telematics in general can foster independent living and an enhanced life style for elderly and disabled people. On the one hand, smart homes are augmented environments with embedded computers, information appliances and multi-modal sensors allowing people to perform tasks efficiently by offering unprecedented levels of access to information and assistance from computer. On the other hand, health telematics makes the most of networks and telecommunications to propose health services, expertise and information at distance.

New Book Reveals 13 Assistive Technology Solutions That Play An Important Role In Supporting Aging Adults. Learn How to use technology to improve the quality of your life at home as you get older! This book is intended to be read by the following people: [+] Individuals that are 45 years of age and above, who want to be able to live at home safely, comfortably and securely for as long as possible. [+] Aging adults living alone who have a preference to live independently at home and delay or completely negate the need to move to nursing home facilities. [+] People who feel nervous, scared or lacking the necessary knowledge to allow technology into their homes and lives. We are in the midst of a senior population bulge that will last for the next 20-30 years and put immense strain on the resources of our families and governments. This short ebook is worth checking out if you are part of this generation and want to see what you can do to help yourself. Children living long distances from their aging parents who are worried and want to use senior focused technology systems to help them remotely monitor their loved ones. This e-book explains 13 technology solutions and services that will allow you to face the many challenges associated with growing old gracefully and with dignity. This book includes the two short and one really long chapter: Chapter 1: Independent Living 2.0 Introduction – This chapter describes next generation Independent Living (IL 2.0) and associated benefits. Chapter 2: Next Generation IL 2.0 Solutions - The second and 'longeeeeeest' chapter helps seniors learn about 13 different IL 2.0 systems ranging from flood detection systems and PERs to Home Security Alarm System and socialization technologies. Chapter 3: Final Thoughts Populations around the world are aging and most if not all adults prefer to grow old in their own homes. This short book is worth checking out if you are part of this generation and want to see what you can do to help yourself.

This Special Issue presents the recent advances in sensor technologies for smart homes, including fiber Bragg grating (FBG) sensors for detecting the presence and number of occupants, the Internet of things for monitoring CO_2 concentration, and designing a novel eye-tracking system for monitoring and controlling a smart home, and infrared thermal sensors for fall detection. Such new explorations are pushing the boundary of sensing technologies and, thus, will have more profound implications for the future smart home. Advanced machine learning and data mining algorithms have been proposed to address sensor failure, appliance identification, and human activity recognition in a home environment. These results will enable a promising, sustainable deployment of sensing technologies. A novel multi-agent gamification system is proposed for managing tasks between household members and between families, which demonstrate another dimension of future smart home application. This Special Issue concludes with a review on sensors for human activity recognition. This work paves the roadmap for deploying smart home systems in different socioeconomic contexts. The whole Special Issue has significantly helped to shape our understanding of the strength, implications,

and barriers of deploying long-term, sustainable, sensor technologies for smart homes. Cyberspace is a ubiquitous realm interconnecting every aspect of modern society, enabled by broadband networks and wireless signals around us, existing within local area networks in our schools, hospitals and businesses, and within the massive grids that power most countries. Securing cyberspace to ensure the continuation of growing economies and to protect a nation's way of life is a major concern for governments around the globe. This book contains papers presented at the NATO Advanced Research Workshop (ARW) entitled Best Practices and Innovative Approaches to Develop Cyber Security and Resiliency Policy Framework, held in Ohrid, the Former Yugoslav Republic of Macedonia (FYROM), in June 2013. The workshop aimed to develop a governing policy framework for nation states to enhance the cyber security of critical infrastructure. The 12 papers included herein cover a wide range of topics from web security and end-user training, to effective implementation of national cyber security policies and defensive countermeasures. The book will be of interest to cyber security professionals, practitioners, policy-makers, and to all those for whom cyber security is a critical and an important aspect of their work.
Title Page -- Contents -- Message from James K. Scott, Director of the European Union Center at the University of Missouri -- A Comprehensive Model for Evaluating Telemedicine -- Home Based E-Health Applications -- Mr. Young's Doctor:How Must Physicians Be Prepared for Practice? -- E-Health Tools and Social Workers -- Telework for Persons with Disabilities in the EU and the USA: What Can We Learn from Each Other? -- Evidence-Based Retrieval in E-Health -- The Impact of Genomics on E-Health -- Privacy Enhancing Techniques in E-Hea!th: An Overview -- Health Captology - Application of Persuasive Technologies to Health Care -- Speak-ER: An Audible Web-Based Medical Record for Emergency Patients -- MobiHealth: Ambulant Patient Monitoring Over Next Generation Public Wireless Networks -- Service Level Web Monitoring in the Field Management of Emergencies -- E-Health in the Scandinavian Countries -- Author Index
Do you long to listen to your favorite CD from anywhere in your house? To set up a wireless network so you can access the Internet in any room? To install an iron-clad security system? To fire up the coffee pot while you're still asleep and wake up with automated lighting? Smart home technology can help you do just that! Smart Homes For Dummies, Third Edition, shows you how easy it can be to create and live in a cutting-edge, fully connected home—without breaking your bank account. With this user-friendly guide, you'll discover all the latest trends and gadgets in home networking, automation, and control that will help you make life more enjoyable and comfortable for your entire family. We help you plan for things such as flat-screen TVs, intercom systems, whole-home audio systems, gaming consoles, and satellite systems. We talk about your wiring (and wireless) options and introduce you to the latest technologies, such as VoIP and Bluetooth. You'll see how to: Build your home network on a budget Turn your home into an entertainment center Access the Internet from any room Get VoIP on your phone network Boost in-home wireless and cell phone signals Connect your computer to your TV Secure your home and property Increase your home's resale value Avoid common networking pitfalls And much, much more Complete with a resource list for more information and neat toys of the future, Smart Homes For Dummies is your plain-English, twenty-first century guide to a fully wired home!
Independent living with smart technologies Smart Technology for Aging, Disability, and Independence: The Stateof the Science brings together current research and technologicaldevelopments from engineering, computer science, and therehabilitation sciences, detailing how its applications can promotecontinuing independence for older persons and those withdisabilities. Leading experts from multiple disciplines worldwide havecontributed to this volume, making it the definitive resource. Thetext begins with a thorough introduction that presents importantconcepts, defines key terms, and identifies demographic trends atwork.

Using detailed product descriptions, photographs andillustrations, and case studies, subsequent chapters discusscutting-edge technologies, including: * Wearable systems * Human-computer interactions * Assisted vision and hearing * Smart wheelchairs * Handheld devices and smart phones * Visual sensors * Home automation * Assistive robotics * In-room monitoring systems * Telehealth After considering specific high-technology solutions, the textexamines recent trends in other critical areas, such as basicassistive technologies, driving, transportation and communitymobility, home modifications and design, and changing standards ofelder care. Students and professionals in the rehabilitation sciences, healthcare providers, researchers in computer science and engineering,and non-expert readers will all appreciate this text's thoroughcoverage and clear presentation of the state of the science. The area of smart homes is fast developing as an emergent area which attracts the synergy of several areas of science. This volume offers a collection of contributions addressing how artificial intelligence (AI), one of the core areas of computer science, can bring the growing area of smart homes to a higher level of functionality where homes can truly realize the long standing dream of proactively helping their inhabitants in an intelligent way. After an introductory section to describe a smart home scenario and to provide some basic terminology, the following 9 sections turn special attention to a particular exemplar application scenario (provision of healthcare and safety related services to increase the quality of life) exploring the application of specific areas of AI to this scenario.

This book clearly explains when and how different rehabilitation techniques should be applied in the aging patient, thereby enabling readers to identify and apply those rehabilitation strategies that will maximize quality of life and functional independence in individual cases. It is specifically designed for ease of consultation and rapid retrieval of the information most relevant to clinical practice. Prominence is given to the benefits of a multidisciplinary approach to rehabilitation, with discussion of a very wide range of aspects of rehabilitation in different disease settings. The breadth of coverage is illustrated by the attention paid to less commonly addressed topics such as visual and hearing rehabilitation, the role of robotics and 3D imaging techniques, variations in approach among health care systems, and rehabilitation in end-of-life care. The authors are international academic experts in their fields, guaranteeing a high scientific standard throughout. This manual will be an invaluable tool and source of knowledge for geriatricians and physiatrists but will also appeal to a wider range of clinicians, practitioners, and students.

We are living in a world full of innovations for the elderly and people with special needs to use smart assistive technologies and smart homes to more easily perform activities of daily living, to continue in social participation, to engage in entertainment and leisure activities, and to enjoy living independently. These innovations are inspired by new technologies leveraging all aspects of ambient and pervasive intel- gence with related theories, technologies, methods, applications, and services on ub- uitous, pervasive, AmI, universal, mobile, embedded, wearable, augmented, invisible, hidden, context-aware, calm, amorphous, sentient, proactive, post–PC, everyday, autonomic computing from the engineering, business and organizational perspectives. In the field of smart homes and health telematics, significant research is underway to enable aging

and disabled people to use smart assistive technologies and smart homes to foster independent living and to offer them an enhanced quality of life. A smart home is a vision of the future where computers and computing devices will be available naturally and unobtrusively anywhere, anytime, and by different means in our daily living, working, learning, business, and infotainment environments. Such a vision opens tremendous opportunities for numerous novel services/applications that are more immersive, more intelligent, and more interactive in both real and cyber spaces.

eHealth has revolutionized health care and the practice of medicine. Internet technologies have given the most rural communities access to healthcare services, and automated computer algorithms are improving medical diagnoses and speeding up the delivery of care. Handheld apps, wearable devices, and artificial intelligence lead the way, creating a global healthcare solution that is smarter and more accessible. Read what leaders in the field are doing to advance the use of electronic technology to improve global health.

We often conceptualize that older adults retire into a life of carefree luxury among palm trees, golf courses, and pristine beaches. Unfortunately, reality differs today – many retire in place, and often it is the case they retire in rural areas far from hospitals and care-giving centers. For instance, over half of the older population in the state of Minnesota lives in small towns away from the center of care, which is Minneapolis/St. Paul. This year, ICOST 2008 aimed at focusing on this important reality and on gerontechnology—the use of technology to enhance the quality of life of older adults in rural lands. We had a strong technical program this year spanning many critical topics incl- ing: remote monitoring and tele-care, access control and privacy preservation, und- standing user requirements and needs, autonomic learning and reasoning about user behavior, activities and contexts, user interface design, middleware for sensing and actuation in smart homes, cognitive assistants, context-aware service provisioning, among other topics. We received a total of 54 submissions of papers, abstracts and posters, from 14 diff- ent countries. Through a blind review process, we accepted 24 full papers, 9 abstracts, and 7 posters. Each submission received two or three reviews with the exception of a few that received four reviews. We are thankful to all the reviewers who helped in the review process including members of the Technical Committee and the additional reviewers that we needed to compensate for unreturned reviews.

Using clear and accessible language this book examines the growing field of 'smart technology' for the home. The author first introduces the field before exploring the various background issues, including how the home differs from other environments. He then shows how these background issues affect the design and usability of these technologies. A detailed case study looks at the use of handheld and wearable digital technology in sheltered housing. The last section examines what it is like to live in a smart home and why they have so far failed to reach the levels of success originally predicted. Invaluable reading for

anybody interested in designing smart technologies for the home.

This book presents the latest research advancements in the operation of smart homes. It comprises new operation techniques including cooperative distributed energy scheduling, framework to react to malicious cyberattacks, framework for demand-side management, and framework for the design of smart homes to support residents' wellness as well as new optimization techniques such as stochastic model predictive control and multi-time scale optimization. In addition, the book analyzes 11,000 studies that have been indexed in scientific databases and categorizes them based on various data points, including the field and the subject of the research, the name of the institutions, and the nationality of the authors. Presents new operation techniques of smart homes; Introduces new optimization techniques for operation of smart homes; Analyses 11,000 studies and categorizes them based on different data points.

This book constitutes the proceedings of the 16th International Conference on Smart Homes and Health Telematics, ICOST 2018, held in Singapore, Singapore, in July 2018. The theme of this year volume is "Designing a better Future: Urban Assisted Living", focusing on quality of life of dependent people not only in their homes, but also in outdoor living environment to improve mobility and social interaction in the city. The 21 regular papers and 11 short papers included in this volume focus on research in the design, development, deployment and evaluation of smart urban environments, assistive technologies, chronic disease management, coaching and health telematics systems.

This book constitutes the refereed proceedings of the 8th International Conference on Ubiquitous Computing, UbiComp 2006. The book presents 30 revised full papers, carefully reviewed and selected from 232 submissions. The papers address all current issues in the area of ubiquitous, pervasive and handheld computing systems and their applications. Topics include improving natural interaction, constructing ubicomp systems, embedding computation, understanding ubicomp and its consequences, and deploying ubicomp technologies.

A Linux smart home is about controlling and monitoring devices and information around your home using a standard personal computer, Linux, and its vast array of open source tools. You don't have to be a master programmer to create one. If you like to tinker with Linux, Linux Smart Homes For Dummies will guide you through cool home automation projects that are as much fun to work on as they are to use. Home automation used to be limited to turning on lights and appliances, and maybe controlling your thermostat and lawn sprinkler, from your computer. While you still might not be able to create all the Jetsons' toys, today you can also Build a wireless network Create and set up a weather station Automate your TV and sound system Spy on your pets when you're not home Set up an answering system that knows what to do with calls Increase your home's security If you know how to use Linux and a few basic development tools — Perl, the BASH shell, development libraries, and the GNU C compiler—Linux Smart Homes For Dummies will help you do all these tricks and more. For example, you can Discover the best sources for Linux-based home automation devices Set up a wireless network, create a wireless access point, build a bridge between wired and wireless networks, and route your own network traffic Build a personal video recorder with MythTV that

will record to DVD, or set up a wireless streaming music system Create a smart phone system that takes messages and forwards them to your fax, modem, or answering machine Build a weather station that notifies you of severe weather alerts Control and secure your home automation network, and even check on your house when you're away The bonus CD-ROM includes all kinds of cool open source software for your home automation projects. Linux Smart Homes For Dummies even includes lists of cool gadgets to check out and great ways to automate those boring household chores. A smart home's a happy home!

This book provides an overview of the next generation Internet of Things (IoT), ranging from research, innovation, development priorities, to enabling technologies in a global context. It is intended as a standalone in a series covering the activities of the Internet of Things European Research Cluster (IERC), including research, technological innovation, validation, and deployment. The text builds on the ideas put forward by the European Research Cluster, the IoT European Platform Initiative (IoT-EPI), the IoT European Large-Scale Pilots Programme and the IoT European Security and Privacy Projects, presenting global views and state-of-the-art results regarding the next generation of IoT research, innovation, development, and deployment. The IoT and Industrial Internet of Things (IIoT) are evolving towards the next generation of Tactile IoT/IIoT, bringing together hyperconnectivity (5G and beyond), edge computing, Distributed Ledger Technologies (DLTs), virtual and augmented reality (VR/AR), and AI transformation. Following the wider adoption of consumer IoT, the next generation of IoT/IIoT innovation for business is driven by industries, addressing interoperability issues and providing new end-to-end security solutions to face continuous treats. The advances of AI technology in vision, speech recognition, natural language processing and dialog are enabling the development of end-to-end intelligent systems encapsulating multiple technologies, delivering services in real-time using limited resources. These developments are focusing on designing and delivering embedded and hierarchical AI solutions in IoT/IIoT, edge computing, using distributed architectures, DLTs platforms and distributed end-to-end security, which provide real-time decisions using less data and computational resources, while accessing each type of resource in a way that enhances the accuracy and performance of models in the various IoT/IIoT applications. The convergence and combination of IoT, AI and other related technologies to derive insights, decisions and revenue from sensor data provide new business models and sources of monetization. Meanwhile, scalable, IoT-enabled applications have become part of larger business objectives, enabling digital transformation with a focus on new services and applications. Serving the next generation of Tactile IoT/IIoT real-time use cases over 5G and Network Slicing technology is essential for consumer and industrial applications and support reducing operational costs, increasing efficiency and leveraging additional capabilities for real-time autonomous systems. New IoT distributed architectures, combined with system-level architectures for edge/fog computing, are evolving IoT platforms, including AI and DLTs, with embedded intelligence into the hyperconnectivity infrastructure. The next generation of IoT/IIoT technologies are highly transformational, enabling innovation at scale, and autonomous decision-making in various application domains such as healthcare, smart homes, smart buildings, smart cities, energy, agriculture, transportation and autonomous vehicles, the military, logistics and supply chain, retail and wholesale, manufacturing, mining and oil and gas.

This book, based on extensive international collaborative research, highlights the state-of-the-art design of "smart living" for metropolises, megacities, and metacities, as well as at the community and neighbourhood level. Smart living is one of six main components of smart cities, the others being smart people, smart economy, smart environment, smart mobility and smart governance. Smart living in any smart city can only be designed and implemented with active roles for smart people and smart city government, and as a joint effort combining e-Democracy, e-Governance and ICT-IoT systems. In addition to using information and

communication technologies, the Internet of Things, Internet of Governance (e-Governance) and Internet of People (e-Democracy), the design of smart living utilizes various domain-specific tools to achieve coordinated, effective and efficient management, development, and conservation, and to improve ecological, social, biophysical, psychological and economic well-being in an equitable manner without compromising the sustainability of development ecosystems and stakeholders. This book presents case studies covering more than 10 cities and centred on domain-specific smart living components. The book is issued in two volumes. and this volume focus on city studies.

What makes something "smart?" In the Exploring the Internet of Things series, readers discover how inanimate objects, from watches to home speakers to even t-shirts, help people get things done better, faster, and smarter. In Smart Homes, readers will learn the practical application, technological and future advancements, and innovation of IoT in today's homes. Includes informative sidebars, data-focused text, and 21st Century Skills backmatter content.

Essay from the year 2016 in the subject Computer Science - Internet, New Technologies, , language: English, abstract: This paper aims at presenting the Smart Home concept. This paper describes in detail - a) The Smart Home concept b) Our concepts to model the Smart Home using smart devices c) Adaptive decision making using artificial intelligence and big data d) Large scale implementation of this concept to model a Smart Locality, Smart City up to the level of Smart country. Contrary to the other projects, this work is directed towards a sensors approach and an ontology modelling of the Smart Home. This work has the originality to take into account the real heterogeneity of information present in a habitat. This paper is a good overview to present what is a Smart Home and which are the necessary hardware and software components to make a Smart Home. Smart Home concept has been implemented using smart devices, adaptive decision making using artificial intelligence and big data. The work is directed towards a sensor approach and ontology modelling. This work focuses towards large scale implementation for smart systems.

This book constitutes the proceedings of the 18th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2019, held in Trondheim, Norway, in September 2019. The total of 61 full and 4 short papers presented in this volume were carefully reviewed and selected from 138 submissions. The papers were organized in topical sections named: e-business; big data analytics, open science and open data; artificial intelligence and internet of things; smart cities and smart homes, social media and analytics; digital governance; digital divide and social inclusion; learning and education; security in digital environments; modelling and managing the digital enterprise; digital innovation and business transformation; and online communities.

Examine the history of smart homes, how technology shapes our lives, and ways you can think about the home when developing new products. This book presents the opportunities in the homespace that will come from understanding the history and multiple players that have contributed to the development of the home in general. You'll start by breaking down the historical, societal and political context for the changes in focus of that 'smartness' from affordability, efficiency, convenience to recently experimentation. The second half of the book then reviews what current developments tell us about what our homes will look like in the next 10 years through the lens of spaces, services, appliances and behaviours in our homes. Over the past 100 years, the home has been a battleground for ideas of future living. Fueled by the electrification of cities, the move from the country to cities, post-war recovery and the development of the internet, the way we live at home (alone or with others) has changed beyond recognition. Science fiction writing, the entertainment industry, art, and modern interior design and architecture movements have also contributed to defining our aspirations around a future and now more present and possible 'smart' home. Smarter Homes looks at the many new and innovative products that are being developed in the consumer and industrial spaces with a copy-paste mindset based on following larger businesses, such as Amazon, Google and

Apple. What You'll Learn Understand the historical context for current smart home products Review the social aspect of home product development Discover new home technologies being developed and which ones are available now Track the industry behaviors being leveraged and how they may affect longer term market trends for consumer products Who This Book Is For Everyone working in product design and development, in R&D or in trends research, as well as those interested in the IoT for the home. This book will also give product business owners ideas about what has been done before and and avenues for future development.

Provides the foundations and principles needed for addressing the various challenges of developing smart cities Smart cities are emerging as a priority for research and development across the world. They open up significant opportunities in several areas, such as economic growth, health, wellness, energy efficiency, and transportation, to promote the sustainable development of cities. This book provides the basics of smart cities, and it examines the possible future trends of this technology. Smart Cities: Foundations, Principles, and Applications provides a systems science perspective in presenting the foundations and principles that span multiple disciplines for the development of smart cities. Divided into three parts—foundations, principles, and applications—Smart Cities addresses the various challenges and opportunities of creating smart cities and all that they have to offer. It also covers smart city theory modeling and simulation, and examines case studies of existing smart cities from all around the world. In addition, the book: Addresses how to develop a smart city and how to present the state of the art and practice of them all over the world Focuses on the foundations and principles needed for advancing the science, engineering, and technology of smart cities—including system design, system verification, real-time control and adaptation, Internet of Things, and test beds Covers applications of smart cities as they relate to smart transportation/connected vehicle (CV) and Intelligent Transportation Systems (ITS) for improved mobility, safety, and environmental protection Smart Cities: Foundations, Principles, and Applications is a welcome reference for the many researchers and professionals working on the development of smart cities and smart city-related industries.

Intelligent Technologies for Bridging the Grey Digital Divide offers high-quality research with both industry- and practice-related articles in the broad area of intelligent technologies for seniors. The main focus of the book is to provide insights into current innovation, issues to be resolved, and approaches for widespread adoption so that seniors, their families, and their caregivers are able to enjoy their promised benefits.

Prolonged life expectancy along with the increasing complexity of medicine and health services raises health costs worldwide dramatically. Whilst the smart health concept has much potential to support the concept of the emerging P4-medicine (preventive, participatory, predictive, and personalized), such high-tech medicine produces large amounts of high-dimensional, weakly-structured data sets and massive amounts of unstructured information. All these technological approaches along with "big data" are turning the medical sciences into a data-intensive science. To keep pace with the growing amounts of complex data, smart hospital approaches are a commandment of the future, necessitating context aware computing along with advanced interaction paradigms in new physical-digital ecosystems. The very successful synergistic combination of methodologies and approaches from Human-Computer Interaction (HCI) and Knowledge Discovery and Data Mining (KDD) offers ideal conditions for the

vision to support human intelligence with machine learning. The papers selected for this volume focus on hot topics in smart health; they discuss open problems and future challenges in order to provide a research agenda to stimulate further research and progress.

This book comprises selected papers of the International Conferences, SecTech 2011, held as Part of the Future Generation Information Technology Conference, FGIT 2011, in Conjunction with GDC 2011, Jeju Island, Korea, in December 2011. The papers presented were carefully reviewed and selected from numerous submissions and focus on the various aspects of security technology. This book covers a variety of smart IoT applications for industry and research. For industry, the book is a guide for considering the real-time aspects of automation of application domains. The main topics covered in the industry section include real-time tracking and navigation, smart transport systems and application for GPS domains, modern electric grid control for the electricity industry, IoT prospectives for modern society, IoT for modern medical science, and IoT automation for Industry 4.0. The book then provides a summary of existing IoT research that underlines enabling technologies, such as fog computing, wireless sensor networks, data mining, context awareness, real-time analytics, virtual reality, and cellular communications. The book pertains to researchers, outcome-based academic leaders, as well as industry leaders. Covers real-time problems for industry along with unique research methodologies for furthering the field; Includes authentic research datasets for simulated applications in IoT; Features topics such as IoT for retail and supply chain management, smart health, and smart electricity & energy management.

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