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Plc Hardware Discrimination Using Rf-dna Fingerprinting

Createspace Independent Publishing Platform **Programmable Logic Controllers are used to control and monitor automated process in many Supervisory Control and Data Acquisition (SCADA) critical applications. As with virtually all electronic devices, PLCs contain Integrated Circuits (IC) that are often manufactured overseas. ICs that have been unknowingly altered (counterfeited, manufactured with hardware Trojans, etc.) pose a significant security vulnerability. To mitigate this risk, the RF-Distinct Native Attribute (RF-DNA) fingerprinting process is applied to PLC hardware devices to augment bit-level security. RF-DNA fingerprints are generated using two independent signal collection platforms. Two different classifiers are applied for device classification. A verification process is implemented for analysis of Authorized Device Identification and Rogue Device Rejection. Fingerprint feature dimensional reduction is evaluated both Qualitatively and Quantitatively to enhance experimental-to-operational transition potential. The findings of this research are that the higher quality signal collection platform had a classification performance gain of approximately 10dB SNR. Performance of the classifiers varied between signal collection platforms, and also with the application of fingerprint dimensional reduction. The lower quality signal collection platform saw a maximum gain of 5dB SNR using reduced dimensional feature sets compared against the full dimensional feature set.**

ICT Systems Security and Privacy Protection

30th IFIP TC 11 International Conference, SEC 2015, Hamburg, Germany, May 26-28, 2015, Proceedings

Springer **This book constitutes the refereed proceedings of the 30th IFIP TC 11 International Information Security and Privacy Conference, SEC 2015, held in Hamburg, Germany, in May 2015. The 42 revised full papers presented were carefully reviewed and selected from 212 submissions. The papers are organized in topical sections on privacy, web security, access control, trust and identity management, network security, security management and human aspects of security, software security, applied cryptography, mobile and cloud services security, and cyber-physical systems and critical infrastructures security.**

ICMLG 2017 5th International Conference on Management Leadership and Governance

Academic Conferences and publishing limited

ICCWS 2017 12th International Conference on Cyber Warfare and Security

Academic Conferences and publishing limited

11th International Conference on Cyber Warfare and Security

ICCWS2016

Academic Conferences and publishing limited **The 11thInternational Conference on Cyber Warfare and Security (ICCWS 2016) is being held at Boston University, Boston, USA on the 17-18th March 2016. The Conference Chair is Dr Tanya Zlateva and the Programme Chair is Professor Virginia Greiman, both from Boston University. ICCWS is a recognised Cyber Security event on the International research conferences calendar and provides a valuable platform for individuals to present their research findings, display their work in progress and discuss conceptual and empirical advances in the area of Cyber Warfare and Cyber Security. It provides an important opportunity for researchers and managers to come together with peers to share their experiences of using the varied and expanding range of Cyberwar and Cyber Security research available to them. The keynote speakers for the conference are Daryl Haegley from the Department of Defense (DoD), who will address the topic Control Systems Networks...What's in Your Building? and Neal Ziring from the National Security Agency who will be providing some insight to the issue of Is Security Achievable? A Practical Perspective. ICCWS received 125 abstract submissions this year. After the double blind, peer review process there are 43 Academic Research Papers 8 PhD papers Research papers, 7 Masters and 1 work-in-progress papers published in these Conference Proceedings. These papers represent work from around the world, including: Australia, Canada, China, Czech Republic, District of Columbia, Finland, France, Israel, Japan, Lebanon, Netherlands, Pakistan, Russian Federation, Saudi Arabia, South Africa, Turkey, United Arab Emirates, UK, USA.**

Genetic Witness

Forensic Uses of DNA Tests

Proceedings of International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications

ICMISC 2020

Springer Nature **This book gathers selected research papers presented at the International Conference on Recent Trends in Machine Learning, IOT, Smart Cities & Applications (ICMISC 2020), held on 29–30 March 2020 at CMR Institute of Technology, Hyderabad, Telangana, India. Discussing current trends in machine learning, Internet of things, and smart cities applications, with a focus on multi-disciplinary research in the area of artificial intelligence and cyber-physical systems, this book is a valuable resource for scientists, research scholars and PG students wanting formulate their research ideas and find the future directions in these areas. Further, it serves as a reference work anyone wishing to understand the latest technologies used by practicing engineers around the globe.**

Biometrics

Concepts, Methodologies, Tools, and Applications, VOL 1

Information Science Publishing

Physical-Layer Security

From Information Theory to Security Engineering

Cambridge University Press **This complete guide to physical-layer security presents the theoretical foundations, practical implementation, challenges and benefits of a groundbreaking new model for secure communication. Using a bottom-up approach from the link level all the way to end-to-end architectures, it provides essential practical tools that enable graduate students, industry professionals and researchers to build more secure systems by exploiting the noise inherent to communications channels. The book begins with a self-contained explanation of the information-theoretic limits of secure communications at the physical layer. It then goes on to develop practical coding schemes, building on the theoretical insights and enabling readers to understand the challenges and opportunities related to the design of physical layer security schemes. Finally, applications to multi-user communications and network coding are also included.**

Methodologies for Metabolomics

Experimental Strategies and Techniques

Cambridge University Press **Metabolomics, the global characterisation of the small molecule complement involved in metabolism, has evolved into a powerful suite of approaches for understanding the global physiological and pathological processes occurring in biological organisms. The diversity of metabolites, the wide range of metabolic pathways and their divergent biological contexts require a range of methodological strategies and techniques. Methodologies for Metabolomics provides a comprehensive description of the newest methodological approaches in metabolomic research. The most important technologies used to identify and quantify metabolites, including nuclear magnetic resonance and mass spectrometry, are highlighted. The integration of these techniques with classical biological methods is also addressed. Furthermore, the book presents statistical and chemometric methods for evaluation of the resultant data. The broad spectrum of topics includes a vast variety of organisms, samples and diseases, ranging from in vivo metabolomics in humans and animals to in vitro analysis of tissue samples, cultured cells and biofluids.**

Software Defined Radio

Enabling Technologies

John Wiley & Sons **Software defined radio (SDR) is one of the most important topics of research, and indeed development, in the area of mobile and personal communications. SDR is viewed as an enabler of global roaming and as a unique platform for the rapid introduction of new services into existing live networks. It therefore promises mobile communication networks a major increase in flexibility and capability. SDR brings together two key technologies of the last decade - digital radio and downloadable software. It encompasses not only reconfiguration of the air interface parameters of handset and basestation products but also the whole mobile network, to facilitate the dynamic introduction of new functionality and mass-customised applications to the user's terminal, post-purchase. This edited book, contributed by internationally respected researchers and industry practitioners, describes the current technological status of radio frequency design, data conversion, reconfigurable signal processing hardware, and software issues at all levels of the protocol stack and network. The book provides a holistic treatment of SDR addressing the full breadth of relevant technologies - radio frequency design, signal processing and software - at all levels. As such it provides a solid grounding for a new generation of wireless engineers for whom radio design in future will assume dynamic flexibility as a given. In particular it explores * The unique demands of SDR upon the RF subsystem and their implications for front end design methodologies * The recent concepts of the 'digital front end' and 'parametrization' * The role and key influence of data conversion technologies and devices within software radio, essential to robust product design * The evolution of signal processing technologies, describing new architectural approaches * Requirements and options for software download * Advances in 'soft' protocols and 'on-the-fly' software reconfiguration * Management of terminal reconfiguration and its network implications * The concepts of the waveform description language The book also includes coverage of * Potential breakthrough technologies, such as superconducting RSFQ technology and the possible future role of MEMS in RF circuitry * Competing approaches, eg all-software radios implemented on commodity computing vs advanced processing architectures that dynamically optimise their configuration to match the algorithm requirements at a point in time The book opens with an introductory chapter by Stephen Blust, Chair of the ITU-R WP8F Committee and Chair of the SDR Forum presenting a framework for SDR, in terms of definitions, evolutionary perspectives, introductory timescales and regulation. Suitable for today's engineers, technical staff and researchers within the wireless industry, the book will also appeal to marketing and commercial managers who need to understand the basics and potential of the technology for future product development. Its balance of industrial and academic contributors also makes it suitable as a text for graduate and post-graduate courses aiming to prepare the next generation of wireless engineers.**

Antenna Fundamentals for Legacy Mobile Applications and Beyond

Springer **This book highlights technology trends and challenges that trace the evolution of antenna design, starting from 3rd generation phones and moving towards the latest release of LTE-A. The authors explore how the simple monopole and whip antenna from the GSM years have evolved towards what we have today, an antenna design that is compact, multi-band in nature and caters to multiple elements on the same patch to provide high throughput connectivity. The scope of the book targets a broad range of subjects, including the microstrip antenna, PIFA antenna, and the monopole antenna to be used for different applications over three different mobile generations. Beyond that, the authors take a step into the future and look at antenna requirements for 5G communications, which already has the 5G drive in place with prominent scenarios and use-cases emerging. They examine these, and put in place the challenges that lie ahead for antenna design, particularly in mm-Wave design. The book provides a reference for practicing engineers and under/post graduate students working in this field.**

Cryptographic Hardware and Embedded Systems - CHES 2009

11th International Workshop Lausanne, Switzerland, September 6-9, 2009 Proceedings

Springer **CHES 2009, the 11th workshop on Cryptographic Hardware and Embedded Systems, was held in Lausanne, Switzerland, September 6-9, 2009. The wo- shop was sponsored by the International Association for Cryptologic Research (IACR). The workshop attracted a record number of 148 submissions from 29 co- tries, of which the Program Committee selected 29 for publication in the wo- shop proceedings, resulting in an acceptance rate of 19.6%, the lowest in the history of CHES. The review process followed strict standards: each paper - ceived at least four reviews, and some asmanyaseightreviews.Membersofthe Program Committee were restricted to co-authoring at most two submissions, and their papers were evaluated by an extended number of reviewers. The ProgramCommittee included 53 members representing 20 countries and ?ve continents. These members were carefully selected to represent academia, industry, and government, as well as to include world-class experts in various research ?elds of interest to CHES. The Program Committee was supported by 148 external reviewers. The total number of people contributing to the - view process, including Program Committee members, external reviewers, and Program Co-chairs, exceeded 200. The papers collected in this volume represent cutting-edge worldwide - search in the rapidly growing and evolving area of cryptographic engineering.**

Recent Advances on Soft Computing and Data Mining

Proceedings of the Fourth International Conference on Soft Computing and Data Mining (SCDM 2020), Melaka, Malaysia, January 22–23, 2020

Springer Nature **This book provides an introduction to data science and offers a practical overview of the concepts and techniques that readers need to get the most out of their large-scale data mining projects and research studies. It discusses data-analytical thinking, which is essential to extract useful knowledge and obtain commercial value from the data. Also known as data-driven science, soft computing and data mining disciplines cover a broad interdisciplinary range of scientific methods and processes. The book provides readers with sufficient knowledge to tackle a wide range of issues in complex systems, bringing together the scopes that integrate soft computing and data mining in various combinations of applications and practices, since to thrive in these data-driven ecosystems, researchers, data analysts and practitioners must understand the design choice and options of these approaches. This book helps readers to solve complex benchmark problems and to better appreciate the concepts, tools and techniques used.**

NUREG/CR.

Fingerprint Development Techniques

Theory and Application

John Wiley & Sons **A comprehensive review of the latest fingerprint development and imaging techniques With contributions from leading experts in the field, Fingerprint Development Techniques offers a comprehensive review of the key techniques used in the development and imaging of fingerprints. It includes a review of the properties of fingerprints, the surfaces that fingerprints are deposited on, and the interactions that can occur between fingerprints, surfaces and environments. Comprehensive in scope, the text explores the history of each process, the theory behind the way fingerprints are either developed or imaged, and information about the role of each of the chemical constituents in recommended formulations. The authors explain the methodology employed for carrying out comparisons of effectiveness of various development techniques that clearly demonstrate how to select the most effective approaches. The text also explores how techniques can be used in sequence and with techniques for recovering other forms of forensic evidence. In addition, the book offers a guide for the selection of fingerprint development techniques and includes information on the influence of surface contamination and exposure conditions. This important resource: Provides clear methodologies for conducting comparisons of fingerprint development technique effectiveness Contains in-depth assessment of fingerprint constituents and how they are utilized by development and imaging processes Includes background information on fingerprint chemistry Offers a comprehensive**

history, the theory, and the applications for a broader range of processes, including the roles of each constituent in reagent formulations Fingerprint Development Techniques offers a comprehensive guide to fingerprint development and imaging, building on much of the previously unpublished research of the Home Office Centre for Applied Science and Technology.

Expert Clouds and Applications

Proceedings of ICOECA 2021

Springer Nature **This book features original papers from International Conference on Expert Clouds and Applications (ICOECA 2021), organized by GITAM School of Technology, Bangalore, India during February 18–19, 2021. It covers new research insights on artificial intelligence, big data, cloud computing, sustainability, and knowledge-based expert systems. The book discusses innovative research from all aspects including theoretical, practical, and experimental domains that pertain to the expert systems, sustainable clouds, and artificial intelligence technologies.**

ICT Systems Security and Privacy Protection

30th IFIP TC 11 International Conference, SEC 2015, Hamburg, Germany, May 26-28, 2015, Proceedings

This book constitutes the refereed proceedings of the 30th IFIP TC 11 International Information Security and Privacy Conference, SEC 2015, held in Hamburg, Germany, in May 2015. The 42 revised full papers presented were carefully reviewed and selected from 212 submissions. The papers are organized in topical sections on privacy, web security, access control, trust and identity management, network security, security management and human aspects of security, software security, applied cryptography, mobile and cloud services security, and cyber-physical systems and critical infrastructures security.

Smart Monitoring and Control in the Future Internet of Things

The Internet of Things (IoT) and related technologies have the promise of realizing pervasive and smart applications which, in turn, have the potential of improving the quality of life of people living in a connected world. According to the IoT vision, all things can cooperate amongst themselves and be managed from anywhere via the Internet, allowing tight integration between the physical and cyber worlds and thus improving efficiency, promoting usability, and opening up new application opportunities. Nowadays, IoT technologies have successfully been exploited in several domains, providing both social and economic benefits. The realization of the full potential of the next generation of the Internet of Things still needs further research efforts concerning, for instance, the identification of new architectures, methodologies, and infrastructures dealing with distributed and decentralized IoT systems; the integration of IoT with cognitive and social capabilities; the enhancement of the sensing-analysis-control cycle; the integration of consciousness and awareness in IoT environments; and the design of new algorithms and techniques for managing IoT big data. This Special Issue is devoted to advancements in technologies, methodologies, and applications for IoT, together with emerging standards and research topics which would lead to realization of the future Internet of Things.

Advances in Emerging Trends and Technologies

Volume 1

Springer Nature **This book constitutes the proceedings of the 1st International Conference on Advances in Emerging Trends and Technologies (ICAETT 2019), held in Quito, Ecuador, on 29–31 May 2019, jointly organized by Universidad Tecnológica Israel, Universidad Técnica del Norte, and Instituto Tecnológico Superior Rumiñahui, and supported by SNOTRA. ICAETT 2019 brought together top researchers and practitioners working in different domains of computer science to share their expertise and to discuss future developments and potential collaborations. Presenting high-quality, peer-reviewed papers, the book discusses the following topics: Technology Trends Electronics Intelligent Systems Machine Vision Communication Security e-Learning e-Business e-Government and e-Participation**

Proceedings of the 8th International Conference on

Sciences of Electronics, Technologies of Information and Telecommunications (SETIT18), Vol. 1

This two-volume book presents an unusually diverse selection of research papers, covering all major topics in the fields of information and communication technologies and related sciences. It provides a wide-angle snapshot of current themes in information and power engineering, pursuing a cross-disciplinary approach to do so. The book gathers revised contributions that were presented at the 2018 International Conference: Sciences of Electronics, Technologies of Information and Telecommunication (SETIT'18), held on 20-22 December 2018 in Hammamet, Tunisia. This eighth installment of the event attracted a wealth of submissions, and the papers presented here were selected by a committee of experts and underwent additional, painstaking revision. Topics covered include: · Information Processing · Human-Machine Interaction · Computer Science · Telecommunications and Networks · Signal Processing · Electronics · Image and Video This broad-scoped approach is becoming increasingly popular in scientific publishing. Its aim is to encourage scholars and professionals to overcome disciplinary barriers, as demanded by current trends in the industry and in the consumer market, which are rapidly leading toward a convergence of data-driven applications, computation, telecommunication, and energy awareness. Given its coverage, the book will benefit graduate students, researchers and practitioners who need to keep up with the latest technological advances.

Soft Computing: Theories and Applications

Proceedings of SoCTA 2018

Springer Nature **The book focuses on soft computing and its applications to solve real-world problems in different domains, ranging from medicine and health care, to supply chain management, image processing and cryptanalysis. It includes high-quality papers presented at the International Conference on Soft Computing: Theories and Applications (SoCTA 2018), organized by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab, India. Offering significant insights into soft computing for teachers and researchers alike, the book inspires more researchers to work in the field of soft computing.**

Internet of Things and Big Data Analytics Toward Next-Generation Intelligence

Springer **This book highlights state-of-the-art research on big data and the Internet of Things (IoT), along with related areas to ensure efficient and Internet-compatible IoT systems. It not only discusses big data security and privacy challenges, but also energy-efficient approaches to improving virtual machine placement in cloud computing environments. Big data and the Internet of Things (IoT) are ultimately two sides of the same coin, yet extracting, analyzing and managing IoT data poses a serious challenge. Accordingly, proper analytics infrastructures/platforms should be used to analyze IoT data. Information technology (IT) allows people to upload, retrieve, store and collect information, which ultimately forms big data. The use of big data analytics has grown tremendously in just the past few years. At the same time, the IoT has entered the public consciousness, sparking people's imaginations as to what a fully connected world can offer. Further, the book discusses the analysis of real-time big data to derive actionable intelligence in enterprise applications in several domains, such as in industry and agriculture. It explores possible automated solutions in daily life, including structures for smart cities and automated home systems based on IoT technology, as well as health care systems that manage large amounts of data (big data) to improve clinical decisions. The book addresses the security and privacy of the IoT and big data technologies, while also revealing the impact of IoT technologies on several scenarios in smart cities design. Intended as a comprehensive introduction, it offers in-depth analysis and provides scientists, engineers and professionals the latest techniques, frameworks and strategies used in IoT and big data technologies.**

Advanced Research on Computer Education, Simulation and Modeling

International Conference, CESM 2011, Wuhan, China, June 18-19, 2011. Proceedings, Part II

Springer **This two-volume set (CCIS 175 and CCIS 176) constitutes the refereed proceedings of the International Conference on Computer Education, Simulation and Modeling, CSEM 2011, held in Wuhan, China, in June 2011. The 148 revised full papers presented in both volumes were carefully reviewed and selected from a large number of submissions. The papers cover issues such as multimedia and its application, robotization and automation,**

mechatronics, computer education, modern education research, control systems, data mining, knowledge management, image processing, communication software, database technology, artificial intelligence, computational intelligence, simulation and modeling, agent based simulation, biomedical visualization, device simulation & modeling, object-oriented simulation, Web and security visualization, vision and visualization, coupling dynamic modeling theory, discretization method , and modeling method research.

Potato in progress

Science meets practice

Wageningen Academic Publishers **This book contains the proceedings of the Potato 2005 conference, held in Emmeloord, The Netherlands. This conference offered a platform to a diverse group of stakeholders in the potato industry to learn what science has to offer. At the same time it created an environment for scientists to learn what drives the industry in the rapidly changing world of the potato. The contributions in this book reflect the rapid developments both in the industry and in science. The nutritional aspects of the potato tuber are discussed as well as the volatile consumer moods in saturated or new markets. Latest developments in potato breeding and seed potato production are highlighted and these contributions underline how these potato sectors have been revolutionized. The present and future role of decision support systems in managing inputs of nitrogen and water and in managing pests (and thus in making potato production more sustainable) is described. Several innovations in technology development in potato production and storage are illustrated. Experts provide the latest news on crop protection, with a focus on developments in the control of the potato brown rot bacterium and late blight. Finally the trends in potato trade are described. This book shows that the potato crop is progressing globally - with increasing impact on food supply and added value - providing many opportunities for science to meet practice.**

Fundamentals of Digital Manufacturing Science

Springer Science & Business Media **The manufacturing industry will reap significant benefits from encouraging the development of digital manufacturing science and technology. Digital Manufacturing Science uses theorems, illustrations and tables to introduce the definition, theory architecture, main content, and key technologies of digital manufacturing science. Readers will be able to develop an in-depth understanding of the emergence and the development, the theoretical background, and the techniques and methods of digital manufacturing science. Furthermore, they will also be able to use the basic theories and key technologies described in Digital Manufacturing Science to solve practical engineering problems in modern manufacturing processes. Digital Manufacturing Science is aimed at advanced undergraduate and postgraduate students, academic researchers and researchers in the manufacturing industry. It allows readers to integrate the theories and technologies described with their own research works, and to propose new ideas and new methods to improve the theory and application of digital manufacturing science.**

Solid-state NMR

Applications in Biomembrane Structure

The purpose of this book is to describe the methodology and applications of solid-state NMR spectroscopy to studies of membrane proteins, membrane-active peptides and model biological membranes. As well as structural studies, this book contains coverage of membrane interactions and molecular motions. Advances in biological solid-state NMR are very pertinent with high-field developments seeing applications in biological membranes and whole cells. Experts who are leaders in the development and application of biological solid-state NMR are chapter contributors. Part of Biophysical Society-IOP series.

New and Emerging Proteomic Techniques

Springer Science & Business Media **Leading researchers and innovators describe in step-by-step detail the latest techniques that promise to significantly impact the practice of proteomics, as well as its success in developing novel clinical agents. The methods span the entire spectrum of top-down and bottom-up approaches, including microarrays, gels, chromatography, and affinity separations, and address every aspect of the human proteome, both quantitatively and qualitatively. The techniques of protein detection utilized are diverse and range from fluorescence and resonance light scattering to surface plasmon resonance and mass spectrometry. The protocols follow the successful Methods in Molecular BiologyTM series format, each offering step-by-step laboratory instructions, an introduction outlining the principles behind the technique, lists of the necessary equipment and reagents, and tips on troubleshooting and avoiding known pitfalls.**

Molecular Detection of Foodborne Pathogens

CRC Press **While the vast majority of our food supplies are nutritious and safe, foodborne pathogen-related illness still affects millions of people each year. Large outbreaks of foodborne diseases- such as the recent salmonella outbreak linked to various peanut butter products- continue to be reported with alarming frequency.All-Encompassing Guide to Detecti**

Critical Infrastructure Protection VII

7th IFIP WG 11.10 International Conference, ICCIP 2013, Washington, DC, USA, March 18-20, 2013, Revised Selected Papers

Springer **The information infrastructure - comprising computers, embedded devices, networks and software systems - is vital to day-to-day operations in every sector: information and telecommunications, banking and finance, energy, chemicals and hazardous materials, agriculture, food, water, public health, emergency services, transportation, postal and shipping, government and defense. Global business and industry, governments, indeed society itself, cannot function effectively if major components of the critical information infrastructure are degraded, disabled or destroyed. Critical Infrastructure Protection VII describes original research results and innovative applications in the interdisciplinary field of critical infrastructure protection. Also, it highlights the importance of weaving science, technology and policy in crafting sophisticated, yet practical, solutions that will help secure information, computer and network assets in the various critical infrastructure sectors. Areas of coverage include: themes and issues; control systems security; infrastructure security; infrastructure modeling and simulation; and risk assessment. This book is the seventh volume in the annual series produced by the International Federation for Information Processing (IFIP) Working Group 11.10 on Critical Infrastructure Protection, an international community of scientists, engineers, practitioners and policy makers dedicated to advancing research, development and implementation efforts focused on infrastructure protection. The book contains a selection of fifteen edited papers from the Seventh Annual IFIP WG 11.10 International Conference on Critical Infrastructure Protection, held at George Washington University, Washington, DC, USA in the spring of 2013. Critical Infrastructure Protection VII is an important resource for researchers, faculty members and graduate students, as well as for policy makers, practitioners and other individuals with interests in homeland security. Jonathan Butts is an Assistant Professor of Computer Science at the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA. Sujeet Shenoi is the F.P. Walter Professor of Computer Science and a Professor of Chemical Engineering at the University of Tulsa, Tulsa, Oklahoma, USA.**

Handbook of Molecular Descriptors

John Wiley & Sons **Quantitative studies on structure-activity and structure-property relationships are powerful tools in directed drug research. In recent years, various strategies have been developed to characterize and classify structural patterns by means of molecular descriptors. It has become possible not only to assess diversities or similarities of structure databases, but molecular descriptors also facilitate the identification of potential bioactive molecules from the rapidly increasing number of compound libraries. They even allow for a controlled de-novo design of new lead structures. This is the most comprehensive collection of molecular descriptors and presents a detailed review from the origins of this research field up to present day. This practically oriented reference book gives a thorough overview of the different molecular descriptors representations and their corresponding molecular descriptors. All descriptors are listed with their definition, symbols and labels, formulas, some numerical examples, data and molecular graphs, while numerous figures and tables aid comprehension of the definitions. Cross-references throughout, a list of acronyms and notations allow easy access to the information needed to solve a specific research problem. Examples of descriptor calculations along with tables of descriptor values for a set of selected reference compounds and an up-to-date reference list add to the practical value of the book, making it an invaluable guide for all those dealing with bioactive molecules as well as for researchers.**

Solutions for Cyber-Physical Systems Ubiquity

IGI Global **Cyber-physical systems play a crucial role in connecting aspects of online life to physical life. By studying emerging trends in these systems, programming techniques can be optimized and strengthened to create a higher level of effectiveness. Solutions for Cyber-Physical Systems Ubiquity is a critical reference source that discusses the issues and challenges facing the implementation, usage, and challenges of cyber-physical systems. Highlighting relevant topics such as the Internet of Things, smart-card security, multi-core environments, and wireless sensor nodes, this scholarly publication is ideal for engineers, academicians, computer science students, and researchers that would like to stay abreast of current methodologies and trends involving cyber-physical system progression.**

Reinventing the Company for the Digital Age

The seventh edition of Spanish banking group BBVA's annual series is dedicated to unveiling the new digital business models for twenty-first century companies. Esteemed experts from BBVA, "The Economist," Harvard University, Columbia Business School, Geoffrey Moore Consulting and more, contribute texts in accessible language.

Mobile Unleashed

The Origin and Evolution of Arm Processors in Our Devices

Createspace Independent Publishing Platform **This is the origin story of technology super heroes: the creators and founders of ARM, the company that is responsible for the processors found inside 95% of the world's mobile devices today. This is also the evolution story of how three companies - Apple, Samsung, and Qualcomm - put ARM technology in the hands of billions of people through smartphones, tablets, music players, and more. It was anything but a straight line from idea to success for ARM. The story starts with the triumph of BBC Micro engineers Steve Furber and Sophie Wilson, who make the audacious decision to design their own microprocessor - and it works the first time. The question becomes, how to sell it? Part I follows ARM as its founders launch their own company, select a new leader, a new strategy, and find themselves partnered with Apple, TI, Nokia, and other companies just as digital technology starts to unleash mobile devices. ARM grows rapidly, even as other semiconductor firms struggle in the dot com meltdown, and establishes itself as a standard for embedded RISC processors. Apple aficionados will find the opening of Part II of interest the moment Steve Jobs returns and changes the direction toward fulfilling consumer dreams. Samsung devotees will see how that firm evolved from its earliest days in consumer electronics and semiconductors through a philosophical shift to innovation. Qualcomm followers will learn much of their history as it plays out from satellite communications to development of a mobile phone standard and emergence as a leading fabless semiconductor company. If ARM could be summarized in one word, it would be "collaboration." Throughout this story, from Foreword to Epilogue, efforts to develop an ecosystem are highlighted. Familiar names such as Google, Intel, Mediatek, Microsoft, Motorola, TSMC, and others are interwoven throughout. The evolution of ARM's first 25 years as a company wraps up with a shift to its next strategy: the Internet of Things, the ultimate connector for people and devices. Research for this story is extensive, simplifying a complex mobile industry timeline and uncovering critical points where ARM and other companies made fateful and sometimes surprising decisions. Rare photos, summary diagrams and tables, and unique perspectives from insiders add insight to this important telling of technology history.**

Quality Control of Herbal Medicines and Related Areas

BoD – Books on Demand **The authors of this thematic issue provide a comprehensive summary of most recent knowledge and references on quality control in wide fields. Quality control is essential for natural products like natural medicine and related food products. In this issue fifteen chapters have been included, discussing in detail various aspects of quality control. It will certainly prove useful not only for phytochemical researchers, but also many scientists working in numerous fields. Much effort has been invested by the contributors to share current information. Without their efforts and input 'Quality Control of Herbal Medicine and Related Areas' could not exist.**

Chemical Biology

Methods and Protocols

Humana Press **This volume seeks to enable the discovery of tools in chemical biology by providing readers with various techniques ranging from initial chemical genetic screening to target identification. To successfully highlight the essential components of the chemical biology tool discovery process, the book is organizes into four parts that focus on platforms for molecular discovery in in vitro cellular systems, in vivo chemical genetic screening protocols, and methods used to discover functional protein targets. Written in the highly successful Methods of Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Practical and informative, Chemical Biology: Methods and Protocols seeks to improve the success rate of the chemical biology field through the dissemination of detailed and experiential knowledge.**

Advances in Human Factors and Systems Interaction

Proceedings of the AHFE 2020 Virtual Conference on Human Factors and Systems Interaction, July 16-20, 2020, USA

Springer Nature **This book presents cutting-edge research on innovative system interfaces, highlighting both lifecycle development and human–technology interaction, especially in virtual, augmented and mixed reality systems. It describes advanced methodologies and tools for evaluating and improving interface usability, and discusses new models, case studies and good practices. The book addresses the human, hardware, and software factors in the process of developing interfaces for optimizing total system performance, while minimizing costs. It also highlights the forces currently shaping the nature of computing and systems, such as the importance of portability and technologies for reducing power requirements; the need for better assimilation of computation in the environment; and solutions to promote computer and system accessibility for people with special needs. Based on the AHFE 2020 Virtual Conference on Human Factors and Systems Interaction, held on July 16–20, 2020, the book offers a timely survey and a practice-oriented guide for systems interface users and developers alike.**

Smart Packaging Technologies for Fast Moving Consumer Goods

John Wiley & Sons **Smart Packaging Technologies for Fast Moving Consumer Goods approaches the subject of smart packaging from an innovative, thematic perspective: Part 1 looks at smart packaging technologies for food quality and safety Part 2 addresses smart packaging issues for the supply chain Part 3 focuses on smart packaging for brand protection and enhancement Part 4 centres on smart packaging for user convenience. Each chapter starts with a definition of the technology, and proceeds with an analysis of its workings and components before concluding with snapshots of potential applications of the technology. The Editors, brought together from academia and industry, provide readers with a cohesive account of the smart packaging phenomenon. Chapter authors are a mixture of industry professionals and academic researchers from the UK, USA, EU and Australasia.**

Documents

"the" Developer's Toolkit

The Illustrated Wavelet Transform Handbook

Introductory Theory and Applications in Science, Engineering, Medicine and Finance, Second Edition

CRC Press **This second edition of The Illustrated Wavelet Transform Handbook: Introductory Theory and Applications in Science, Engineering, Medicine and Finance has been fully updated and revised to reflect recent developments in the theory and practical applications of wavelet transform methods. The book is designed specifically for the applied reader in science, engineering, medicine and finance. Newcomers to the subject will find an accessible and clear account of the theory of continuous and discrete wavelet transforms, while readers already acquainted with wavelets can use the book to broaden their perspective. One of the many strengths of the book is its use of several hundred illustrations, some in colour, to convey key concepts and their varied practical uses. Chapters exploring these practical applications highlight both the similarities and differences in wavelet transform methods across different disciplines and also provide a comprehensive list of over 1000 references that will serve as a valuable resource for further study. Paul Addison is a Technical Fellow with Medtronic, a global medical technology company. Previously, he was co-founder and CEO of start-up company, CardioDigital Ltd (and later co-founded its US subsidiary, CardioDigital Inc) - a company concerned with the development of novel wavelet-based methods for biosignal analysis. He has a master's degree in engineering and a PhD in fluid mechanics, both from the University of Glasgow, Scotland (founded 1451). His former academic life as a tenured professor of fluids engineering included the output of a large number of technical papers, covering many aspects of engineering and bioengineering, and two textbooks: Fractals and Chaos: An Illustrated Course and the first edition of The Illustrated Wavelet Transform Handbook. At the time of publication, the author has over 100 issued US patents concerning a wide range of medical device technologies, many of these concerning the wavelet transform analysis of biosignals. He is both a Chartered Engineer and Chartered Physicist.**