This book addresses the emerging area of cloud computing, providing a comprehensive overview of the research areas, recent work and open research problems. The move to cloud computing is no longer merely a topic of discussion; it has become a core competency that every modern business needs to embrace and excel at. It has changed the way enterprises and Internet computing is viewed, and this success story is the result of the long-term efforts of computing research community around the globe. It is predicted that by 2026 more than two-thirds of all enterprises across the globe will be entirely run in cloud. These predictions have led to huge levels of funding for research and development in cloud computing and related technologies. Accordingly, universities across the globe have incorporated cloud computing and its related technologies in their curriculum, and information technology (IT) organizations are accelerating their skill-set evolution in order to be better prepared to manage emerging technologies and public expectations of the cloud, such as new services. A critical part of ensuring that systems are advancing alongside technology without complications is problem solving. Practical applications of problem-solving theories can model conflict and cooperation and aid in creating solutions to real-world problems. Soft-Computing-Based Nonlinear Control Systems Design is a critical scholarly publication that examines the practical applications of control theory and its applications in problem solving to fields including economics, information management, and financial modelling. Featuring a wide range of topics, such as fuzzy logic, nature-inspired algorithms, and cloud computing, this book is geared toward academicians, researchers, and students seeking relevant research on control theory and its practical applications. This book explores the significant role of granular computing in advancing machine learning towards in-depth processing of big data. It begins by introducing the main characteristics of big data, i.e., the five Vs—Volume, Velocity, Variety, Veracity and Variability. The book explores granular computing as a response to the fact that learning tasks have become increasingly more complex due to the vast and rapid increase in the size of data, and that traditional machine learning has proven too shallow to adequately deal with big data. Some popular types of traditional machine learning are presented in terms of their key features and limitations in the context of big data. Further, the book discusses why granular-computing-based machine learning is called for, and demonstrates how granular computing concepts can be used in different ways to advance machine learning for big data processing. Several case studies involving big data are presented by using biomedical data and sentiment data, in order to show the advances in big data processing through the shift from traditional machine learning to granular-computing-based machine learning. Finally, the book stresses the theoretical significance, practical importance, methodological impact and philosophical aspects of granular-computing-based machine learning, and suggests several further directions for advancing machine learning to fit the needs of modern industries. This book is aimed at PhD students, postdoctoral researchers and academics who are actively involved in fundamental research on machine learning or applied research on data mining and knowledge discovery, sentiment analysis, pattern recognition, image processing, computer vision andbig data analytics. It will also benefit a broader audience of researchers and practitioners who are actively engaged in the research and development of intelligent systems. This book is a compilation of research work in the interdisciplinary areas of electronics, communication, and computing. This book is specifically targeted at students, research scholars and academicians. The book covers the different approaches and techniques for specific applications, such as particle-swarm optimization, Otsu’s function and harmony search optimization algorithm, triple gate silicon on insulator (SOI)MOSFET, micro-Raman and Fourier Transform Infrared Spectroscopy (FTIR) analysis, high-k dielectric gate oxide, spectrum sensing in cognitive radio, microstrip antenna, Ground-penetrating radar (GPR) with conducting surfaces, and digital image forgery detection. The contents of the book will be useful to academic and professional researchers alike. This volume contains the technical papers presented in the workshops associated with the European Conference on Service-Oriented and Cloud Computing, ESOC 2016, held in Vienna, Austria, in September 2016: 4th International Workshop on Cloud for IoT, CLoT 2016, Second International Workshop on Cloud Adoption and Migration, CloudWays 2016, First International Workshop on Patterns and Pattern Languages for SOCC; Use and Discovery, PATTWORLD 2016, combined with the First International Workshop on Performance and Conformance of Workflow Engines, PEACE 2016, IFIP WG SOS Workshop 2016 Rethinking Services ReSerCH, ReSerCH 2016. Furthermore, there is a topical section presenting the results of the PhD Symposium. The abstracts of the presentations held at the European Projects Forum, EU Projects 2016, are included in the back-matter of the volume. The 15 full papers included in this volume were carefully reviewed and selected from 49 submissions. They focus on specific topics in service-oriented and cloud computing domains such as limits and/or advantages of existing cloud solutions, future internet technologies, efficient and adaptive deployment and management of service-based applications across multiple clouds, novel cloud service migration practices and solutions, digitization of enterprises in the cloud computing era, federated cloud networking services. Im Zeitalter des Internet of Things (IoT) erzeugen Edge-Geräte in jedem Sekundenbruchteil gigantische Datenmengen. Dabei besteht das Hauptziel dieser Netzerke darin, aus den gesammelten Daten sinnvolle Informationen abzuleiten. Gleichzeitig werden gewaltige Datenmengen in die Cloud übertragen, was extrem teuer und zeitaufwändig ist. Es ist somit notwendig, effiziente Mechanismen für die Verarbeitung dieser gewaltigen Datenmengen zu entwickeln, und dafür sind effiziente Datenverarbeitungstechniken erforderlich. Nachhaltige Paradigmen wie Cloud Computing und Fog Computing tragen zu einem geschickten Umgang mit Themen wie Leistung, Speicher- und Verarbeitungskapazitäten, Wartung, Sicherheit, Effizienz, Integration, Kosten, Energieverbrauch und Latenzziten bei. Allerdings werden ausgefeilte Analysetools benötigt, um die Anfragen in einer optimalen Zeit zu bearbeiten. Daher wird derzeit eifrig an der Entwicklung eines effektiven und effizienten Rahmens gearbeitet, um den größtmöglichen Nutzen zu erhalten. Bei der Verarbeitung der gewaltigen Datenmengen steht das maschinelle Lernen besonders hoch im Kurs und wird in zahlreichen Disziplinen angewandt, auch in den sozialen Medien. In Machine Learning Approach for Cloud Data Analytics in IoT werden sämtliche Aspekte des IoT, des Cloud Computing und der Datenanalyse ausführlich erläutert und aus verschiedenen Perspektiven betrachtet. Das Buch präsentiert den neuesten Stand der Forschung und besonderen Schwerpunkte. So erhalten die Leserinnen und Leser aktuelle Informationen und können das gesamte Spektrum der Anwendungen von IoT, Cloud Computing und Datenanalyse erfassen. International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA) is one of the flagship conferences on Bio-Computing, bringing together the world’s leading scientists from different areas of Natural Computing. Since 2006, the conferences have taken place in Malta (2006), Zhengzhou (2007), Bejing (2008), Aделaide (2009), Liverpool & Changsha (2010), Malaysia (2011) and India (2012). Following the successes of previous events, the 8th conference is organized and hosted by Anhui University of Science and Technology in China. This conference aims to provide a high-level international forum that researchers with different backgrounds and who are working in the related areas can use to present their latest results and exchange ideas. Additionally, the growing trend in Emergent Systems has resulted in the inclusion of two other closely related fields in the BIC-TA 2013 event, namely Complex Systems and Computational Neuroscience. These proceedings are intended for researchers in the fields of Membrane Computing, Evolutionary Computing and Genetical Algorithms, DNA and Molecular Computing, Biological Computing, Swarm Intelligence, Autonomy-Oriented Computing, Cellular and Molecular Automata, Complex Systems, etc. Professor Zhixiang Yin is the Dean of the School of Science, Anhui University of Science & Technology, China. Professor Linqiang Pan is the head of the research group of Natural Computing at Huazhong University of Science and Technology, Wuhan, China. Professor Xiaowen Fang also works at the Anhui University of Science & Technology. Distributed systems intertwine with our everyday lives. The benefits and current shortcomings of the underpinning technologies are
experienced by a wide range of people and their smart devices. With the rise of large-scale IoT and similar distributed systems, cloud bursting technologies, and partial outsourcing solutions, private entities are encouraged to increase their efficiency and offer unparalleled availability and reliability to their users. The Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing is a vital reference source that provides valuable insight into current and emergent research occurring within the field of distributed computing. It also presents architectures and service frameworks to achieve highly integrated distributed systems and solutions to integration and efficient management challenges faced by current and future distributed systems. Highlighting a range of topics such as data sharing, wireless sensor networks, and scalability, this multi-volume book is designed for system administrators, integrators, designers, developers, researchers, academicians, and students.

Summarizes the current state and upcoming trends within the area of fog computing Written by some of the leading experts in the field, Fog Computing: Theory and Practice focuses on the technological aspects of employing fog computing in various application domains, such as smart healthcare, industrial process control and improvement, smart cities, and virtual learning environments. In addition, the Machine-to-Machine (M2M) communication methods for fog computing environments are covered in depth. Presented in two parts—Fog Computing Systems and Architectures, and Fog Computing Techniques and Application—this book covers such important topics as energy efficiency and Quality of Service (QoS) issues, reliability and fault tolerance, load balancing, and scheduling in fog computing systems. It also devotes special attention to emerging trends and the industry needs associated with utilizing the mobile edge computing, Internet of Things (IoT), resource and pricing estimation, and virtualization in the fog environments. Includes chapters on deep learning, mobile edge computing, smart grid, and intelligent transportation systems beyond the theoretical and foundational concepts. Explores real-time traffic surveillance from video streams and interoperability of fog computing architectures. Presents the latest research on data quality in the IoT, privacy, security, and trust issues in fog computing. Fog Computing: Theory and Practice provides a platform for researchers, practitioners, and graduate students from computer science, computer engineering, and various other disciplines to gain a deep understanding of fog computing.

All over the world, vast research is in progress on the domain of Industry 4.0 and related techniques. Industry 4.0 is expected to have a very high impact on labor markets, global value chains, education, health, environment, and many social economic aspects. Industry 4.0 Interoperability, Analytics, Security, and Case Studies provides a deeper understanding of the drivers and enablers of Industry 4.0. It includes real case studies of various applications related to different fields, such as cyber physical systems (CPS), Internet of Things (IoT), cloud computing, machine learning, virtualization, decentralization, blockchain, fog computing, and many other related areas. Also discussed are interoperability, design, and implementation challenges. Researchers, academicians, and those working in industry around the globe will find this book of interest. FEATURES Provides an understanding of the drivers and enablers of Industry 4.0. Includes real case studies of various applications for different fields. Discusses technologies such as cyber physical systems (CPS), Internet of Things (IoT), cloud computing, machine learning, virtualization, decentralization, blockchain, fog computing, and many other related areas. Covers design, implementation challenges, and interoperability. Offers detailed knowledge on Industry 4.0 and its underlying technologies, research challenges, solutions, and case studies.

A practical guide to the design, implementation, evaluation, and deployment of emerging technologies for intelligent IoT applications. With the rapid development in artificially intelligent and hybrid technologies, IoT, edge, fog-driven, and pervasive computing techniques are becoming important parts of our daily lives. This book focuses on recent advances, roles, and benefits of these technologies, describing the latest intelligent systems from a practical point of view. Fog, Edge, and Pervasive Computing in Intelligent IoT Driven Applications is also valuable for engineers and professionals trying to solve practical, economic, or technical problems. With a uniquely practical approach spanning multiple fields of interest, contributors cover theory, applications, and design methodologies for intelligent systems. These technologies are rapidly transforming engineering, industry, and agriculture by enabling real-time processing of data via computational, resource-oriented metaheuristics and machine learning algorithms. As edge/fog computing and associated technologies are implemented far and wide, we are now able to solve previously intractable problems. With chapters contributed by experts in the field, this book: Describes Machine Learning frameworks and algorithms for edge, fog, and pervasive computing. Considers probabilistic storage systems and proven optimization techniques for intelligent IoT. Covers 5G edge network slicing and virtual network systems that utilize new networking capacity. Explores resource provisioning and bandwidth allocation for edge, fog, and pervasive mobile applications. Presents emerging applications of intelligent IoT, including smart farming, factory automation, marketing automation, medical diagnosis, and more. Researchers, graduate students, and practitioners working in the intelligent systems domain will appreciate this book's practical orientation and comprehensive coverage. Intelligent IoT is revolutionizing every industry and field today, and Fog, Edge, and Pervasive Computing in Intelligent IoT Driven Applications provides the background, orientation, and inspiration needed to begin. This SpringerBrief presents adaptive resource allocation schemes for secondary users for dynamic spectrum access (DSA) in cognitive radio networks (CRNs) by considering Quality-of-Service requirements, admission control, power/rate control, interference constraints, and the impact of spectrum sensing or primary user interruptions. It presents the challenges, motivations, and applications of the different schemes. The authors discuss cloud-assisted geolocation-aware adaptive resource allocation in CRNs by outsourcing computationally intensive processing to the cloud. Game theoretic approaches are presented to solve resource allocation problems in CRNs. Numerical results are presented to evaluate the performance of the proposed methods. Adaptive Resource Allocation in Cognitive Radio Networks is designed for professionals and researchers working in the area of wireless networks. Advanced-level students in electrical engineering and computer science, especially those focused on wireless networks, will find this information helpful.

This volume fills a research gap between the rapid development of High Performance Computing (HPC) approaches and their geospatial applications. With a focus on geospatial applications, the book discusses in detail how researchers apply HPC to tackle their geospatial problems. Based on this focus, the book identifies the opportunities and challenges revolving around geospatial applications of HPC. Readers are introduced to the fundamentals of HPC, and will learn how HPC methods are applied in various specific areas of geospatial study. The book begins by discussing theoretical aspects and methodological uses of HPC within a geospatial context, including parallel algorithms, geospatial data handling, spatial analysis and modeling, and cartography and geovisualization. Then, specific domain applications of HPC are addressed in the contexts of earth science, land use and land
cover change, urban studies, transportation studies, and social science. The book will be of interest to scientists and engineers who are interested in applying cutting-edge HPC technologies in their respective fields, as well as students and faculty engaged in geography, environmental science, social science, and computer science.

This book gathers selected high-quality research papers presented at International Conference on Mobile Computing and Sustainable Informatics (ICMCSI 2021) organized by Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal, during 29–30 January 2021. The book discusses recent developments in mobile communication technologies ranging from mobile edge computing devices, to personalized, embedded and sustainable applications. The book covers vital topics like mobile networks, computing models, algorithms, sustainable models and advanced informatics that supports the symbiosis of mobile computing and sustainable informatics.

Today's advancements in technology have brought about a new era of speed and simplicity for consumers and businesses. Due to these new benefits, the possibilities of universal connectivity, storage and computation are made tangible, thus leading the way to new Internet-of Things solutions. Resource Management and Efficiency in Cloud Computing Environments is an authoritative reference source for the latest scholarly research on the emerging trends of cloud computing and reveals the benefits cloud paths provide to consumers. Featuring coverage across a range of relevant perspectives and topics, such as big data, cloud security, and utility computing, this publication is an essential source for researchers, students and professionals seeking current research on the organization and productivity of cloud computing environments.

This two-volume set LNICST 301 - 302 constitutes the post-conference proceedings of the Third EAI International Conference on Advanced Hybrid Information Processing, ADHIP 2019, held in Nanjing, China, in September 2019. The 101 papers presented were selected from 237 submissions and focus on hybrid big data processing. Since information processing has acted as an important research domain in science and technology today, it is now to develop deeper and wider use of hybrid information processing, especially information processing for big data. There are more remaining issues waiting for solving, such as classification and systemization of big data, objective tracking and behavior understanding in big multimedia data, encoding and compression of big data.

This six volume set LNCS 11063 – 11068 constitutes the thoroughly refereed conference proceedings of the 4th International Conference on Cloud Computing and Security, ICCCS 2018, held in Haikou, China, in June 2018. The 386 full papers of these six volumes were carefully reviewed and selected from 1743 submissions. The papers cover ideas and achievements in the theory and practice of all areas of inventive systems which includes control, artificial intelligence, automation systems, computing systems, electrical and informative systems. The six volumes are arranged according to the subject areas as follows: cloud computing, cloud security, encryption, information hiding, IoT security, multimedia forensics.

This book includes high-quality papers presented at the International Conference on Data Science and Management (ICDSM 2019), organised by the Gandhi Institute for Education and Technology, Bhubaneswar, from 22 to 23 February 2019. It features research in which data science is used to facilitate the decision-making process in various application areas, and also covers a wide range of learning methods and their applications in a number of learning problems. The empirical studies, theoretical analyses and comparisons to psychological phenomena described contribute to the development of products to meet market demands.

The book features original papers from the 2nd International Conference on Smart IoT Systems: Innovations and Computing (SSIC 2019), presenting scientific work related to smart solution concepts. It discusses computational collective intelligence, which includes interactions between smart devices, smart environments and smart interactions, as well as information technology support for such areas. It also describes how to successfully approach various government organizations for funding for business and the humanitarian technology development projects. Thanks to the high-quality content and the broad range of the topics covered, the book appeals to researchers pursuing advanced studies.

In today's market, emerging technologies are continually assisting in common workplace practices as companies and organizations search for innovative ways to solve modern issues that arise. Prevalent applications including internet of things, big data, and cloud computing all have noteworthy benefits, but issues remain when separately integrating them into the professional practices. Significant research is needed on converging these systems and leveraging each of their advantages in order to find solutions to real-time problems that still exist. Challenges and Opportunities for the Convergence of IoT, Big Data, and Cloud Computing is a pivotal reference source that provides vital research on the relation between these technologies and the impact they collectively have in solving real-world challenges. While highlighting topics such as cloud-based analytics, intelligent algorithms, and information security, this publication explores current issues that remain when attempting to implement these systems as well as the specific applications IoT, big data, and cloud computing have in various professional sectors. This book is ideally designed for academicians, researchers, developers, computer scientists, IT professionals, practitioners, scholars, students, and engineers seeking research on the integration of emerging technologies to solve modern societal issues.

Advances in Computing, Communication, Automation and Biomedical Technology aims to bring together leading academic, scientists, researchers, industry representatives, postdoctoral fellows and research scholars around the world to share their knowledge and research expertise, to advances in the areas of Computing, Communication, Electrical, Civil, Mechanical and Biomedical Systems as well as to create a prospective collaboration and networking on various areas. It also provides a premier interdisciplinary platform for researchers, practitioners, and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered, and solutions adopted in the fields of innovation.

This book constitutes the thoroughly refereed post conference proceedings of the 4th International Conference on Cloud Computing, Cloud Comp 2013, held in Wuhan, China, in October 2013. The 28 revised full papers were carefully
reviewed and selected from numerous submissions and cover topics such as mobile cloud computing, services, applications, IoT on cloud, architectures and big data, cloud-assisted pervasive computing and services, management and virtualization for cloud, cloud security.

This book aims to provide an international forum for scholarly researchers, practitioners and academic communities to explore the role of information and communication technologies and its applications in technical and scholarly development. The conference attracted a total of 464 submissions, of which 152 submissions (including 4 poster papers) have been selected after a double-blind review process. Academic pioneering researchers, scientists, industrial engineers and students will find this series useful to gain insight into the current research and next-generation information science and communication technologies. This book discusses the aspects of communication, data science, ambient intelligence, networking, computing, security and Internet of things, from classical to intelligent scope. The authors hope that readers find the volume interesting and valuable; it gathers chapters addressing state-of-the-art intelligent methods and techniques for solving real-world problems along with a vision of the future research.

This book constitutes the refereed proceedings of the Second International Conference on Cloud Computing and Big Data, CloudCom-Asia 2015, held in Huangshan, China, in June 2015. The 29 full papers and two keynote speeches were carefully reviewed and selected from 106 submissions. The papers are organized in topical sections on cloud architecture; applications; big data and social network; security and privacy.

The book aims to integrate the aspects of IoT, Cloud computing and data analytics from diversified perspectives. The book also plans to discuss the recent research trends and advanced topics in the field which will be of interest to academicians and researchers working in this area. Thus, the book intends to help its readers to understand and explore the spectrum of applications of IoT, cloud computing and data analytics. Here, it is also worth mentioning that the book is believed to draw attention on the applications of said technology in various disciplines in order to obtain enhanced understanding of the readers. Also, this book focuses on the researches and challenges in the domain of IoT, Cloud computing and Data analytics from perspectives of various stakeholders.

Swarm Intelligence in Cloud Computing is an invaluable treatise for researchers involved in delivering intelligent optimized solutions for reliable deployment, infrastructural stability, and security issues of cloud-based resources. Starting with a bird’s eye view on the prevalent state-of-art techniques, this book enriches the readers with the knowledge of evolving swarm intelligent optimized techniques for addressing different cloud computing issues including task scheduling, virtual machine allocation, load balancing and optimization, deadline handling, power-aware profiling, fault resilience, cost-effective design, and energy efficiency. The book offers comprehensive coverage of the most essential topics, including: Role of swarm intelligence on cloud computing services Cloud resource sharing strategies Cloud service provider selection Dynamic task and resource scheduling Data center resource management. Indrajit Pan is an Associate Professor in Information Technology of RCC Institute of Information Technology, India. He received his PhD from Indian Institute of Engineering Science and Technology, Shibpur, India. With an academic experience of 14 years, he has published around 40 research publications in different international journals, edited books, and conference proceedings. Mohamed Abd Elaziz is a Lecturer in the Mathematical Department of Zagazig University, Egypt. He received his PhD from the same university. He is the author of more than 100 articles. His research interests include machine learning, signal processing, image processing, cloud computing, and evolutionary algorithms. Siddhartha Bhattacharyya is a Professor in Computer Science and Engineering of Christ University, Bangalore. He received his PhD from Jadavpur University, India. He has published more than 230 research publications in international journals and conference proceedings in his 20 years of academic experience.

This book reports on the latest advances on the theories, practices, standards and strategies that are related to the modern technology paradigms, the Mobile Cloud computing (MCC) and Big Data, as the pillars and their association with the emerging 5G mobile networks. The book includes 15 rigorously refereed chapters written by leading international researchers, providing the readers with technical and scientific information about various aspects of Big Data and Mobile Cloud Computing, from basic concepts to advanced findings, reporting the state-of-the-art on Big Data management. It demonstrates and discusses methods and practices to improve multi-source Big Data manipulation techniques, as well as the integration of resources availability through the 3As (Anywhere, Anything, Anytime) paradigm, using the 5G access technologies.

This volume contains the technical papers presented in the four high-quality workshops associated with the European Conference on Service-Oriented and Cloud Computing, ESOC 2014, held in Manchester, UK, in September 2014: 4th International Workshop on Adaptive Services for the Future Internet, WA54FI 2014, 2nd International Workshop on Cloud for IoT, CLIoT 2014, 2nd International Workshop on Cloud Service Brokerage, CSB 2014, and Seamless Adaptive Multi-cloud Management of Service-based Applications, SeaCloudS Workshop. The 19 revised full papers and 3 short papers were carefully reviewed and selected from 39 submissions. They focus on specific topics in service-oriented and cloud computing domains as cloud computing, service buses, Web services, service-oriented architectures, event-driven architectures, enterprise architectures, business process management, software selection and adaptation.

ICT technologies have contributed to the advances in wireless systems, which provide seamless connectivity for worldwide communication. The growth of interconnected devices and the need to store, manage, and process the data from them has led to increased research on the intersection of the internet of things and cloud computing. The Handbook of Research on the IoT, Cloud Computing, and Wireless Network Optimization is a pivotal reference source that provides the latest research findings and solutions for the design and augmentation of wireless systems and cloud computing. The content within this publication examines data mining, machine learning, and software engineering, and is designed for IT specialists, software engineers, researchers, academicians, industry professionals, and students.

Optimization of Manufacturing Systems Using the Internet of Things extends the IoT (Internet of Things) into the manufacturing field to develop an IoMT (Internet of Manufacturing Things) architecture with real-time traceability, visibility, and interoperability in production planning, execution, and control. This book is essential reading for anyone interested in the optimization and control of an intelligent manufacturing system. As modern manufacturing shop-floors can create bottlenecks in the capturing and collection of real-time field information, and because paper-based manual systems are time-consuming and prone to errors, this book helps
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readers understand how to alleviate these issues, assisting them in their decision-making on shop-floors. Includes case studies in implementing IoTs for data acquisition, monitoring, and assembly in manufacturing. Helps manufacturers to tackle the growing complexities and uncertainties of manufacturing systems in globalized business environments. Acts as an introduction to using IoT for readers across industrial and manufacturing engineering.

This book constitutes the thoroughly refereed proceedings of the 12th International Conference on Collaborative Computing: Networking, Applications, and Worksharing, CollaborateCom 2016, held in Beijing, China, in November 2016. The 86 papers presented were carefully reviewed and selected from 116 submissions and focus on topics such as: participatory sensing, crowdsourcing, and citizen science; architectures, protocols, and enabling technologies for collaborative computing networks and systems; autonomic computing and quality of services in collaborative networks, systems, and applications; collaboration in pervasive and cloud computing environments; collaboration in data-intensive scientific discovery; collaboration in social media; big data and spatio-temporal data in collaborative environments/systems; collaboration techniques in data-intensive computing and cloud computing.

This book constitutes the refereed proceedings of the 5th International Conference on Convergence and Hybrid Information Technology, ICHIT 2011, held in Daejeon, Korea, in September 2011. The 85 revised full papers presented were carefully reviewed and selected from 144 submissions. The papers are organized in topical sections on communications and networking; motion, video, image processing; security systems; cloud, RFID and robotics; industrial application of software systems; hardware and software engineering; healthcare, EEG and e-learning; HCI and data mining; software system and its applications.

This volume contains the technical papers presented in the seven high-quality workshops associated with the European Conference on Service-Oriented and Cloud Computing, ESOC 2015, held in Taormina, Italy, in September 2015: Third International Workshop on Cloud for IoT (CLiO 2015), 5th International Workshop on Adaptive Services for the Future Internet (WAS4FI 2015), Second Workshop on Seamless Adaptive Multi-cloud Management of Service-Based Applications (SeaClouds 2015), First International Workshop on Cloud Adoption and Migration (CloudWay 2015), First International Workshop on Digital Enterprise Architecture and Engineering (IDEA 2015), First Workshop on Federated Cloud Networking (FedCloudNet 2015). Abstracts of the presentations held at the European Projects Forum (EU Projects 2015) are included in the back matter of this volume. The 25 full papers and 6 short papers were carefully reviewed and selected from 48 submissions. They focus on specific topics in service-oriented and cloud computing domains such as limits and/or advantages of existing cloud solutions, Future Internet technologies, efficient and adaptive deployment and management of service-based applications across multiple clouds, novel cloud service migration practices and solutions, digitization of enterprises in the cloud computing era, federated cloud networking services.

This book contains the latest research work presented at the International Conference on Computing and Communication Systems (I3CS 2020) held at North-Eastern Hill University (NEHU), Shillong, India. The book presents original research results, new ideas and practical development experiences which concentrate on both theory and practices. It includes papers from all areas of information technology, computer science, electronics and communication engineering written by researchers, scientists, engineers and scholar students and experts from India and abroad.

This proceedings set contains selected Computer, Information and Education Technology related papers from the 2015 International Conference on Computer, Intelligent Computing and Education Technology (CICET 2015), to be held April 11-12, 2015 in Guilin, P.R. China. The proceedings aims to provide a platform for researchers, engineers and academicians. The Internet of Things (IoT) has made revolutionary advances in the utility grid as we know it. Among these advances, intelligent medical services are gaining much interest. The use of Artificial Intelligence (AI) is increasing day after day in fighting one of the most significant virusses, COVID-19. The purpose of this book is to present the detailed recent exploration of AI and IoT in the COVID-19 pandemic and similar applications. The integrated AI and IoT paradigm is widely used in most medical applications, as well as in sectors that deal with transacting data every day. This book can be used by computer science undergraduate and postgraduate students; researchers and practitioners; and city administrators, policy makers, and government regulators. It presents a smart and up-to-date model for COVID-19 and similar applications. Novel architectural and medical use cases in the smart city project are the core aspects of this book. The wide variety of topics it presents offers readers multiple perspectives on a variety of disciplines. Prof. Dr. Fadi Al-Turman received his PhD in computer science from Queen’s University, Kingston, Ontario, Canada, in 2011. He is a full professor and research center director at Near East University, Nicosia, Cyprus.

This book presents the proceedings of the International Conference SDOT which was organized at the University in Žilina, Faculty of Management Sciences and Informatics, Slovak Republic in November 19, 2015. The conference was truly international both in terms of the amount of foreign contributions and in terms of composition of steering and scientific committees. The book and the conference serves as a platform of professional exchange of knowledge and experience for the latest trends in software development and object-oriented technologies (theory and practice). This proceedings present information on the latest developments and mediate the exchange of experience between practitioners and academia.

CLOUD AND IOT-BASED VEHICULAR AD HOC NETWORKS This book details the architecture behind smart cars being fitted and connected with vehicular cloud computing, IoT and VANET as part of the intelligent transport system (ITS). As technology continues to weave itself more tightly into everyday life, socioeconomic development has become intricately tied to ever-evolving innovations. An example of this is the technology being developed to address the massive increase in the number of vehicles on the road, which has resulted in more traffic congestion and road accidents. This challenge is being addressed by developing new technologies to optimize traffic management operations. This book describes the state-of-the-art of the recent developments of Internet of Things (IoT) and cloud computing-based concepts that have been introduced to improve Vehicular Ad-Hoc Networks (VANET) with advanced cellular networks such as 5G networks and vehicular cloud concepts. 5G cellular networks provide consistent, faster and more reliable connections.
within the vehicular mobile nodes. By 2030, 5G networks will deliver the virtual reality content in VANET which will support vehicle navigation with real time communications capabilities, improving road safety and enhanced passenger comfort. In particular, the reader will learn: A range of new concepts in VANETs, integration with cloud computing and IoT, emerging wireless networking and computing models New VANET architecture, technology gap, business opportunities, future applications, worldwide applicability, challenges and drawbacks Details of the significance of 5G Networks in VANET, vehicular cloud computing, edge (fog) computing based on VANET. Audience The book will be widely used by researchers, automotive industry engineers, technology developers, system architects, IT specialists, policymakers and students.

Recent technology trends involving the combination of mobile networks and cloud computing have offered new chances for mobile network providers to use specific carrier-cloud services. These advancements will enhance the utilization of the mobile cloud in industry and corporate settings. Mobile Networks and Cloud Computing Convergence for Progressive Services and Applications is a fundamental source for the advancement of knowledge, application, and practice in the interdisciplinary areas of mobile network and cloud computing. By addressing innovative concepts and critical issues, this book is essential for researchers, practitioners, and students interested in the emerging field of vehicular wireless networks.

Handbook of Research on the IoT, Cloud Computing, and Wireless Network OptimizationIGI Global

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