Practical Applications Of Intelligent Systems Proceedings Of The Eighth International Conference On Intelligent Systems And Knowledge Engineering In Intelligent Systems And Computing

PAAMS, the International Conference on Practical Applications of Agents and Multi-Agent Systems is an evolution of the International Workshop on Practical Applications of Agents and Multi-Agent Systems. PAAMS is an international yearly tribune to present, to discuss and to disseminate the latest developments and the most important outcomes related to real-world applications. It provides a unique opportunity to bring multi-disciplinary experts, academics and practitioners together to exchange their experience in the development of Agents and Multi-Agent Systems. This volume presents the papers that have been accepted for the 2014 special sessions: Agents Behaviours and Artificial Markets (ABAM), Agents and Mobile Devices (AM), Bio-Inspired and Multi-Agents Systems: Applications to Languages (Bio MAS), Multi-Agent Systems and Ambient Intelligence (MASMAI), Self-Explaining Agents (SEA), Web Mining and Recommender systems (Web MiRes) and Intelligent Educational Systems (SSIES).

Providing a thorough introduction to the field of soft computing techniques, Intelligent Systems: Modeling, Optimization, and Control covers every major technique in artificial intelligence in a clear and practical style. This book highlights current research and applications, addresses issues encountered in the development of applied systems, and describes a wide range of intelligent systems techniques, including neural networks, fuzzy logic, evolutionary strategy, and genetic algorithms. The book demonstrates concepts through simulation examples and practical experimental results. Case studies are also presented from each field to facilitate understanding.

With the recent and enormous increase in the amount of available data sets of all kinds, applying effective and efficient techniques for analyzing and extracting information from that data has become a crucial task. Intelligent Data Analysis for Real-Life Applications: Theory and Practice investigates the application of Intelligent Data Analysis (IDA) to these data sets through the design and development of algorithms and techniques to extract knowledge from databases. This pivotal reference explores practical applications of IDA, and it is essential for academic and research libraries as well as students, researchers, and educators in data analysis, application development, and database management.

Build your own intelligent agent system... Intelligent agent technology is a tool of modern computer science that can be used to engineer complex computer programmes that behave rationally in dynamic and changing environments. Applications range from small programmes that intelligently search the Web buying and selling goods via electronic commerce, to autonomous space probes. This powerful technology is not widely used, however, as developing intelligent agent software requires high levels of training and skill. The authors of this book have developed and tested a methodology and tools for developing intelligent agent systems. With this methodology (Prometheus) developers can start agent-oriented designs and implementations easily from scratch saving valuable time and resources. Developing Intelligent Agent Systems not only

answers the questions "what are agents?" and "why are they useful?" but also the crucial question: "how do I design and build intelligent agent systems?" The book covers everything a practitioner needs to know to begin to effectively use this technology - including an introduction to the notion of agents, a description of the concepts involved, and a software engineering methodology. Read on for: a practical step-by-step introduction to designing and building intelligent agent systems. a full life-cycle methodology for developing intelligent agent systems covering specification, analysis, design and implementation of agents. PDT: Prometheus Design Tool – software support for the Prometheus design process. the example of an electronic bookstore to illustrate the design process throughout the book. Electronic resources including the Prometheus Design Tool (PDT), can be found at: http://www.cs.rmit.edu.au/agents/prometheus This book is aimed at industrial software developers, software engineers and at advanced undergraduate students. It assumes knowledge of basic software engineering but does not require knowledge of Artificial Intelligence or of mathematics. Familiarity with Java will help in reading the examples in chapter 10.

This book is the proceeding of the 1st International Conference on Distributed Sensing and Intelligent Systems (ICDSIS2020) which will be held in The National School of Applied Sciences of Agadir, Ibn Zohr University, Agadir, Morocco on February 01-03, 2020. ICDSIS2020 is co-organized by Computer Vision and Intelligent Systems Lab, University of North Texas, USA as a scientific collaboration event with The National School of Applied Sciences of Agadir, Ibn Zohr University. ICDSIS2020 aims to foster students, researchers, academicians and industry persons in the field of Computer and Information Science, Intelligent Systems, and Electronics and Communication Engineering in general. The volume collects contributions from leading experts around the globe with the latest insights on emerging topics, and includes reviews, surveys, and research chapters covering all aspects of distributed sensing and intelligent systems. The volume is divided into 5 key sections: Distributed Sensing Applications; Intelligent Systems; Advanced theories and algorithms in machine learning and data mining; Artificial intelligence and optimization, and application to Internet of Things (IoT); and Cybersecurity and Secure Distributed Systems. This conference proceeding is an academic book which can be read by students, analysts, policymakers, and regulators interested in Distributed Sensing, Smart Network approaches, Smart Cities, IoT Applications, and Intelligent Applications. It is written in plain and easy language, and describes new concepts when they appear first so that a reader without prior background of the field finds it readable. The book is primarily intended for research students in sensor networks and IoT applications (including intelligent information systems, and smart sensors applications), academics in higher education institutions including universities and vocational colleges, policy makers and legislators.

These proceedings present technical papers selected from the 2012 International Conference on Intelligent Systems and Knowledge Engineering (ISKE 2012), held on December 15-17 in Beijing. The aim of this conference is to bring together experts from different fields of expertise to discuss the state-of-the-art in Intelligent Systems and Knowledge Engineering, and to present new findings and perspectives on future developments. The proceedings introduce current scientific and technical advances in the fields of artificial intelligence, machine learning, pattern recognition, data mining,

knowledge engineering, information retrieval, information theory, knowledge-based systems, knowledge representation and reasoning, multi-agent systems, and natural-language processing, etc. Furthermore they include papers on new intelligent computing paradigms, which combine new computing methodologies, e.g., cloud computing, service computing and pervasive computing with traditional intelligent methods. By presenting new methodologies and practices, the proceedings will benefit both researchers and practitioners who want to utilize intelligent methods in their specific fields. Dr. Fuchun Sun is a professor at the Department of Computer Science & Technology, Tsinghua University, China. Dr. Tianrui Li is a professor at the School of Information Science & Technology, Southwest Jiaotong University, Chengdu, China. Dr. Hongbo Li also works at the Department of Computer Science & Technology, Tsinghua University, China.

Innovations in Intelligent Systems is a rare collection of the latest developments in intelligent paradigms such as knowledge-based systems, computational intelligence and hybrid combinations as well as practical applications in engineering, science, business and commerce. The book covers central topics such as intelligent multi-agent systems, data mining, case-based reasoning, and rough sets. Essential techniques to the development of intelligent machines are investigated such as pattern recognition and classification, machine learning, natural language processing, grammar, evolutionary schemes, fuzzy-neural procedures, and intelligent vision. The book also includes useful applications ranging from medical diagnosis and technical/medical language translation, to power demand forecasting and manufacturing plants. Due to its depth and breadth of the coverage and the usefulness of the techniques and applications, this book is a valuable reference for experts and students alike. Proceedings of the Sixth International Conference on Intelligent System and Knowledge Engineering presents selected papers from the conference ISKE 2011, held December 15-17 in Shanghai, China. This proceedings doesn't only examine original research and approaches in the broad areas of intelligent systems and knowledge engineering, but also present new methodologies and practices in intelligent computing paradigms. The book introduces the current scientific and technical advances in the fields of artificial intelligence, machine learning, pattern recognition, data mining, information retrieval, knowledge-based systems, knowledge representation and reasoning, multi-agent systems, natural-language processing, etc. Furthermore, new computing methodologies are presented, including cloud computing, service computing and pervasive computing with traditional intelligent methods. The proceedings will be beneficial for both researchers and practitioners who want to utilize intelligent methods in their specific research fields. Dr. Yinglin Wang is a professor at the Department of Computer Science and Engineering, Shanghai Jiao Tong University, China; Dr. Tianrui Li is a professor at the School of Information Science and Technology, Southwest Jiaotong University, China.

PAAMS, the International Conference on Practical Applications of Agents and Multi-Agent Systems is an evolution of the International Workshop on Practical Applications of Agents and Multi-Agent Systems. PAAMS is an international yearly tribune to present, to discuss, and to disseminate the latest developments and the most important outcomes related to real-world applications. It provides a unique opportunity to bring multi-disciplinary experts, academics and practitioners together to exchange their

experience in the development of Agents and Multi-Agent Systems. This volume presents the papers that have been accepted for the 2016 in the special sessions: Agents Behaviours and Artificial Markets (ABAM); Advances on Demand Response and Renewable Energy Sources in Agent Based Smart Grids (ADRESS); Agents and Mobile Devices (AM); Agent Methodologies for Intelligent Robotics Applications (AMIRA); Learning, Agents and Formal Languages (LAFLang); Multi-Agent Systems and Ambient Intelligence (MASMAI); Web Mining and Recommender systems (WebMiRes). The volume also includes the paper accepted for the Doctoral Consortium in PAAMS 2016 and Collocated Events.

This book constitutes the proceedings of the 20th International Symposium on Methodologies for Intelligent Systems, ISMIS 2012, held in Macau, China, in December 2012. The 42 regular papers and 11 short papers presented were carefully reviewed and selected from 88 submissions. They are organized in topical sections named: knowledge discovery and data mining; intelligent information systems; text mining and language processing; knowledge representation and integration; music information retrieval; recommender systems; technology intelligence and applications; product configuration; human factors in information retrieval; social recommender systems; and warehousing and OLAPing complex, spatial and spatio-temporal data.

"This book provides knowledge and insights on present and future AI applications in Operations Management presenting tools and decisions in terms of theoretical and empirical models, methods and proposed applications"--Provided by publisher.

In the modern science and technology there are some research directions and ch-lenges which are at the forefront of world wide research activities because of their relevance. This relevance may be related to different aspects. First, from a point of view of researchers it can be implied by just an analytic or algorithmic difficulty in the solution of problems within an area. From a broader perspective, this re- vance can be related to how important problems and challenges in a particular area are to society, corporate or national competitiveness, etc. Needless to say that the latter, more global challenges are probably more decisive a driving force for s- ence seen from a global perspective. One of such "meta-challenges" in the present world is that of intelligent s- tems. For a long time it has been obvious that the complexity of our world and the speed of changes we face in virtually all processes that have impact on our life imply a need to automate many tasks and processes that have been so far limited to human beings because they require some sort of intelligence.

Machine learning (ML) and deep learning (DL) algorithms are invaluable resources for Industry 4.0 and allied areas and are considered as the future of computing. A subfield called neural networks, to recognize and understand patterns in data, helps a machine carry out tasks in a manner similar to humans. The intelligent models developed using ML and DL are effectively designed and are fully investigated – bringing in practical applications in many fields such as health care, agriculture and security. These algorithms can only be successfully applied in the context of data computing and analysis. Today, ML and DL have created conditions for potential developments in detection and prediction. Apart from these domains, ML and DL are found useful in analysing the social behaviour of humans. With the advancements in the amount and type of data available for use, it became necessary to build a means to process the data and that is where deep neural networks prove their importance. These networks

are capable of handling a large amount of data in such fields as finance and images. This book also exploits key applications in Industry 4.0 including: · Fundamental models, issues and challenges in ML and DL. · Comprehensive analyses and probabilistic approaches for ML and DL. · Various applications in healthcare predictions such as mental health, cancer, thyroid disease, lifestyle disease and cardiac arrhythmia. · Industry 4.0 applications such as facial recognition, feather classification, water stress prediction, deforestation control, tourism and social networking. · Security aspects of Industry 4.0 applications suggest remedial actions against possible attacks and prediction of associated risks. - Information is presented in an accessible way for students, researchers and scientists, business innovators and entrepreneurs, sustainable assessment and management professionals. This book equips readers with a knowledge of data analytics, ML and DL techniques for applications defined under the umbrella of Industry 4.0. This book offers comprehensive coverage, promising ideas and outstanding research contributions, supporting further development of ML and DL approaches by applying intelligence in various applications.

The third edition of this bestseller examines the principles of artificial intelligence and their application to engineering and science, as well as techniques for developing intelligent systems to solve practical problems. Covering the full spectrum of intelligent systems techniques, it incorporates knowledge-based systems, computational intelligence, and their hybrids. Using clear and concise language, Intelligent Systems for Engineers and Scientists, Third Edition features updates and improvements throughout all chapters. It includes expanded and separated chapters on genetic algorithms and single-candidate optimization techniques, while the chapter on neural networks now covers spiking networks and a range of recurrent networks. The book also provides extended coverage of fuzzy logic, including type-2 and fuzzy control systems. Example programs using rules and uncertainty are presented in an industry-standard format, so that you can run them yourself. The first part of the book describes key techniques of artificial intelligence—including rule-based systems, Bayesian updating, certainty theory, fuzzy logic (types 1 and 2), frames, objects, agents, symbolic learning, case-based reasoning, genetic algorithms, optimization algorithms, neural networks, hybrids, and the Lisp and Prolog languages. The second part describes a wide range of practical applications in interpretation and diagnosis, design and selection, planning, and control. The author provides sufficient detail to help you develop your own intelligent systems for real applications. Whether you are building intelligent systems or you simply want to know more about them, this book provides you with detailed and up-to-date guidance. Check out the significantly expanded set of free web-based resources that support the book at: http://www.adrianhopgood.com/aitoolkit/
Prostheses, assistive systems, and rehabilitation systems are essential to increasing the quality of life for people with disabilities. Research and development over the last decade has resulted in enormous advances toward that goal-none more so than the development of intelligent systems and technologies. In the first truly comprehensive book addressing intelligent technologies for the disabled, top experts from around the world provide an overview of this dynamic, rapidly evolving field. They present state-of-the-art information on the latest, innovative technologies and their applications in various systems designed to better the lives of the disabled. From the underlying principles to the design, practical applications, and assessment of results, Intelligent

Systems and Technologies in Rehabilitation Engineering offers broad, pragmatic coverage of the field. It incorporates the most recent advances in sensory and limb prostheses, myoelectric control systems, circulatory systems, assistive technologies, and applications of virtual reality. Rapid progress demands a concerted effort to keep up with the latest developments so they can begin to serve their purpose and improve the lives of the disabled. By incorporating details of the latest and most important advances into one volume, Intelligent Systems and Technologies in Rehabilitation Engineering makes that undertaking essentially effortless.

The field of artificial intelligence has been maturing for a number of years and has inspired many researchers to produce innovative intelligent systems to demonstrate the capability of intelligent machines and their success in solving human problems. Only recently, however, have intelligent systems shown progress in demonstrating success in real-life applications, particularly in industrial environments. Many organizations have successfully used at least some limited aspects of intelligent research in their day-to-day operations. The objectives of this volume are to focus on these real-life applications and report a comprehensive view of the theoretical and applied aspects of intelligent systems technology. The most recent work in industrial, commercial, military, and academic environments is summarized, including 61 state-of-the-art reports on active research applied to real world problems.

"Practical Applications of Intelligent Systems" presents selected papers from the 2013 International Conference on Intelligent Systems and Knowledge Engineering (ISKE2013). The aim of this conference is to bring together experts from different expertise areas to discuss the state-of-the-art in Intelligent Systems and Knowledge Engineering, and to present new research results and perspectives on future development. The topics in this volume include, but are not limited to: Intelligent Game, Intelligent Multimedia, Business Intelligence, Intelligent Bioinformatics Systems, Intelligent Healthcare Systems, User Interfaces and Human Computer Interaction, Knowledge-based Software Engineering, Social Issues of Knowledge Engineering, etc. The proceedings are benefit for both researchers and practitioners who want to learn more about the current practice, experience and promising new ideas in the broad area of intelligent systems and knowledge engineering. Dr. Zhenkun Wen is a Professor at the College of Computer and Software Engineering, Shenzhen University, China. Dr. Tianrui Li is a Professor at the School of Information Science and Technology, Southwest Jiaotong University, Xi'an, China.

Master the essential skills needed to recognize and solve complex problems with machine learning and deep learning. Using real-world examples that leverage the popular Python machine learning ecosystem, this book is your perfect companion for learning the art and science of machine learning to become a successful practitioner. The concepts, techniques, tools, frameworks, and methodologies used in this book will teach you how to think, design, build, and execute machine learning systems and projects successfully. Practical Machine Learning with Python follows a structured and comprehensive three-tiered approach packed with hands-on examples and code. Part 1 focuses on understanding machine learning concepts and tools. This includes machine learning basics with a broad overview of algorithms, techniques, concepts and applications, followed by a tour of the entire Python machine learning ecosystem. Brief guides for useful machine learning tools, libraries and frameworks are also covered. Part 2 details standard machine learning pipelines, with an emphasis on data processing analysis, feature engineering, and modeling. You will learn how to process, wrangle, summarize and visualize data in its various forms. Feature engineering and selection methodologies will be covered in detail with real-world datasets followed by model building,

tuning, interpretation and deployment. Part 3 explores multiple real-world case studies spanning diverse domains and industries like retail, transportation, movies, music, marketing, computer vision and finance. For each case study, you will learn the application of various machine learning techniques and methods. The hands-on examples will help you become familiar with state-of-the-art machine learning tools and techniques and understand what algorithms are best suited for any problem. Practical Machine Learning with Python will empower you to start solving your own problems with machine learning today! What You'll Learn Execute end-to-end machine learning projects and systems Implement hands-on examples with industry standard, open source, robust machine learning tools and frameworks Review case studies depicting applications of machine learning and deep learning on diverse domains and industries Apply a wide range of machine learning models including regression, classification, and clustering. Understand and apply the latest models and methodologies from deep learning including CNNs, RNNs, LSTMs and transfer learning. Who This Book Is For IT professionals, analysts, developers, data scientists, engineers, graduate students

Data science is an emerging field and innovations in it need to be explored for the success of society 5.0. This book not only focuses on the practical applications of data science to achieve computational excellence, but also digs deep into the issues and implications of intelligent systems. This book highlights innovations in data science to achieve computational excellence that can optimize performance of smart applications. The book focuses on methodologies, framework, design issues, tools, architectures, and technologies necessary to develop and understand data science and its emerging applications in the present era. This book will be useful for the research community, start-up entrepreneurs, academicians, and data centered industries and professors that are interested in exploring innovations in varied applications and areas of data science.

Two significant areas of study that are continually impacting various dimensions in computer science are computer vision and imaging. These technologies are rapidly enhancing how information and data is being exchanged and opening numerous avenues of advancement within areas such as multimedia and intelligent systems. The high level of applicability in computer vision and image processing requires significant research on the specific utilizations of these technologies. Advancements in Computer Vision Applications in Intelligent Systems and Multimedia Technologies is an essential reference source that discusses innovative developments in computational imaging for solving real-life issues and problems and addresses their execution in various disciplines. Featuring research on topics such as image modeling, remote sensing, and support vector machines, this book is ideally designed for IT specialists, scientists, researchers, engineers, developers, practitioners, industry professionals, academicians, and students seeking coverage on the latest developments and innovations in computer vision applications within the realm of multimedia systems.

"The fusion of AI and IoT enables the systems to be predictive, prescriptive, and autonomous, and this convergence has evolved the nature of emerging applications from being assisted to augmented, and ultimately to autonomous intelligence. This book discusses algorithmic applications in the field of machine learning and IoT with pertinent applications. It further discusses challenges and future directions in the machine learning area and develops understanding of its role in technology, in terms of IoT security issues. Pertinent applications described include speech recognition, medical diagnosis, optimizations, predictions, and security aspects. Features: Focuses on algorithmic and practical parts of the artificial intelligence approaches in IoT applications. Discusses supervised and unsupervised machine learning for IoT data and devices. Presents an overview of the different algorithms related to Machine learning and IoT. Covers practical case studies on industrial and smart home automation. Includes implementation of AI from case studies in personal and industrial IoT. This book aims at Researchers and Graduate students in Computer Engineering, Networking

Communications, Information Science Engineering, and Electrical Engineering"--

This two-volume set of LNAI 12798 and 12799 constitutes the thoroughly refereed proceedings of the 34th International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2021, held virtually and in Kuala Lumpur, Malaysia, in July 2021. The 87 full papers and 19 short papers presented were carefully reviewed and selected from 145 submissions. The IEA/AIE 2021 conference will continue the tradition of emphasizing on applications of applied intelligent systems to solve real-life problems in all areas. These areas include the following: Part I, Artificial Intelligence Practices: Knowledge discovery and pattern mining; artificial intelligence and machine learning; sematic, topology, and ontology models; medical and health-related applications; graphic and social network analysis; signal and bioinformatics processing; evolutionary computation; attack security; natural language and text processing; fuzzy inference and theory; and sensor and communication networks Part II, From Theory to Practice: Prediction and recommendation; data management, clustering and classification; robotics; knowledge based and decision support systems; multimedia applications; innovative applications of intelligent systems; CPS and industrial applications; defect, anomaly and intrusion detection; financial and supply chain applications; Bayesian networks; BigData and time series processing; and information retrieval and relation extraction.

M.A.Bramer University of Portsmouth, UK This volume comprises the refereed application papers presented at AI-2003, the Twenty-third SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2003. The conference was organised by SGAI, the British Computer Society Specialist Group on Artificial Intelligence. The papers present new and innovative developments in the field, divided into sections on Personalisation, E-Commerce and Resource Management, Hazard Prediction, Fault Diagnosis and Design, Medical and Social Services and Image Recognition, Knowledge Bases and Attribute Selection. This year's prize for the best refereed application paper, which was sponsored by the Department of Trade and Industry, was won by a paper entitled Design-a-Trial: A Rule-Based Decision Support System for Clinical Trial Design, which has no fewer than nine authors: K Nammuni, C Pickering (InferMed Ltd), S Modgil (University College, London), A Montgomery (InferMed Ltd), P Hammond (University College, London), IC Wyatt (National Institute for Clinical Excellence), DG Altman (Centre for Statistics in Medicine), R Dunlop (InferMed Ltd) and H Potts (Kings College, London). This is the eleventh volume in the Applications and Innovations series. The Technical Stream papers are published as a companion volume under the title Research and Development in Intelligent Systems XX. On behalf of the conference organising committee I should like to thank all those who contributed to the organisation of this year's application programme, in particular the programme committee members, the referees and our administrators Fiona Hartree and Linsay Turbert. This volume presents the papers that have been accepted for the 2015 special sessions of the 13th International Conference on Practical Applications of Agents and Multi-Agent Systems, held at University of Salamanca, Spain, at 3rd-5th June, 2015: Agents Behaviours and Artificial Markets (ABAM); Agents and Mobile Devices (AM); Multi-Agent Systems and Ambient Intelligence (MASMAI); Web Mining and Recommender systems (WebMiRes); Learning, Agents and Formal Languages (LAFLang); Agent-based Modeling of Sustainable Behavior and Green Economies (AMSBGE); Emotional Software Agents (SSESA) and Intelligent Educational Systems (SSIES). The volume also includes the paper accepted for the Doctoral Consortium in PAAMS 2015. PAAMS, the International Conference on Practical Applications of Agents and Multi-Agent Systems is an evolution of the International Workshop on Practical Applications of Agents and Multi-Agent Systems. PAAMS is an international yearly tribune to present, to discuss and to disseminate the latest developments and the most important outcomes related to real-world applications. It provides a unique opportunity to bring multi-

disciplinary experts, academics and practitioners together to exchange their experience in the development of Agents and Multi-Agent Systems.

Intelligent systems, or artificial intelligence technologies, are playing an increasing role in areas ranging from medicine to the major manufacturing industries to financial markets. The consequences of flawed artificial intelligence systems are equally wide ranging and can be seen, for example, in the programmed trading-driven stock market crash of October 19, 1987. Intelligent Systems: Technology and Applications, Six Volume Set connects theory with proven practical applications to provide broad, multidisciplinary coverage in a single resource. In these volumes, international experts present case-study examples of successful practical techniques and solutions for diverse applications ranging from robotic systems to speech and signal processing, database management, and manufacturing.

Biological and biomedical research are increasingly driven by experimental techniques that challenge our ability to analyse, process and extract meaningful knowledge from the underlying data. The impressive capabilities of next-generation sequencing technologies, together with novel and constantly evolving, distinct types of omics data technologies, have created an increasingly complex set of challenges for the growing fields of Bioinformatics and Computational Biology. The analysis of the datasets produced and their integration call for new algorithms and approaches from fields such as Databases, Statistics, Data Mining, Machine Learning, Optimization, Computer Science and Artificial Intelligence. Clearly, Biology is more and more a science of information and requires tools from the computational sciences. In the last few years, we have seen the rise of a new generation of interdisciplinary scientists with a strong background in the biological and computational sciences. In this context, the interaction of researchers from different scientific fields is, more than ever, of foremost importance in boosting the research efforts in the field and contributing to the education of a new generation of Bioinformatics scientists. The PACBB'17 conference was intended to contribute to this effort and promote this fruitful interaction, with a technical program that included 39 papers spanning many different sub-fields in Bioinformatics and Computational Biology. Further, the conference promoted the interaction of scientists from diverse research groups and with a distinct background (computer scientists, mathematicians, biologists).

This book explores the latest research trends in intelligent systems and smart applications. It presents high-quality empirical and review studies focusing on various topics, including information systems and software engineering, knowledge management, technology in education, emerging technologies, and social networks. It provides insights into the theoretical and practical aspects of intelligent systems and smart applications.

"This volume offers intriguing applications, reviews and additions to the methodology of intelligent computing, presenting the emerging trends of state-of-the-art intelligent systems and their practical applications"--Provided by publisher.

This book constitutes the thoroughly refereed proceedings of the 32nd International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2019, held in Graz, Austria, in July 2019. The 41 full papers and 32 short papers presented were carefully reviewed and selected from 151 submissions. The IEA/AIE 2019 conference will continue the tradition of emphasizing on applications of applied intelligent systems to solve real-life problems in all areas. These areas include engineering, science, industry, automation and robotics, business and finance, medicine and biomedicine, bioinformatics, cyberspace, and human-machine interactions. IEA/AIE 2019 will have a special focus on automated driving and autonomous systems and also contributions dealing with such systems or their verification and validation as well.

"This book contains a compendium of the latest academic material on the latest breakthroughs and recent progress in intelligent systems. Including innovative studies on information retrieval, artificial intelligence, and software engineering"--

The volume Software Engineering Perspectives and Application in Intelligent Systems presents new approaches and methods to real-world problems, and in particular, exploratory research that describes novel approaches in the field of Software Engineering. Particular emphasis is laid on modern trends in selected fields of interest. New algorithms or methods in a variety of fields are also presented. The 5th Computer Science On-line Conference (CSOC 2016) is intended to provide an international forum for discussions on the latest research results in all areas related to Computer Science. The addressed topics are the theoretical aspects and applications of Computer Science, Artificial Intelligences, Cybernetics, Automation Control Theory and Software Engineering.

Although fuzzy systems and neural networks are central to the field of soft computing, most research work has focused on the development of the theories, algorithms, and designs of systems for specific applications. There has been little theoretical support for fuzzy neural systems, especially their mathematical foundations. Fuzzy Neural Intelligent Systems fills this gap. It develops a mathematical basis for fuzzy neural networks, offers a better way of combining fuzzy logic systems with neural networks, and explores some of their engineering applications. Dividing their focus into three main areas of interest, the authors give a systematic, comprehensive treatment of the relevant concepts and modern practical applications: Fundamental concepts and theories for fuzzy systems and neural networks. Foundation for fuzzy neural networks and important related topics Case examples for neuro-fuzzy systems, fuzzy systems, neural network systems, and fuzzy-neural systems Suitable for self-study, as a reference, and ideal as a textbook, Fuzzy Neural Intelligent Systems is accessible to students with a basic background in linear algebra and engineering mathematics. Mastering the material in this textbook will prepare students to better understand, design, and implement fuzzy neural systems, develop new applications, and further advance the field.

From artificial neural net / game theory / semantic applications, to modeling tools, smart manufacturing systems, and data science research – this book offers a broad overview of modern intelligent methods and applications of machine learning, evolutionary computation, Industry 4.0 technologies, and autonomous agents leading to the Internet of Things and potentially a new technological revolution. Though chiefly intended for IT professionals, it will also help a broad range of users of future emerging technologies adapt to the new smart / intelligent wave. In separate chapters, the book highlights fourteen successful examples of recent advances in the rapidly evolving area of intelligent systems. Covering major European projects paving the way to a serious smart / intelligent collaboration, the chapters explore e.g. cyber-security issues, 3D digitization, aerial robots, and SMEs that have introduced cyber-physical production systems. Taken together, they offer unique insights into contemporary artificial intelligence and its potential for innovation.

Research on Agents and Multi-agent Systems has matured during the last decade and many effective applications of this technology are now deployed. PAAMS provides an international forum to presents and discuss the latest scientific developments and their effective applications, to assess the impact of the approach, and to facilitate technology transfer. PAAMS started as a local initiative, but since grown to become the international yearly platform to present, to discuss, and to disseminate the latest developments and the most important outcomes related to real-world applications. It provides a unique opportunity to bring multi-disciplinary experts, academics and practitioners together to Exchange their experience in the development and deployment of Agents and Multi-agents systems. PAAMS intends to bring together researchers and developers from industry and the academic world to report on the latest scientific and

technical advances on the application of multi-agent systems, to discuss and debate the major issues, and to showcase the latest systems using agent based technology. It will promote a forum for discussion on how agent based techniques, methods and tools help system designers to accomplish the mapping between available agent technology and application needs. Other stakeholders should be rewarded with a better understanding of the potential and challenges of the agent-oriented approach. This edition of PAAMS special sessions is organized by the Bioinformatics, Intelligent System and Educational Technology Research Group (http://bisite.usal.es) of the University of Salamanca. The present edition was held in Salamanca, Spain, from 22nd to 24th May 2013.

This book presents Proceedings of the 2021 Intelligent Systems Conference which is a remarkable collection of chapters covering a wider range of topics in areas of intelligent systems and artificial intelligence and their applications to the real world. The conference attracted a total of 496 submissions from many academic pioneering researchers, scientists, industrial engineers, and students from all around the world. These submissions underwent a double-blind peer-review process. Of the total submissions, 180 submissions have been selected to be included in these proceedings. As we witness exponential growth of computational intelligence in several directions and use of intelligent systems in everyday applications, this book is an ideal resource for reporting latest innovations and future of AI. The chapters include theory and application on all aspects of artificial intelligence, from classical to intelligent scope. We hope that readers find the book interesting and valuable; it provides the state-of-the-art intelligent methods and techniques for solving real-world problems along with a vision of the future research.

Practical Applications of Intelligent SystemsProceedings of the Eighth International Conference on Intelligent Systems and Knowledge Engineering, Shenzhen, China, Nov 2013 (ISKE 2013)Springer

From theory to techniques, the first all-in-one resource for EIS There is a clear demand in advanced process industries, defense, and Internet and communication (VoIP) applications for intelligent yet adaptive/evolving systems. Evolving Intelligent Systems is the first self- contained volume that covers this newly established concept in its entirety, from a systematic methodology to case studies to industrial applications. Featuring chapters written by leading world experts, it addresses the progress, trends, and major achievements in this emerging research field, with a strong emphasis on the balance between novel theoretical results and solutions and practical real-life applications. Explains the following fundamental approaches for developing evolving intelligent systems (EIS): the Hierarchical Prioritized Structure the Participatory Learning Paradigm the Evolving Takagi-Sugeno fuzzy systems (eTS+) the evolving clustering algorithm that stems from the well-known Gustafson-Kessel offline clustering algorithm Emphasizes the importance and increased interest in online processing of data streams Outlines the general strategy of using the fuzzy dynamic clustering as a foundation for evolvable information granulation Presents a methodology for developing robust and interpretable evolving fuzzy rule-based systems Introduces an integrated approach to incremental (real-time) feature extraction and classification Proposes a study on the stability of evolving neuro-fuzzy recurrent networks Details methodologies for evolving clustering and classification Reveals different applications of EIS to address real

problems in areas of: evolving inferential sensors in chemical and petrochemical industry learning and recognition in robotics Features downloadable software resources Evolving Intelligent Systems is the one-stop reference guide for both theoretical and practical issues for computer scientists, engineers, researchers, applied mathematicians, machine learning and data mining experts, graduate students, and professionals.