

Advances In Computer Games 14th International Conference Acg 2015 Leiden The Netherlands July 1 3 2015 Revised Selected Papers Lecture Notes In Computer Science

The four-volume set LNCS 8117-8120 constitutes the refereed proceedings of the 14th IFIP TC13 International Conference on Human-Computer Interaction, INTERACT 2013, held in Cape Town, South Africa, in September 2013. The fourth volume includes 38 regular papers organized in topical sections on supporting physical activity, supporting shared activities, sustainability, tabletop computing, text comprehensibility, tracking eyes and head, usability evaluation and technology acceptance, user preferences and behaviour, user requirements capture and analysis, UX in work / educational context, voice / sound-based computing, 31 interactive posters, 2 industrial papers, 4 panels, 1 contribution on special interest groups, 1 tutorial, and 9 workshop papers.

This book constitutes the refereed conference proceedings of the 10th International Conference on Advances in Computer Entertainment, ACE 2013, held in Boekelo, The Netherlands, in November 2013. The 19 full paper and 16 short papers presented together 42 extended abstracts were carefully reviewed and selected from a total of 133 submissions in all categories. The papers cover topics across a wide spectrum of disciplines including new devices; evaluation and user studies; games as interface to serious applications; creating immersion; interfaces; new experiences; procedural approaches and AI; and theory. Focusing on all areas related to interactive entertainment they aim at stimulating discussion in the development of new and compelling entertainment computing and interactive art concepts and applications. This book presents original contributions on the theories and practices of emerging Internet, data and Web technologies and their applicability in businesses, engineering and academia, focusing on advances in the life-cycle exploitation of data generated from the digital ecosystem data technologies that create value, e.g. for businesses, toward a collective intelligence approach. The Internet has become the most proliferative platform for emerging large-scale computing paradigms. Among these, data and web technologies are two of the most prominent paradigms and are found in a variety of forms, such as data centers, cloud computing, mobile cloud, and mobile Web services. These technologies together create a digital ecosystem whose cornerstone is the data cycle, from capturing to processing, analyzing and visualizing. The investigation of various research and development issues in this digital ecosystem are made more pressing by the ever-increasing requirements of real-world applications that are based on storing and processing large amounts of data. The book is a valuable resource for researchers, software developers, practitioners and students interested in the field of data and web technologies.

This book provides an introduction and overview of the rapidly evolving topic of game user experience, presenting the new perspectives employed by researchers and the industry, and highlighting the recent empirical findings that illustrate the nature of it. The first section deals with cognition and player psychology, the second section includes new research on modeling and measuring player experience, the third section focuses on the impact of game user experience on game design processes and game

development cycles, the fourth section presents player experience case studies on contemporary computer games, and the final section demonstrates the evolution of game user experience in the new era of VR and AR. The book is suitable for students and professionals with different disciplinary backgrounds such as computer science, game design, software engineering, psychology, interactive media, and many others. This book introduces state-of-the-art research on simulation and serious games for education. Based partially on work presented at the 3rd Asia-Europe Symposium on Simulation and Serious Games (3rd AESSSG) held in Zhuhai, China as part of the 2016 ACM SIGGRAPH International Conference on Virtual-Reality Consortium and Applications in Industry (VRACI 2016), it includes a selection of the best papers from both. The book is divided into three major domains of education applications that use simulation and serious games: science, technology, engineering and mathematics (STEM) education; special needs education; and humanity and social science education. A valuable resource for researchers and developers in simulation and serious games for education benefit from this book, it also offers educators and professionals involved in training insights into the possible applications of simulation and serious games in various areas.

This book constitutes the refereed proceedings of the 14th International Conference on Web-Based Learning, ICWL 2015, held in Guangzhou, China, in November 2015. The 18 revised full papers presented together with 2 invited papers and 7 short papers were carefully reviewed and selected from about 79 submissions. The papers are organized in topical sections on collaborative and peer learning; e-learning platform and tools; design, model, and framework of e-learning systems; intelligent tutoring and tools; pedagogical issues; personalized and adaptive learning; and Web 2.0 and social learning environments.

This book constitutes the refereed conference proceedings of the 15th International Conference, ACG 2017, held in Leiden, The Netherlands, in July 2017. The 19 revised full papers were selected from 23 submissions and cover a wide range of computer games. They are grouped in four classes according to the order of publication: games and puzzles, go and chess, machine learning and MCTS, and gaming.

This proceedings book presents the latest research findings, innovative research results, methods and development techniques related to the emerging areas of broadband and wireless computing, from both theoretical and practical perspectives. Today's information networks are going through a rapid evolution. Different kinds of networks with different characteristics are emerging, and are being integrated into heterogeneous networks. As a result, there are numerous interconnection problems that can occur at different levels of the hardware and software design of communicating entities and communication networks. Such networks need to manage an increasing usage demand, provide support for a significant number of services, guarantee their QoS, and optimize the network resources. The success of all-IP networking and wireless technology has changed the way of living for people around the globe. Advances in electronic integration and wireless communications will pave the way to offering access to wireless networks on the fly, which in turn will allow electronic devices to share information with each other wherever and whenever necessary. This book constitutes the thoroughly refereed post-proceedings of the 11th International Conference on Advances in Computer Games, ACG 2005, held in

Taipei, Taiwan, in September 2005 in conjunction with the 10th Computer Olympiad. It contains 20 papers that cover all aspects of artificial intelligence in computer-game playing.

The two-volume set LNCS 12376 and 12377 constitutes the refereed proceedings of the 17th International Conference on Computers Helping People with Special Needs, ICCHP 2020, held in Lecco, Italy, in September 2020. The conference was held virtually due to the COVID-19 pandemic. The 104 papers presented were carefully reviewed and selected from 206 submissions. Included also are 13 introductions. The papers are organized in the following topical sections: Part I: user centred design and user participation in inclusive R&D; artificial intelligence, accessible and assistive technologies; XR accessibility – learning from the past, addressing real user needs and the technical architecture for inclusive immersive environments; serious and fun games; large-scale web accessibility observatories; accessible and inclusive digital publishing; AT and accessibility for blind and low vision users; Art Karshmer lectures in access to mathematics, science and engineering; tactile graphics and models for blind people and recognition of shapes by touch; and environmental sensing technologies for visual impairment Part II: accessibility of non-verbal communication: making spatial information accessible to people with disabilities; cognitive disabilities and accessibility – pushing the boundaries of inclusion using digital technologies and accessible eLearning environments; ICT to support inclusive education – universal learning design (ULD); hearing systems and accessories for people with hearing loss; mobile health and mobile rehabilitation for people with disabilities: current state, challenges and opportunities; innovation and implementation in the area of independent mobility through digital technologies; how to improve interaction with a text input system; human movement analysis for the design and evaluation of interactive systems and assistive devices; and service and care provision in assistive environments 12 chapters are available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

This book constitutes the refereed proceedings of the 14th International Conference on Entertainment Computing, ICEC 2015, held in Trondheim, Norway, in September/October 2015. The 26 full papers, 6 short papers, 16 posters, 6 demos and 6 workshops/tutorial descriptions presented were carefully reviewed and selected from 106 submissions. The multidisciplinary nature of Entertainment Computing is reflected by the papers. They focus on computer games; serious games for learning; interactive games; design and evaluation methods for Entertainment Computing; digital storytelling; games for health and well-being; digital art and installations; artificial intelligence and machine learning for entertainment; interactive television and entertainment.

Featuring contributions from leading experts in software engineering, this edited book provides a comprehensive introduction to computer game software development. It is a complex, interdisciplinary field that relies on contributions

from a wide variety of disciplines including arts and humanities, behavioural sciences, business, engineering, physical sciences, mathematics, etc. The book focuses on the emerging research at the intersection of game and software engineering communities. A brief history of game development is presented, which considers the shift from the development of rare games in isolated research environments in the 1950s to their ubiquitous presence in popular culture today. A summary is provided of the latest peer-reviewed research results in computer game development that have been reported at multiple levels of maturity (workshops, conferences, and journals). The core chapters of the book are devoted to sharing emerging research at the intersection of game development and software engineering. In addition, future research opportunities on new software engineering methods for games and serious educational games for software engineering education are highlighted. As an ideal reference for software engineers, developers, educators, and researchers, this book explores game development topics from software engineering and education perspectives. Key Features: Includes contributions from leading academic experts in the community Presents a current collection of emerging research at the intersection of games and software engineering Considers the interdisciplinary field from two broad perspectives: software engineering methods for game development and serious games for software engineering education Provides a snapshot of the recent literature (i.e., 2015-2020) on game development from software engineering perspectives

This book constitutes the refereed conference proceedings of the 14th International Conference on Advances in Computer Entertainment Technology, ACE 2017, held in London, UK, in December 2017. The 59 full papers presented were selected from a total of 229 submissions. ACE is by nature a multi-disciplinary conference, therefore attracting people across a wide spectrum of interests and disciplines including computer science, design, arts, sociology, anthropology, psychology, and marketing. The main goal is to stimulate discussion in the development of new and compelling entertainment computing and interactive art concepts and applications. The chapter 'eSport vs irlSport' is open access under a CC BY 4.0 license via link.springer.com.

This book constitutes the refereed conference proceedings of the 8th International Conference on Image and Graphics, ICIG 2015 held in Tianjin, China, in August 2015. The 164 revised full papers and 6 special issue papers were carefully reviewed and selected from 339 submissions. The papers focus on various advances of theory, techniques and algorithms in the fields of images and graphics.

This book constitutes the refereed proceedings of the 16th International Conference on Entertainment Computing, ICEC 2017, held in Tsukuba City, Japan, in September 2017. The 16 full papers, 13 short papers, and 2 posters presented were carefully reviewed and selected from 46 submissions.

This book offers a systematic overview of the concepts and practical techniques

that readers need to get the most out of their large-scale data mining projects and research studies. It guides them through the data-analytical thinking essential to extract useful information and obtain commercial value from the data. Presenting the outcomes of International Conference on Soft Computing and Data Mining (SCDM-2017), held in Johor, Malaysia on February 6–8, 2018, it provides a well-balanced integration of soft computing and data mining techniques. The two constituents are brought together in various combinations of applications and practices. To thrive in these data-driven ecosystems, researchers, engineers, data analysts, practitioners, and managers must understand the design choice and options of soft computing and data mining techniques, and as such this book is a valuable resource, helping readers solve complex benchmark problems and better appreciate the concepts, tools, and techniques employed.

The Digital Gaming Handbook covers the state-of-the-art in video and digital game research and development, from traditional to emerging elements of gaming across multiple disciplines. Chapters are presented with applicability across all gaming platforms over a broad range of topics, from game content creation through gameplay at a level accessible for the professional game developer while being deep enough to provide a valuable reference of the state-of-the-art research in this field. Key Features: International experts share their research and experience in game development and design Provides readers with inside perspectives on the cross-disciplinary aspects of the industry Includes retrospective and forward-looking examinations of gaming Editor: Dr. Roberto Dillon is a leading game studies educator with more than 15 years of experience in the field of game design and development.

This book constitutes the refereed proceedings of the 14th International Conference on Asia-Pacific Digital Libraries, ICADL 2012, held in Taipei, China, in November 2012. The 27 revised full papers, 17 revised short papers, and 13 poster papers were carefully reviewed and selected from 93 submissions. The papers are organized in topical sections on cultural heritage preservation, retrieval and browsing in digital libraries, biliometrics, metadata and cataloguing, mobile and cloud computing, human factors in digital library, presevation systems and algorithms, social media, digital library algorithms and systems, recommendation applications and social networks.

The book presents the proceedings of four conferences: The 26th International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'20), The 18th International Conference on Scientific Computing (CSC'20); The 17th International Conference on Modeling, Simulation and Visualization Methods (MSV'20); and The 16th International Conference on Grid, Cloud, and Cluster Computing (GCC'20). The conferences took place in Las Vegas, NV, USA, July 27-30, 2020. The conferences are part of the larger 2020 World Congress in Computer Science, Computer Engineering, & Applied Computing (CSCE'20), which features 20 major tracks. Authors include academics, researchers, professionals, and students. Presents the proceedings of four conferences as part of the 2020 World Congress in Computer Science, Computer Engineering, & Applied Computing (CSCE'20); Includes the research tracks Parallel and Distributed Processing, Scientific Computing, Modeling, Simulation and Visualization, and Grid, Cloud, and Cluster Computing; Features papers from PDPTA'20, CSC'20, MSV'20, and GCC'20.

This book constitutes the proceedings of the 6th International Conference on Intelligent Technologies for Interactive Entertainment, INTETAIN 2014. The 8 full papers presented together with 4 special session papers, 4 panels and 6 extended abstracts were carefully selected from 26 submissions. The papers present interdisciplinary research, covering topics

such as creativity applied to technology, AI, cognition and models of engagement and play.

The special session papers address the topic of humor in intelligent environments.

The design of various virtual environments should be based on the needs of a diverse population of users around the globe. Interface design should be user centric and should strive for making the user's interaction as simple, meaningful, and efficient as possible. User Interface Design for Virtual Environments: Challenges and Advances focuses on challenges that designers face in creating interfaces for users of various virtual environments. Chapters included in this book address various critical issues that have implications for user interface design from a number of different viewpoints. This book is written for professionals who want to improve their understanding of challenges associated with user interface design issues for globally-dispersed users in various virtual environments.

This book constitutes the thoroughly refereed post-conference proceedings of the 9th International Conference on Computers and Games, CG 2016, held in Leiden, The Netherlands, in conjunction with the 19th Computer Olympiad and the 22nd World Computer-Chess Championship. The 20 papers presented were carefully reviewed and selected of 30 submitted papers. The 20 papers cover a wide range of computer games and many different research topics in four main classes which determined the order of publication: Monte Carlo Tree Search (MCTS) and its enhancements (seven papers), concrete games (seven papers), theoretical aspects and complexity (five papers) and cognition model (one paper). The paper Using Partial Tablebases in Breakthrough by Andrew Isaac and Richard Lorentz received the Best Paper Award.

The mind-set that has dominated the history of computer game playing relies on straightforward exploitation of the available computing power. The fact that a machine can explore millions of variations sooner than the sluggish human can wink an eye has inspired hopes that the mystery of intelligence can be cracked, or at least side-stepped, by sheer force. Decades of the steadily growing strength of computer programs have attested to the soundness of this approach. It is clear that deeper understanding can cut the amount of necessary calculations by orders of magnitude. The papers collected in this volume describe how to instill learning skills in game playing machines. The reader is asked to keep in mind that this is not just about games -- the possibility that the discussed techniques will be used in control systems and in decision support always looms in the background.

This volume, LNCS 3961, contains the papers selected from those presented at the International Conference on Information Networking 2006 (ICOIN 2006), held in Sendai, Japan. ICOIN 2006 constituted the 20th Anniversary of ICOIN. This year's conference program mainly focused on the field of ubiquitous and overlay networks, and on technology for ad hoc and sensor networks, mobile networks, transport networks, QoS and resource management, network security, peer-to-peer and overlay networks, resource management, and their applications. In response to the call for papers, 468 papers were submitted by authors from 23 different countries from Europe, the Middle East, and the Americas. Each paper was evaluated by two or three internationally known experts to assure the excellence of the papers presented at ICOIN 2006. To keep within the conference topics, some excellent papers had to be rejected to our regret. After extensive reviews, 141 papers were chosen for presentation in 25 technical sessions. Furthermore, another review of these papers was performed during presentation, and finally 98 papers were selected for printing in LNCS 3961. We expect this will add to the excellence of ICOIN 2006. The papers in LNCS 3961 are categorized into 8 sections: Mobile and Ubiquitous Networking, Ad Hoc and Sensor Networks, Advanced Networking, QoS and Resource Management, Network and Transport Protocols, Network Security, Applications and Services, and Peer-to-Peer and Overlay Networks, ranging from information networking to applications in next generation networks.

This book constitutes the thoroughly refereed post-conference proceedings of the 13th

Advances in Computer Games Conference, ACG 2011, held in Tilburg, The Netherlands, in November 2011. The 29 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers cover a wide range of topics such as Monte-Carlo tree search and its enhancement, temporal difference learning, optimization, solving and searching, analysis of a game characteristic, new approaches, and serious games.

The three-volume set LNCS 6675, 6676 and 6677 constitutes the refereed proceedings of the 8th International Symposium on Neural Networks, ISNN 2011, held in Guilin, China, in May/June 2011. The total of 215 papers presented in all three volumes were carefully reviewed and selected from 651 submissions. The contributions are structured in topical sections on computational neuroscience and cognitive science; neurodynamics and complex systems; stability and convergence analysis; neural network models; supervised learning and unsupervised learning; kernel methods and support vector machines; mixture models and clustering; visual perception and pattern recognition; motion, tracking and object recognition; natural scene analysis and speech recognition; neuromorphic hardware, fuzzy neural networks and robotics; multi-agent systems and adaptive dynamic programming; reinforcement learning and decision making; action and motor control; adaptive and hybrid intelligent systems; neuroinformatics and bioinformatics; information retrieval; data mining and knowledge discovery; and natural language processing.

The book is about user interfaces to applications that have been designed for social and physical interaction. The interfaces are 'playful', that is, users feel challenged to engage in social and physical interaction because that will be fun. The topics that will be present in this book are interactive playgrounds, urban games using mobiles, sensor-equipped environments for playing, child-computer interaction, tangible game interfaces, interactive tabletop technology and applications, full-body interaction, exertion games, persuasion, engagement, evaluation and user experience. Readers of the book will not only get a survey of state-of-the-art research in these areas, but the chapters in this book will also provide a vision of the future where playful interfaces will be ubiquitous, that is, present and integrated in home, office, recreational, sports and urban environments, emphasizing that in the future in these environments game elements will be integrated and welcomed.

This book constitutes the refereed proceedings of the 3rd International Conference on Serious Games Development and Applications, SGDA 2012, held in Bremen, Germany in September 2012. The 22 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers cover various topics on serious games including engineering, education, health care, military applications, game design, game study, game theories, virtual reality, 3D visualisation and medical applications of games technology.

This book constitutes the thoroughly refereed post-conference proceedings of the 14th International Conference on Advances in Computer Games, ACG 2015, held in Leiden, The Netherlands, in July 2015. The 22 revised full papers presented were carefully reviewed and selected from 34 submissions. The papers cover a wide range of topics such as Monte-Carlo Tree Search and its enhancements; theoretical aspects and complexity; analysis of game characteristics; search algorithms; and machine learning. 'Entertainment media' are entertainment products and services that rely on digital

technology and include traditional media (such as movies, TV, computer animation etc) as well as emerging services for wireless and broadband, electronic toys, video games, edutainment, and location-based entertainment (from PC game rooms to theme parks). Whilst most of the digital entertainment industry is found in the developed countries such as USA, Europe, and Japan, the decreasing costs of computer and programming technologies enables developing countries to really benefit from entertainment media in two ways: as creators and producers of games and entertainment for the global market and as a way to increase creativity and learning among the youth of the developing world. Focusing specifically on initiatives that use entertainment technologies to promote economic development, education, creativity and cultural dissemination, this book explores how current technology and the use of off-the-shelf technologies (such as cheap sensors, Kinect, Arduino and others) can be exploited to achieve more innovative and affordable ways to harness the entertainment power of creating. It poses questions such as 'How can we convert consumers of entertainment into creators of entertainment?' 'How can digital entertainment make a contribution to the emerging world?'. Academic researchers and students in human-computer interaction, entertainment computing, learning technologies will find the content thought-provoking, and companies and professionals in game and entertainment technology, mobile applications, social networking etc. will find this a valuable resource in developing new products and new markets.

Until now there has been no state-of-the-art collection of the most important writings in automatic text summarization. This book presents the key developments in the field in an integrated framework and suggests future research areas. With the rapid growth of the World Wide Web and electronic information services, information is becoming available on-line at an incredible rate. One result is the oft-decried information overload. No one has time to read everything, yet we often have to make critical decisions based on what we are able to assimilate. The technology of automatic text summarization is becoming indispensable for dealing with this problem. Text summarization is the process of distilling the most important information from a source to produce an abridged version for a particular user or task. Until now there has been no state-of-the-art collection of the most important writings in automatic text summarization. This book presents the key developments in the field in an integrated framework and suggests future research areas. The book is organized into six sections: Classical Approaches, Corpus-Based Approaches, Exploiting Discourse Structure, Knowledge-Rich Approaches, Evaluation Methods, and New Summarization Problem Areas.

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This book constitutes the refereed proceedings of the 14th International Symposium on Visual Computing, ISVC 2019, held in Lake Tahoe, NV, USA in October 2019. The 100 papers presented in this double volume were carefully reviewed and selected from 163

submissions. The papers are organized into the following topical sections: Deep Learning I; Computer Graphics I; Segmentation/Recognition; Video Analysis and Event Recognition; Visualization; ST: Computational Vision, AI and Mathematical methods for Biomedical and Biological Image Analysis; Biometrics; Virtual Reality I; Applications I; ST: Vision for Remote Sensing and Infrastructure Inspection; Computer Graphics II; Applications II; Deep Learning II; Virtual Reality II; Object Recognition/Detection/Categorization; and Poster.

The aim of this book is to collect and to cluster research areas in the field of serious games and entertainment computing. It provides an introduction and gives guidance for the next generation of researchers in this field. The 18 papers presented in this volume, together with an introduction, are the outcome of a GI-Dagstuhl seminar which was held at Schloß Dagstuhl in July 2015.

These Proceedings represent the work of contributors to the 14th European Conference on e-Learning, ECEL 2015, hosted this year by the University of Hertfordshire, Hatfield, UK on 29-30 October 2015. The Conference and Programme Co-Chairs are Professor Amanda Jefferies and Dr Marija Cubric, both from the University of Hertfordshire. The conference will be opened with a keynote address by Professor Patrick McAndrew, Director, Institute of Educational Technology, Open University, UK with a talk on "Innovating for learning: designing for the future of education." On the second day the keynote will be delivered by Professor John Traxler, University of Wolverhampton, UK on the subject of "Mobile Learning - No Longer Just e-Learning with Mobiles." ECEL provides a valuable platform for individuals to present their research findings, display their work in progress and discuss conceptual advances in many different branches of e-Learning. At the same time, it provides an important opportunity for members of the EL community to come together with peers, share knowledge and exchange ideas. With an initial submission of 169 abstracts, after the double blind, peer review process there are 86 academic papers, 16 Phd Papers, 5 Work in Progress papers and 1 non academic papers in these Conference Proceedings. These papers reflect the truly global nature of research in the area with contributions from Algeria, Australia, Austria, Belgium, Botswana, Canada, Chile, Coventry, Czech Republic, Denmark, Egypt, England, Estonia, France, Germany, Ireland, Japan, Kazakhstan, New Zealand, Nigeria, Norway, Oman, Portugal, Republic of Kazakhstan, Romania, Saudi Arabia, Scotland, Singapore, South Africa, Sweden, the Czech Republic, Turkey, Uganda, UK, United Arab Emirates, UK and USA, Zimbabwe. A selection of papers - those agreed by a panel of reviewers and the editor will be published in a special conference edition of the EJEL (Electronic Journal of e-Learning www.ejel.org).

This book constitutes the refereed proceedings of the First International Conference on E-learning and Games, Edutainment 2006, held in Hangzhou, China in April 2006. The 121 revised full papers and 52 short papers presented together with the abstracts of 3 invited papers and those of the keynote speeches cover a wide range of topics, including e-learning platforms and tools, learning resource management, practice and experience sharing, e-learning standards, and more.

This book constitutes the refereed proceedings of the 12th International Conference on Entertainment Computing, ICEC 2013, held in Sao Paulo, Brazil, in October 2013. The 13 full papers, 6 short papers, 11 posters presented were carefully reviewed and selected from 75 submissions. In addition to these papers, the program featured 2 demos, 3 workshops, 3 tutorials and 3 art installations, also summarized in this book. The papers cover various topics in the multi-disciplinary field of entertainment computing.

This book constitutes the proceedings of the Second Joint International Conference on Serious Games, JCSG 2016, held in Brisbane, QLD, Australia, in September 2016. This conference

bundles the activities of the International Conference on Serious Games Development and Applications, SGDA, and the Conference on Serious Games, GameDays. The total of 36 full papers and 5 short papers was carefully reviewed and selected from numerous submissions. The papers were organized in topical sections named: health, well-being and accessibility; education, learning and training; science, nature and heritage; design, development and analysis; poster papers; exhibits.

This edited collection will provide an overview of the field of physiological computing, i.e. the use of physiological signals as input for computer control. It will cover a breadth of current research, from brain-computer interfaces to telemedicine.

The unconventional computing is a niche for interdisciplinary science, cross-bred of computer science, physics, mathematics, chemistry, electronic engineering, biology, material science and nanotechnology. The aims of this book are to uncover and exploit principles and mechanisms of information processing in and functional properties of physical, chemical and living systems to develop efficient algorithms, design optimal architectures and manufacture working prototypes of future and emergent computing devices. This second volume presents experimental laboratory prototypes and applied computing implementations. Emergent molecular computing is presented by enzymatic logical gates and circuits, and DNA nano-devices. Reaction-diffusion chemical computing is exemplified by logical circuits in Belousov-Zhabotinsky medium and geometrical computation in precipitating chemical reactions. Logical circuits realised with solitons and impulses in polymer chains show advances in collision-based computing. Photo-chemical and memristive devices give us a glimpse on hot topics of a novel hardware. Practical computing is represented by algorithms of collective and immune-computing and nature-inspired optimisation. Living computing devices are implemented in real and simulated cells, regenerating organisms, plant roots and slime mould. The book is the encyclopedia, the first ever complete authoritative account, of the theoretical and experimental findings in the unconventional computing written by the world leaders in the field. All chapters are self-contained, no specialist background is required to appreciate ideas, findings, constructs and designs presented. This treatise in unconventional computing appeals to readers from all walks of life, from high-school pupils to university professors, from mathematicians, computers scientists and engineers to chemists and biologists.

These proceedings represent the work of contributors to the 14th European Conference on Games Based Learning (ECGBL 2020), hosted by The University of Brighton on 24-25 September 2020. The Conference Chair is Panagiotis Fotaris and the Programme Chairs are Dr Katie Piatt and Dr Cate Grundy, all from University of Brighton, UK.

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