Automated Scenario Generation Toward Tailored And

This is the fifth year we have been able to capture the research and development efforts related to the Generalized Intelligent Framework for Tutoring (GIFT) community which at the writing of these proceedings has well over 1000 users in over 65 countries. We are proud of what we have been able to accomplish with the help of our user community. These proceedings are intended to document the evolutions of GIFT as a tool for the authoring of intelligent tutoring systems (ITSs) and the evaluation of adaptive instructional tools and methods.

Towards Balanced Automation The concept. Manufacturing industries worldwide are facing tough challenges as a consequence of the globalization of economy and the openness of the markets. Progress of the economic blocks such as the European Union, NAFTA, and MERCOSUR, and the global agreements such as GATT, in addition to their obvious economic and social consequences, provoke strong paradigm shifts in the way that the manufacturing systems are conceived and operate. To increase profitability and reduce the manufacturing costs, there is a recent tendency towards establishing partnership links among the involved industries, usually between big industries and the networks of components' suppliers. To benefit from the advances in technology, similar agreements are being established between industries and universities and research institutes. Such an open tete-cooperation network may be identified as an extended enterprise or a virtual enterprise. In fact, the manufacturing process is no more carried out by a single enterprise, rather each enterprise is just a node that adds some value (a step in the manufacturing chain) to the cooperation network of enterprises. The new trends create new scenarios and technological challenges, especially to the Small and Medium size Enterprises (SMEs) that clearly comprise the overwhelming majority of manufacturing enterprises worldwide. Under the classical scenarios, these SMEs would have had big difficulties to access or benefit from the state of the art technology, due to their limited human, financial, and material resources.

This book constitutes the proceedings of the 12th International Conference on Social, Cultural, and Behavioral Modeling, SBP-BRiMS 2019, held in Washington, DC, USA, in July 2019. The total of 28 papers presented in this volume was carefully reviewed and selected from 72 submissions. The papers in this volume show, people, theories, methods and data from a wide number of disciplines including computer science, psychology, sociology, communication science, public health, bioinformatics, political science, and organizational science. Numerous types of computational methods are used include, but not limited to, machine learning, language technology, social network analysis and visualization, agent-based simulation, and statistics.

AI Knowledge Transfer from the University to Society: Applications in High-Impact Sectors brings together examples from the "Innovative Ecosystem with Artificial Intelligence for Andalusia 2025" project at the University of Seville, a series of sub-projects composed of research groups and different institutions or companies that explore the use of Artificial Intelligence in a variety of high-impact sectors to lead innovation and assist in decision-making. Key Features Includes chapters on health and social welfare, transportation, digital economy, energy efficiency and sustainability, agro-industry, and tourism Great diversity of authors, expert in varied sectors, belonging to powerful research groups from the University of Seville with proven experience in the transfer of knowledge to the productive sector and agents attached to the Andalucía TECH Campus

With C and GNU Development Tools

Proceedings of the 5th Annual Generalized Intelligent Framework for Tutoring (GIFT) Users Symposium (GIFTSym5)

AI Knowledge Transfer from the University to Society

The Gorkha Earthquake, Nepal, 2015

Theory, Methodology and Robot-based Practices

12th International Conference, SBP-BRiMS 2019, Washington, DC, USA, July 9–12, 2019, Proceedings

26th International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2013, Amsterdam, The Netherlands, June 17-21, 2013, Proceedings

This volume constitutes the thoroughly refereed conference proceedings of the 26th International Conference on Industrial Engineering and Other Applications of Applied Intelligence Systems, IEA/AIE 2013, held in Amsterdam, The Netherlands, in June 2013. The total of 71 papers selected for the proceedings were carefully reviewed and selected from 185 submissions. The papers focus on the following topics: auctions and negotiation, cognitive modeling, crowd behavior modeling, distributed systems and networks, evolutionary algorithms, knowledge representation and reasoning, pattern recognition, planning, problem solving, robotics, text mining, advances in recommender systems, business process intelligence, decision support for safety-related systems, innovations in intelligent computation and applications, intelligent image and signal processing, and machine learning methods applied to manufacturing processes and production systems.

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

This volume contains the papers presented at the 11th SDL Forum, Stuttgart. As well as the papers, the 11th SDL Forum also hosted a system design competition sponsored by Solinet with a cash prize for the "best" design. This follows a similar competition at the SAM 2002 workshop (papers published in LNCS 2599). The winning entry from SAM 2002 is described in the last paper in this volume. The SDL Forum was ?rst held in 1982, and then every two years from 1985. Initially the Forum was concerned only with the Speci?cation and Descr- tion Language ?rst standardized in the 1976 Orange Book of the International Telecommunication Union (ITU). From the start this graphical CEFSM (communicating extended ?nite state machines) notation was used both to describe the implementation of systems and to specify systems (especially protocol systems in standards). In the early days both types of description were quite informal, though speci?cations were certainly more formal than the main alternative: natural languagewith some ad hoc ?gures. Implementations were usually written in assembly language, which is at too low a level to reason well about the interaction between communic- ing agents within a system. In this case the notation provided an intermediate description that gave an overview of how the implementation worked, and often the actual logical development was done at the graphical level with hand coding of that description.

This book brings together studies broadly addressing human error from different disciplines and perspectives. It discusses topics such as human performance; human variability and reliability analysis; medical, driver and pilot error, as well as automation error; root cause analyses; and the cognitive modeling of human error. In addition, it highlights

cutting-edge applications in safety management, defense, security, transportation, process controls, and medicine, as well as more traditional fields of application. Based on the AHFE 2019 International Conference on Human Error, Reliability, Resilience, and Performance, held on July 24-28, 2019, Washington D.C., USA, the book includes experimental papers, original reviews, and reports on case studies, as well as meta-analyses, technical guidelines, best practice and methodological papers. It offers a timely reference guide for researchers and practitioners dealing with human error in a diverse range of fields.

6th International Workshop, TAMODIA 2007, Toulouse, France, November 7-9, 2007, Proceedings

Traité de la e-Formation des adultes

Evidence-Based Guidelines for Online Workforce Learning

Proceedings of the Annual Air Traffic Control Association Fall Conference

11th International SDL Forum, Stuttgart, Germany, July 1-4, 2003, Proceedings

Annual Air Traffic Control Association Fall Conference Proceedings

Design Recommendations for Intelligent Tutoring Systems

Scenario-Based e-Learning Scenario-Based e-Learning offers a new instructionaldesign approach that can accelerate expertise, build criticalthinking skills, and promote transfer of learning. This bookfocuses on the what, when, and how of scenario-basede-learning for workforce learning. Throughout the book, Clarkdefines and demystifies scenario-based e-learning by offering apractical design model illustrated with examples from veterinaryscience, automotive troubleshooting, sales and loan analysis amongother industries. Filled with helpful guidelines and a wealth ofillustrative screen shots, this book offers you the informationneeded to: Identify the benefits of a SBeL design for learners andlearning outcomes Determine when SBeL might be appropriate for your needs Identify specific outcomes of SBeL relevant to commonorganizational goals Classify specific instructional goals into one or more learningdomains Apply a design model to present content in a task-centeredcontext Evaluate outcomes from SBeL lessons Identify tacit expert knowledge using cognitive task analysistechniques Make a business case for SBeL in your organization Praise for Scenario-Basede-Learning "Clark has done it again—with her uncanny ability to makecomplex ideas accessible to practitioners, the guidelines in thisbook provide an important resource for you to build your ownonline, problem-centered instructional strategies." —M. David Merrill, professor emeritus at Utah StateUniversity; author, First Principles of Instruction "Clark's wonderful book provides a solid explanation of the how,what, and why of scenario-based e-learning. The tools, techniques,and resources in this book provide a roadmap for creating engaging,informative scenarios that lead to tangible, measurable learningoutcomes. If you want to design more engaging e-learning, you needto read this book." —Karl M. Kapp, Professor of InstructionalTechnology, Bloomsburg University; author, The Gamification ofLearning and Instruction

This book constitutes the refereed proceedings of the 39th International Conference on Conceptual Modeling, ER 2020, which was supposed to be held in Vienna, Austria, in November 2020, but the conference was held virtually due to the COVID-19 pandemic. The 28 full and 16 short papers were carefully reviewed and selected from 143 submissions. This events covers a wide range of topics, and the papers are organized in the following sessions: foundations of conceptual modeling; process mining and conceptual modeling; conceptual modeling of business rules and processes; modeling chatbots, narratives and natural language; ontology and conceptual modeling; applications of conceptual modeling; schema design, evolution, NoSQL; empirical studies of conceptual modeling; networks, graphs and conceptual modeling; and conceptual modeling of complex and data-rich systems.

Design Recommendations for Intelligent Tutoring Systems explores the impact of intelligent tutoring system design on education and training. Specifically, this volume examines "Instructional Management" techniques, strategies and tactics, and identifies best practices, emerging concepts and future needs to promote efficient and effective adaptive tutoring solutions. Design recommendations include current, projected, and emerging capabilities within the Generalized Intelligent Framework for Tutoring (GIFT), an open source, modular, service-oriented architecture developed to promote simplified authoring, reuse, standardization, automated instructional management and analysis of tutoring technologies.

Authored by two of the leading authorities in the field, this guide offers readers the knowledge and skills needed to achieve proficiency with embedded software.

Advances in Human Error, Reliability, Resilience, and Performance

AGARDograph

Robotic Fabrication in Architecture, Art and Design 2014

UbiComp 2006: Ubiquitous Computing

Industry 4.1

Scenario-based e-Learning

Intelligent Manufacturing with Zero Defects

A unique book that consists entirely of test automation case studies from a variety of domains - from the top name field * *Proven advice to empower development organizations to save time by mirroring others' experiences and save by avoiding others' mistakes. *Insightful case studies from a wide variety of domains, including aerospace, pharmace insurance, technology, and telecommunications. *Focuses on the basic issues, rather then technology trends, to give a long shelf life. The practice of test automation is becoming more and more popular, but many organizations are no experiencing success with it. This book unveils the secrets of how automation has been made to work in reality. The knowledge gained by reading this book can save months or years of effort in automating software testing by helpin organizations avoid expensive mistakes and take advantage of proven ideas. By its nature, this book shows the curre software test automation practice. The authors aim to keep the contributions focused on those things that are mor (e.g. people issues, return on investment, etc.) and to minimize detailed technical content where this does not imped process of learning valuable lessons, in order to give the book as long a shelf life as possible. Software practitioners enjoy reading about what happened to others. For example, at conferences, case study presentations are usually ver attended. The authors/editors have gathered together a collection of experiences from a cross-section of industries countries, both success stories and failures, in both agile and traditional development. In addition to the case studie authors/editors comment on issues raised in these stories, and also include a chapter summarizing good practices a common pitfalls.

This book provides an introduction and overview of the rapidly evolving topic of game narratives, presenting the new perspectives employed by researchers and the industry, highlighting the recent empirical findings that illustrate the it. The first section deals with narrative design and theory, the second section includes social and cultural studies on narrative, the third section focuses on new technologies and approaches for the topic, the fourth section presents and case studies, and the final section provides industry cases from professionals.

This book gathers original papers reporting on innovative methods and tools in design, modelling, simulation and optimization, and their applications in engineering design, manufacturing and other relevant industrial sectors. Topics from advances in geometric modelling, applications of virtual reality, innovative strategies for product development a additive manufacturing, human factors and user-centered design, engineering design education and applications of engineering design methods in medical rehabilitation and cultural heritage. Chapters are based on contributions to th Second International Conference on Design Tools and Methods in Industrial Engineering, ADM 2021, held on Septemb 9–10, 2021, in Rome, Italy, and organized by the Italian Association of Design Methods and Tools for Industrial Engine and Dipartimento di Ingegneria Meccanica e Aerospaziale of Sapienza Università di Roma, Italy. All in all, this book prov academics and professionals with a timely overview and extensive information on trends and technologies in industri and manufacturing.

This book constitutes the refereed proceedings of the 10th International Conference on E-Learning and Games, Edut 2016, held in Hangzhou, China, in April 2016. The 36 full papers presented were carefully reviewed and selected from submissions. They are organized in the following topical sections: E-learning and game; graphics, imaging and applicat intelligent data analytics and visualization.

Field and Service Robotics
Principles and Implementations
Programming Embedded Systems
Design Tools and Methods in Industrial Engineering II
Scientific and Technical Aerospace Reports
Balanced Automation Systems
10th International Conference, Edutainment 2016, Hangzhou, China, April 14-16, 2016, Revised Selected Papers

The seven-volume set LNCS 12137, 12138, 12139, 12140, 12141, 12142, and 12143 constitutes the proceedings of the 20th International Conference on Computational Science, ICCS 2020, held in Amsterdam, The Netherlands, in June 2020.* The total of 101 papers and 248 workshop papers presented in this book set were carefully reviewed and selected from 719 submissions (230 submissions to the main track and 489 submissions to the workshops). The papers were organized in topical sections named: Part I: ICCS Main Track Part II: ICCS Main Track Part III: Advances in High-Performance Computational Earth Sciences: Applications and Frameworks; Agent-Based Simulations, Adaptive Algorithms and Solvers; Applications of Computational Methods in Artificial Intelligence and Machine Learning; Biomedical and Bioinformatics Challenges for Computer Science Part IV: Classifier Learning from Difficult Data; Complex Social Systems through the Lens of Computational Science; Computational Health; Computational Methods for Emerging Problems in (Dis-)Information Analysis Part V: Computational Optimization, Modelling and Simulation; Computational Science in IoT and Smart Systems; Computer Graphics, Image Processing and Artificial Intelligence Part VI: Data Driven Computational Sciences; Machine Learning and Data Assimilation for Dynamical Systems; Meshfree Methods in Computational Sciences; Multiscale Modelling and Simulation; Quantum Computing Workshop Part VII: Simulations of Flow and Transport: Modeling, Algorithms and Computation; Smart Systems: Bringing Together Computer Vision, Sensor Networks and Machine Learning; Software Engineering for Computational Science; Solving Problems with Uncertainties; Teaching Computational Science; UNcErtainty QUantIficatiOn for ComputationAl modeLs *The conference was canceled due to the COVID-19 pandemic. Chapter ⬜APE: A Command-Line Tool and API for Automated Workflow Composition⬜ is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

This book on self-improving systems is the seventh in a planned series of books that examine key topics (e.g., learner modeling, instructional strategies, authoring, domain modeling, assessment, impact on learning, team tutoring, self-improving systems, data visualization) in intelligent tutoring system (ITS) design. This book focuses on self-improving systems. The discussion chapters in this book examine topics through the lens of the Generalized Intelligent Framework for Tutoring (GIFT). GIFT is a modular, service-oriented architecture created to reduce the cost and skill required to author ITSs, distribute ITSs, manage instruction within ITSs, and evaluate the effect of ITS technologies on learning, performance, retention, transfer of skills, and other instructional outcomes.

"This book presents basic principles of geometric modelling while featuring contemporary industrial case studies"--Provided by publisher.

This book presents a range of academic research and personal reflections on the Gorkha earthquake that struck Nepal in 2015. For the first time, perspectives from geography, disaster risk reduction, cultural heritage protection, archaeology, anthropology, social work, health and emergency response are discussed in a single volume. Contributions are included from practitioners and researchers from Nepal and Durham University in the UK, many of whom were in Nepal at the time of the earthquake. Evolving Narratives of Hazard and Risk explores the event of the earthquake, its consequences and its impacts, to provide a holistic and multi-perspective understanding of this special hazard and its significant ramifications for social, political, economic and cultural aspects of life in Nepal. The book highlights how these multiple perspectives are needed to inform each other in order to develop and shape new ways of thinking and interacting with environmental hazards. This collection of works will be of interest to students and academics of Environment Studies, Human Geography and Environmental Policy, and will be of particular relevance to those involved in risk research and managing risk and hazard events.

Towards the Internet of Services: The THESEUS Research Program
Integrating Advanced Computer-Aided Design, Manufacturing, and Numerical Control: Principles and Implementations

Planning Support Systems in Practice

29th International Conference, ICCBR 2021, Salamanca, Spain, September 13–16, 2021, Proceedings

20th International Conference on Intelligent Systems Design and Applications (ISDA 2020) held December 12-15, 2020

First International Conference, AIS 2019, Held as Part of the 21st HCI International Conference, HCII 2019, Orlando, FL, USA, July 26–31, 2019, Proceedings

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

Set includes some issues published under later name: RTO AGARDograph, e.g. no. 300, v. 16.

Discover the future of manufacturing with this comprehensive introduction to Industry 4.0 technologies from a celebrated expert in the field Industry 4.1: Intelligent Manufacturing with Zero Defects delivers an in-depth exploration of the functions of intelligent manufacturing and its applications and implementations through the Intelligent Factory Automation (iFA) System Platform. The book's distinguished editor offers readers a broad range of resources that educate and enlighten on topics as diverse as the Internet of Things, edge computing, cloud computing, and cyber-physical systems. You'll learn about three different advanced prediction technologies: Automatic Virtual Metrology (AVM), Intelligent Yield Management (IYM), and Intelligent Predictive Maintenance (IPM). Different use cases in a variety of manufacturing industries are covered, including both high-tech and traditional areas. In addition to providing a broad view of intelligent manufacturing and covering fundamental technologies like sensors, microcontrollers, and communication standards, the book offers access to experimental data through the IEEE DataPort. Finally, it shows readers how to build an intelligent manufacturing platform called an Advanced Manufacturing Cloud of Things (AMCoT). Readers will also learn from: An introduction to the evolution of automation and development strategy of intelligent manufacturing A comprehensive discussion of foundational concepts in sensors, microcontrollers, and communication standards An exploration of the applications of the Internet of Things, edge computing, and cloud computing The Intelligent Factory Automation System Platform and its applications and implementations A variety of use cases of intelligent manufacturing, from industries like flat-panels, semiconductors, solar cells, automotive, aerospace, chemical, and blow molding machine Perfect for researchers, engineers, scientists, professionals, and students who are interested in the ongoing evolution of Industry 4.0 and beyond, Industry 4.1: Intelligent Manufacturing with Zero Defects will also win a place in the library of laypersons interested in intelligent manufacturing applications and concepts. Completely unique, this book shows readers how Industry 4.0 technologies can be applied to achieve the goal of Zero Defects for all products.

The Internet of Services and the Internet of Things are major building blocks of the Future Internet. The digital enterprise of the future is based not only on mobile, social, and cloud technologies, but also on semantic technologies and the future Internet of Everything. Semantic technologies now enable mass customization for the delivery of goods and services that meet individual customer needs and tastes with near mass production efficiency and reliability. This is creating a competitive advantage in the industrial economy, the service economy, and the emerging data economy, leading to smart products, smart services, and smart data, all adaptable to specific tasks, locations, situations, and contexts of smart spaces. Such technologies allow us to describe, revise, and adapt the characteristics, functions, processes, and usage patterns of customization targets on the basis of machine-understandable content representation that enables automated processing and information sharing between human and software agents. This book explains the principal achievements of the Theseus research program, one of the central programs in the German government's Digital 2015 initiative and its High-Tech Strategy 2020. The methods, toolsets, and standards for semantic technologies developed during this program form a solid basis for the fourth industrial revolution (Industrie 4.0), the hybrid service economy, and the transformation of big data into useful smart data for the emerging data economy. The contributing authors are leading scientists and engineers, representing world-class academic and industrial research teams, and the ideas, technologies, and representative use cases they describe in the book derive from results in multidisciplinary fields, such as the Internet of Services; the Semantic Web, and semantic technologies, knowledge management, and search; user interfaces, multimodal interaction, and visualization; machine learning and data mining; and business process support, manufacturing, automation, medical systems, and integrated service engineering. The book will be of value to both researchers and practitioners in these domains.

This book constitutes the proceedings of the 29th International Conference on Case-Based Reasoning, ICCBR 2021, which took place in Salamanca, Spain, during September 13-16, 2021. The 21 papers presented in this volume were carefully reviewed and selected from 85 submissions. They deal with AI and related research focusing on comparison and integration of CBR with other AI methods such as deep learning architectures, reinforcement learning, lifelong learning, and eXplainable AI (XAI).

In Memory of Åsa Hallefjord

Proceedings of the Sixth Annual GIFT Users Symposium

20th International Conference, Amsterdam, The Netherlands, June 3–5, 2020, Proceedings, Part VII

Social, Cultural, and Behavioral Modeling

Adaptive Instructional Systems

Applications in High-Impact Sectors

Unique en son genre, cet ouvrage est un outil inédit de travail pour les enseignants-chercheurs, les étudiants et les praticiens dans le domaine en pleine émergence de l'e-formation des adultes. Ce traité propose une synthèse des savoirs de référence dans le domaine de la e-Formation des adultes grâce à la contribution d'une quinzaine de chercheurs reconnus dans leur spécialité scientifique. La première partie porte sur les dynamiques individuelles et/ou collectives des apprenants adultes en e-Formation. Elles sont abordées sous l'angle motivationnel (projet, choix, engagement, persistance, etc.), métacognitif (mémoire, émotions, autorégulation des apprentissages, etc.) ou encore relationnel (collaboration/ coopération, entre-aide, etc.). La seconde partie concerne les caractéristiques instrumentales, technico-pédagogiques ou socio-pédagogiques des environnements de e-Formation en lien avec l'apprentissage des

adultes.

This book highlights recent research on intelligent systems and nature-inspired computing. It presents 130 selected papers from the 19th International Conference on Intelligent Systems Design and Applications (ISDA 2020), which was held online. The ISDA is a premier conference in the field of computational intelligence, and the latest installment brought together researchers, engineers and practitioners whose work involves intelligent systems and their applications in industry. Including contributions by authors from 40 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

At the centre of the methodology used in this book is STEM learning variability space that includes STEM pedagogical variability, learners' social variability, technological variability, CS content variability and interaction variability. To design smart components, firstly, the STEM learning variability space is defined for each component separately, and then model-driven approaches are applied. The theoretical basis includes feature-based modelling and model transformations at the top specification level and heterogeneous meta-programming techniques at the implementation level. Practice includes multiple case studies oriented for solving the task prototypes, taken from the real world, by educational robots. These case studies illustrate the process of gaining interdisciplinary knowledge pieces identified as S-knowledge, T-knowledge, E-knowledge, M-knowledge or integrated STEM knowledge and evaluate smart components from the pedagogical and technological perspectives based on data gathered from one real teaching setting. Smart STEM-Driven Computer Science Education: Theory, Methodology and Robot-based Practices outlines the overall capabilities of the proposed approach and also points out the drawbacks from the viewpoint of different actors, i.e. researchers, designers, teachers and learners.

This book constitutes the refereed proceedings of the 6th International Workshop on Task Models and Diagrams for User Interface Design, TAMODIA 2007, held in Toulouse, France, in November 2007. The workshop features current research and gives some indication of the new directions in which task analysis theories, methods, techniques and tools are progressing. The papers are organized in topical sections.

Games and Narrative: Theory and Practice

Task Models and Diagrams for User Interface Design

Conceptual Modeling

39th International Conference, ER 2020, Vienna, Austria, November 3–6, 2020, Proceedings

Experiences of Test Automation

Case Studies of Software Test Automation

Evolving Narratives of Hazard and Risk

The first worldwide overview of Planning Support Systems (PSS) and their application in practice. PSS are geo-technology related instruments consisting of theories, information, methods, tools, et cetera for support of unique professional public or private planning tasks at any spatial scale. The aim is to advance progress in the development of PSS, which are far from being effectively integrated into the planning practice. The text provides an Internet-based worldwide inventory of innovative examples and successful applications of PSS in a number of different planning contexts. In-depth insights into the purposes, content, workings, and applications of a very wide diversity of PSS are given.

This book constitutes the refereed proceedings of the First International Conference on Adaptive Instructional Systems, AIS 2019, held in July 2019 as part of HCI International 2019 in Orlando, FL, USA. HCII 2019 received a total of 5029 submissions, of which 1275 papers and 209 posters were accepted for publication after a careful reviewing process. The 50 papers presented in this volume are organized in topical sections named: Adaptive Instruction Design and Authoring, Interoperability and Standardization in Adaptive Instructional Systems, Instructional Theories in Adaptive Instruction, Learner Assessment and Modelling, AI in Adaptive Instructional Systems, Conversational Tutors.

Robotic automation has become ubiquitous in the modern manufacturing landscape, spanning an overwhelming range of processes and applications-- from small scale force-controlled grinding operations for orthopedic joints to large scale composite manufacturing of aircraft fuselages. Smart factories, seamlessly linked via industrial networks and sensing, have revolutionized mass production, allowing for intelligent, adaptive manufacturing processes across a broad spectrum of industries. Against this background, an emerging group of researchers, designers, and fabricators have begun to apply robotic technology in the pursuit of architecture, art, and design, implementing them in a range of processes and scales. Coupled with computational design tools the technology is no longer relegated to the repetitive production of the assembly line, and is instead being employed for the mass-customization of non-standard components. This radical shift in protocol has been enabled by the development of new design to production workflows and the recognition of robotic manipulators as "multi-functional" fabrication platforms, capable of being reconfigured to suit the specific needs of a process. The emerging discourse surrounding robotic fabrication seeks to question the existing norms of manufacturing and has far reaching implications for the future of how architects,

artists, and designers engage with materialization processes. This book presents the proceedings of Rob|Arch2014, the second international conference on robotic fabrication in architecture, art, and design. It includes a Foreword by Sigrid Brell-Cokcan and Johannes Braumann, Association for Robots in Architecture. The work contained traverses a wide range of contemporary topics, from methodologies for incorporating dynamic material feedback into existing fabrication processes, to novel interfaces for robotic programming, to new processes for large-scale automated construction. The latent argument behind this research is that the term 'file-to-factory' must not be a reductive celebration of expediency but instead a perpetual challenge to increase the quality of feedback between design, matter, and making.

This book contains the proceedings of the 11th FSR (Field and Service Robotics), which is the leading single-track conference on applications of robotics in challenging environments. This conference was held in Zurich, Switzerland from 12-15 September 2017. The book contains 45 full-length, peer-reviewed papers organized into a variety of topics: Control, Computer Vision, Inspection, Machine Learning, Mapping, Navigation and Planning, and Systems and Tools. The goal of the book and the conference is to report and encourage the development and experimental evaluation of field and service robots, and to generate a vibrant exchange and discussion in the community. Field robots are non-factory robots, typically mobile, that operate in complex and dynamic environments: on the ground (Earth or other planets), under the ground, underwater, in the air or in space. Service robots are those that work closely with humans to help them with their lives. The first FSR was held in Canberra, Australia, in 1997. Since that first meeting, FSR has been held roughly every two years, cycling through Asia, Americas, and Europe.

Case-Based Reasoning Research and Development
Intelligent Systems Design and Applications
E-Learning and Games
Decision Support and Idea Processing Systems
Modelling
SDL 2003: System Design
Computational Science – ICCS 2020

GIFT is a free, modular, open-source tutoring architecture that is being developed to capture best tutoring practices and support rapid authoring, reuse and interoperability of Intelligent Tutoring Systems (ITSs). The authoring tools have been designed to lower costs and entry skills needed to author ITSs and our research continues to seek and discover ways to enhance the adaptiveness of ITSs to support self-regulated learning (SRL). This year marks the sixth year of GIFT Symposia and we accepted 30 papers for publication in this year's proceedings.

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

Popular Science gives our readers the information and tools to improve their technology and their world. The core belief that Popular Science and our readers share: The future is going to be better, and science and technology are the driving forces that will help make it better.

Proceedings of the Second International Conference on Design Tools and Methods in Industrial Engineering, ADM 2021, September 9–10, 2021, Rome, Italy

Smart STEM-Driven Computer Science Education

Design Recommendations for Intelligent Tutoring Systems: Volume 7 - Self-Improving Systems

Results of the 11th International Conference

Volume 2 - Instructional Management

Recent Trends in Applied Artificial Intelligence

Architectures and design methods