
Repast Symphony System Dynamics Getting Started

Case Studies in System of Systems, Enterprise Systems, and Complex Systems Engineering
 Spatial Analysis in Field Primatology
 An Introduction to Agent-Based Modeling
 Research Anthology on Smart Grid and Microgrid Development
 Cambridge Handbook of Routine Dynamics
 Social Systems Engineering
 Handbook of Research on Agent-Based Societies: Social and Cultural Interactions
 Agents and Robots for reliable Engineered Autonomy
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 The Book of Ghosts (Collected Horror Tales)
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 Groovy in Action
 Understanding Complex Urban Systems: Multidisciplinary Approaches to Modeling
 Advances in Human Factors and Ergonomics 2012- 14 Volume Set
 Large-Scale Computing Techniques for Complex System Simulations
 The Book of Tea
 Advanced HPC-based Computational Modeling in Biomechanics and Systems Biology
 Mathematics in the Visual Arts
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 How to Read a Person Like a Book
 Managing Business Complexity
 Engineering Psychology and Cognitive Ergonomics
 The SAGE Handbook of Online Research Methods
 Agent-based Modeling and Simulation
 Agent-Based Models
 Systems Science and Population Health

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SHANNON KAEL

Case Studies in System of Systems, Enterprise Systems, and Complex Systems Engineering John Wiley & Sons
 A comprehensive introduction and overview of research in Routine Dynamics written by the central researchers in the field.
Spatial Analysis in Field Primatology Springer Science & Business Media
 Bringing together diverse approaches to social simulation and research agendas, this book presents a unique collection of contributions from the First World Congress on Social Simulation, held in 2006 in Kyoto, Japan. The work emerged from the collaboration of the Pacific Asian Association for Agent-Based Approach in Social Systems Sciences, the North American Association for Computational Social and Organizational Science, and the European Social Simulation Association.
An Introduction to Agent-Based Modeling Oxford University Press
 This book discusses the latest progresses and developments on complex systems research and intends to give an exposure to

prospective readers about the theoretical and practical aspects of mathematical modelling, numerical simulation and agent-based modelling frameworks. The main purpose of this book is to emphasize a unified approach to complex systems analysis, which goes beyond to examine complicated phenomena of numerous real-life systems; this is done by investigating a huge number of components that interact with each other at different (microscopic and macroscopic) scales; new insights and emergent collective behaviours can evolve from the interactions between individual components and also with their environments. These tools and concepts permit us to better understand the patterns of various real-life systems and help us to comprehend the mechanisms behind which distinct factors shaping some complex systems phenomena being influenced. This book is published in conjunction with the International Workshop on Complex Systems Modelling & Simulation 2019 (CoSMoS 2019): IoT & Big Data Integration. This international event was held at the Universiti Sains Malaysia Main Campus, Penang, Malaysia, from 8 to 11 April 2019. This book appeals to readers interested in complex systems research and other related areas such as mathematical modelling, numerical simulation and agent-based

modelling frameworks.

Research Anthology on Smart Grid and Microgrid Development CRC Press

This book constitutes the refereed proceedings of the 19th International Conference on Engineering Psychology and Cognitive Ergonomics, EPCE 2022, held as part of the 23rd International Conference, HCI International 2022, which was held virtually in June/July 2022. The total of 1271 papers and 275 posters included in the HCII 2022 proceedings was carefully reviewed and selected from 5487 submissions. The EPCE 2022 proceedings covers subjects such as advances in applied cognitive psychology that underpin the theory, measurement and methodologies behind the development of human-machine systems. Cognitive Ergonomics describes advances in the design and development of user interfaces.

Cambridge Handbook of Routine Dynamics Springer Science & Business Media

A high fantasy following a young woman's defiance of her culture as she undertakes a dangerous quest to restore her world's lost magic in Ilana C. Myer's *Last Song Before Night*. Her name was Kimbralin Amaristoth: sister to a cruel brother, daughter of a hateful family. But that name she has forsworn, and now she is simply Lin, a musician and lyricist of uncommon ability in a land where women are forbidden to answer such callings—a fugitive who must conceal her identity or risk imprisonment and even death. On the eve of a great festival, Lin learns that an ancient scourge has returned to the land of Eivar, a pandemic both deadly and unnatural. Its resurgence brings with it the memory of an apocalypse that transformed half a continent. Long ago, magic was everywhere, rising from artistic expression—from song, from verse, from stories. But in Eivar, where poets once wove enchantments from their words and harps, the power was lost. Forbidden experiments in blood divination unleashed the plague that is remembered as the Red Death, killing thousands before it was stopped, and Eivar's connection to the Otherworld from which all enchantment flowed, broken. The Red Death's return can mean only one thing: someone is spilling innocent blood in order to master dark magic. Now poets who thought only to gain fame for their songs face a challenge much greater: galvanized by Valanir Ocune, greatest Seer of the age, Lin and several others set out to reclaim their legacy and reopen the way to the Otherworld—a quest that will test their deepest desires, imperil their lives, and decide the future. At the Publisher's request, this title is being sold without Digital Rights Management Software (DRM) applied.

Social Systems Engineering John Wiley & Sons

Online research methods are popular, dynamic and fast-changing. Following on from the great success of the first edition, published in 2008, *The SAGE Handbook of Online Research Methods, Second Edition* offers both updates of existing subject areas and new chapters covering more recent developments, such as social media, big data, data visualization and CAQDAS. Bringing together the leading names in both qualitative and quantitative online research, this new edition is organised into nine sections: 1. Online Research Methods 2. Designing Online Research 3. Online Data Capture and Data Collection 4. The Online Survey 5. Digital Quantitative Analysis 6. Digital Text Analysis 7. Virtual Ethnography 8. Online Secondary Analysis: Resources and Methods 9. The Future of Online Social Research *The SAGE Handbook of Online Research Methods, Second Edition* is an essential resource for anyone interested in the contemporary practice of computer-mediated research and scholarship.

Handbook of Research on Agent-Based Societies: Social and Cultural Interactions e-artnow

This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact.

Agents and Robots for reliable Engineered Autonomy Simon and Schuster

Uniquely reflects an engineering view to social systems in a wide variety of contexts of application *Social Systems Engineering: The Design of Complexity* brings together a wide variety of application approaches to social systems from an engineering viewpoint. The book defines a social system as any complex system formed by human beings. Focus is given to the importance of systems intervention design for specific and singular settings, the possibilities of engineering thinking and methods, the use of computational models in particular contexts, and the development of portfolios of solutions. Furthermore, this book considers both technical, human and social perspectives, which are crucial to solving complex problems. *Social Systems Engineering: The Design of Complexity* provides modelling examples to explore the design aspect of social systems. Various applications are explored in a variety of areas, such as urban systems, health care systems, socio-economic systems, and environmental systems. It covers important topics such as organizational design, modelling and intervention in socio-economic systems, participatory and/or community-based modelling, application of systems engineering tools to social problems, applications of computational behavioral modeling, computational modelling and management of complexity, and more. Highlights an engineering view to social systems (as opposed to a “scientific” view) that stresses the importance of systems intervention design for specific and singular settings *Divulges* works where the design, re-design, and transformation of social systems constitute the main aim, and where joint considerations of both technical and social perspectives are deemed important in solving social problems Features an array of applied cases that illustrate the application of social systems engineering in different domains *Social Systems Engineering: The Design of Complexity* is an excellent text for academics and graduate students in engineering and social science—specifically, economists, political scientists, anthropologists, and management scientists with an interest in finding systematic ways to intervene and improve social systems.

Complex Sciences MIT Press

Agent-based modeling and simulation (ABMS), a way to simulate a large number of choices by individual actors, is one of the most exciting practical developments in business modeling since the invention of relational databases. It represents a new way to understand data and generate information that has never been available before—a way for businesses to view the future and to understand and anticipate the likely effects of their decisions on their markets and industries. It thus promises to have far-reaching effects on the way that businesses in many areas use computers to support practical decision-making. *Managing Business Complexity* is the first complete business-oriented agent-based modeling and simulation resource. It has three purposes: first, to teach readers how to think about ABMS, that is, about agents and their interactions; second, to teach readers how to explain the features and advantages of ABMS to other people

and third, to teach readers how to actually implement ABMS by building agent-based simulations. It is intended to be a complete ABMS resource, accessible to readers who haven't had any previous experience in building agent-based simulations, or any other kinds of models, for that matter. It is also a collection of ABMS business applications resources, all assembled in one place for the first time. In short, *Managing Business Complexity* addresses who needs ABMS and why, where and when ABMS can be applied to the everyday business problems that surround us, and how specifically to build these powerful agent-based models.

Capital and Credit Oxford University Press

This book constitutes the thoroughly reviewed joint postprocessings of two international workshops on Coordination, Organization, Institutions and Norms in Agent Systems, COIN@AAMAS 2010, held in Toronto, Canada in May 2010 and COIN@MALLOW 2010, held in Lyon, France in August 2010. The 20 revised full papers presented went through several rounds of reviewing and revision and were carefully selected for presentations. The papers are organized in topical sections on normative systems design and modeling; social aspects; and norms at runtime: learning and enforcing.

Last Song Before Night IGI Global

Art and science are not separate universes. This book explores this claim by showing how mathematics, geometry and numerical approaches contribute to the construction of works of art. This applies not only to modern visual artists but also to important artists of the past. To illustrate this, this book studies Leonardo da Vinci, who was both an engineer and a painter, and whose paintings can be perfectly modeled using simple geometric curves. The world gains intelligibility through elegant mathematical frameworks – from the projective spaces of painting to the most complex phase spaces of theoretical physics. A living example of this interdisciplinarity would be the sculptures of Jean Letourneur, a specialist in both chaos sciences and carving, as evidenced in his stonework. This book also exemplifies the geometry and life of forms through contemporary works of art – including fractal art – which have never before been represented in this type of work.

Towards Bayesian Model-Based Demography Macmillan + ORM

The Book of Tea is a brief but classic essay on tea drinking, its history, restorative powers, and rich connection to Japanese culture. Okakura felt that "Teaism" was at the very center of Japanese life and helped shape everything from art, aesthetics, and an appreciation for the ephemeral to architecture, design, gardens, and painting. In tea could be found one source of what Okakura felt was Japan's and, by extension, Asia's unique power to influence the world. Containing both a history of tea in Japan and lucid, wide-ranging comments on the schools of tea, Zen, Taoism, flower arranging, and the tea ceremony and its tea-masters, this book is deservedly a timeless classic and will be of interest to anyone interested in the Japanese arts and ways. Book jacket.

Advanced Geo-Simulation Models IGI Global

Suitable as a reference for industry practitioners and as a textbook for classroom use, *Case Studies in System of Systems, Enterprise Systems, and Complex Systems Engineering* provides a clear understanding of the principles and practice of system of systems engineering (SoSE), enterprise systems engineering (ESE), and complex systems engineering (CSE). Multiple domain practitioners present and analyze case studies from a range of applications that demonstrate underlying principles and best practices of transdisciplinary systems engineering. A number of the case studies focus on addressing real human needs. Diverse approaches such as use of soft systems skills are illustrated, and other helpful techniques are also provided. The case studies

describe, examine, analyze, and assess applications across a range of domains, including: Engineering management and systems engineering education Information technology business transformation and infrastructure engineering Cooperative framework for and cost management in the construction industry Supply chain modeling and decision analysis in distribution centers and logistics International development assistance in a foreign culture of education Value analysis in generating electrical energy through wind power Systemic risk and reliability assessment in banking Assessing emergencies and reducing errors in hospitals and health care systems Information fusion and operational resilience in disaster response systems Strategy and investment for capability developments in defense acquisition Layered, flexible, and decentralized enterprise architectures in military systems Enterprise transformation of the air traffic management and transport network Supplying you with a better understanding of SoSE, ESE, and CSE concepts and principles, the book highlights best practices and lessons learned as benchmarks that are applicable to other cases. If adopted correctly, the approaches outlined can facilitate significant progress in human affairs. The study of complex systems is still in its infancy, and it is likely to evolve for decades to come. While this book does not provide all the answers, it does establish a platform, through which analysis and knowledge application can take place and conclusions can be made in order to educate the next generation of systems engineers.

Coordination, Organizations, Institutions, and Norms in Agent Systems VI Cambridge University Press

With contributions from an international group of authors with diverse backgrounds, this set comprises all fourteen volumes of the proceedings of the 4th AHFE Conference 21-25 July 2012. The set presents the latest research on current issues in Human Factors and Ergonomics. It draws from an international panel that examines cross-cultural differences, design issues, usability, road and rail transportation, aviation, modeling and simulation, and healthcare.

Advancing Social Simulation: The First World Congress Springer Nature

The 2012 International Symposium on Management Intelligent Systems is believed to be the first international forum to present and discuss original, rigorous and significant contributions on Artificial Intelligence-based (AI) solutions—with a strong, practical logic and, preferably, with empirical applications—developed to aid the management of organizations in multiple areas, activities, processes and problem-solving; i.e., what we propose to be named as Management Intelligent Systems (MiS). The three-day event aimed to bring together researchers interested in this promising interdisciplinary field who came from areas as varied as management, marketing, and business in general, computer science, artificial intelligence, statistics, etc. This volume presents the proceedings of these activities in a collection of contributions with many original approaches. They address diverse Management and Business areas of application such as decision support, segmentation of markets, CRM, product design, service personalization, organizational design, e-commerce, credit scoring, workplace integration, innovation management, business database analysis, workflow management, location of stores, etc. A wide variety of AI techniques have been applied to these areas such as multi-objective optimization and evolutionary algorithms, classification algorithms, ant algorithms, fuzzy rule-based systems, intelligent agents, Web mining, neural networks, Bayesian models, data warehousing, rough sets, etc. The symposium was organized by the Soft Computing and Intelligent Information Systems Research Group (<http://sci2s.ugr.es>) of the University of Granada (Spain) and the Bioinformatics, Intelligent

System and Educational Technology Research Group (<http://bisite.usal.es/>) of the University of Salamanca (Spain). The present edition is held in Salamanca (Spain) on July 11-13, 2012.

Agent-Based Models of Geographical Systems Springer

"This volume addresses a variety of issues, in particular the emergence of societal phenomena in the interactions of systems of agents (software, robot or human)"--Provided by publisher.

Cultural Algorithms John Wiley & Sons

Understanding Complex Urban Systems takes as its point of departure the insight that the challenges of global urbanization and the complexity of urban systems cannot be understood – let alone ‘managed’ – by sectoral and disciplinary approaches alone. But while there has recently been significant progress in broadening and refining the methodologies for the quantitative modeling of complex urban systems, in deepening the theoretical understanding of cities as complex systems, or in illuminating the implications for urban planning, there is still a lack of well-founded conceptual thinking on the methodological foundations and the strategies of modeling urban complexity across the disciplines. Bringing together experts from the fields of urban and spatial planning, ecology, urban geography, real estate analysis, organizational cybernetics, stochastic optimization, and literary studies, as well as specialists in various systems approaches and in transdisciplinary methodologies of urban analysis, the volume seeks to advance the discussion on multidisciplinary approaches to urban modeling. While engaging with the ‘state of the art’ in their respective fields, the contributions are specifically written for both experts from a broad range of disciplines as well as for urban practitioners who feel the need for new approaches given the uncertainty of current developments.

Urban Disaster Resilience and Security Springer Science & Business Media

A thorough look at how societies can use cultural algorithms to understand human social evolution For those working in computational intelligence, developing an understanding of how cultural algorithms and social intelligence form the essential framework for the evolution of human social interaction is essential. This book, *Cultural Algorithms: Tools to Model Complex Dynamic Social Systems*, is the foundation of that study. It showcases how we can use cultural algorithms to organize social structures and develop socio-political systems that work. For such a vast topic, the text covers everything from the history of the development of cultural algorithms and the basic framework with which it was organized. Readers will also learn how other nature-inspired algorithms can be expressed and how to use social metrics to assess the performance of various algorithms. In addition to these topics, the book covers topics including: The CAT system including the Repast Symphony System and CAT Sample Runs How to problem solve using social networks in cultural algorithms with auctions Understanding Common Value Action to enhance Social Knowledge Distribution Systems Case studies on team formations An exploration of virtual worlds using cultural algorithms For industry professionals or new students, *Cultural Algorithms* provides an impactful and thorough look at both social intelligence and how human social evolution translates into the modern world.

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Modelling, Simulation and Applications of Complex Systems Springer

Operational Research (OR) deals with the use of advanced analytical methods to support better decision-making. It is multidisciplinary with strong links to management science, decision science, computer science and many application areas such as engineering, manufacturing, commerce and healthcare. In the study of emergent behaviour in complex adaptive systems, Agent-based Modelling & Simulation (ABMS) is being used in many different domains such as healthcare, energy, evacuation, commerce, manufacturing and defense. This collection of articles presents a convenient introduction to ABMS with papers ranging from contemporary views to representative case studies. The OR Essentials series presents a unique cross-section of high quality research work fundamental to understanding contemporary issues and research across a range of Operational Research (OR) topics. It brings together some of the best research papers from the esteemed Operational Research Society and its associated journals, also published by Palgrave Macmillan.

Geosimulation Springer Nature

An examination of the various types of human-modeled technology, *Advances in Applied Human Modeling and Simulation* not only covers the type of models available, but how they can be applied to solve specific problems. These models provide a representation of some human aspects that can be inserted into simulations or virtual environments and facilitate prediction of safety, satisfaction, usability, performance, and sustainability. Topics include: Anthropometry and human functional data Biomechanics, occupational safety, comfort and discomfort Biometric authentications Driving safety and human performance Enhancing human capabilities through aids or training Fuzzy systems and neural computing Human behavior and risk assessment modeling Integrating software with humans and systems International cooperation in education and engineering research Intelligent agents in decision training Intelligent data and text mining Machine learning and human factors Modeling physical aspects of work Monitoring systems and human decision Psychophysiological indicators of emotion Resilience engineering and human reliability Scenario-based performance in distributed enterprises Special populations Sustainability, earth sciences and engineering System-of-systems architecting and engineering Verification and validation Virtual interactive design and assessment The math and science provides a foundation for visualizations that can facilitate decision making by technical experts, management or those responsible for public policy. In considering a systems perspective and decisions that affect performance, these models provide opportunities for an expanded role of engineers and HF/E specialists to meet technical challenges worldwide. They can also be used to improve time-to-market, increase safety and ultimately the effectiveness of an organization. The book focuses on applications of these newly developed models and predictive capabilities useful to human factors and ergonomics engineers, cognitive engineers, human computer interaction engineers, human performance modeling engineers, and students in related fields.