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KEY=COLLEGE - MATTHEWS NEAL

ENVIRONMENTAL REMOTE SENSING AND GIS IN IRAQ

Springer Nature **This unique book focuses on remote sensing (RS) and geographical information systems (GIS) in Iraq. The environmental applications include monitoring and mapping soil salinity and prediction of soil properties, monitoring and mapping of land threats, proximal sensing for soil monitoring and soil fertility, spatiotemporal land use/cover, agricultural drought monitoring, hydrological applications including spatial rainfall distribution, surface runoff and drought control, geo-morphometric analysis and flood simulation, hydrologic and hydraulic modelling and the effective management of water resources. Also, this book assesses the impacts of climate change on natural resources using both RS and GIS, as well as other applications, covering different parts of Iraq. The book chapters include tens of maps extracted from the remotely sensed datasets, in addition to tables and statistical relations obtained from the results of the studies of the chapters' authors. These studies have been conducted in different parts of Iraq; in the north (Kurdistan region) with its mountainous and undulating lands, in western parts which have desert soils, and in central and southern Iraq where there are salty soils, dunes, wetlands, and marshes. The book is written by distinguished scientists from Iraq, China, USA, Italy, Iran, Germany, and the Czech Republic who are interested in the Iraqi environment. The book is therefore a useful source of information and knowledge on Iraqi environment for graduate students, researchers, policy planners, and stakeholders in Iraq as well as similar regions.**

SUCCESSFUL SCHOOL LEADERSHIP

MODELS IN SOFTWARE ENGINEERING

WORKSHOPS AND SYMPOSIA AT MODELS 2007 NASHVILLE, TN, USA, SEPTEMBER 30 - OCTOBER 5, 2007, REPORTS AND REVISED SELECTED PAPERS

Springer **This book constitutes the thoroughly refereed post-workshop proceedings of 10 internationl workshops and 2 symposia held as satellite events of the 10th International Conference on Model Driven Engineering Languages and Systems, MoDELS 2007, in Nashville, TN, USA, in September/October 2007 (see LNCS 4735). The 29 revised full papers were carefully selected for inclusion in the book and are presented along with a doctoral and an educators' symposium section. The papers are organized in topical sections representing the various workshops: aspect-oriented modeling (AOM 2007), language engineering (ATEM2007), model driven development of advanced user interfaces (MDDAUI 2007), model size metrics (MSM 2007), model-based design of trustworthy health information systems (MOTHIS 2007), model-driven engineering, verification and validation (MoDeVVa 2007), modelling systems with OCL (Ocl4All 2007), Models@run.time, multi-paradigm modeling: concepts and tools (MPM 2007), quality in modeling, doctoral symposium, and educators' symposium.**

COLLABORATIVE MODELS AND FRAMEWORKS FOR INCLUSIVE EDUCATOR PREPARATION PROGRAMS

IGI Global **The intricacies of providing quality education for school-age children can best be realized through collaboration between practitioners. This same ideology has infiltrated education preparation programs, encouraging the emphasis on collaborative methodologies of program design, development, implementation, and evaluation. This context presents a huge challenge for many education preparation programs, but one that has been partially realized in some states through large-scale reform models. Collaborative Models and Frameworks for Inclusive Educator Preparation Programs provides relevant theoretical frameworks and the latest empirical research findings in collaborative strategies in educator preparation programs and addresses the impact on accreditation and changes in policies as a result of large-scale collaborative models. Covering topics such as education reforms, social justice, teacher education, and literacy instruction, this reference work is ideal for teachers, instructional designers, administrators, curriculum developers, policymakers, researchers, scholars, academicians, practitioners, and students.**

JOINT MEETING OF THE U.S. SECTIONS OF THE COMBUSTION

INSTITUTE, WESTERN STATES, CENTRAL STATES, EASTERN STATES

MODELLING AND SIMULATION OF INTEGRATED SYSTEMS IN ENGINEERING

ISSUES OF METHODOLOGY, QUALITY, TESTING AND APPLICATION

Elsevier **This book places particular emphasis on issues of model quality and ideas of model testing and validation. Mathematical and computer-based models provide a foundation for explaining complex behaviour, decision-making, engineering design and for real-time simulators for research and training. Many engineering design techniques depend on suitable models, assessment of the adequacy of a given model for an intended application is therefore critically important. Generic model structures and dependable libraries of sub-models that can be applied repeatedly are increasingly important. Applications are drawn from the fields of mechanical, aeronautical and control engineering, and involve non-linear lumped-parameter models described by ordinary differential equations. Focuses on issues of model quality and the suitability of a given model for a specific application Multidisciplinary problems within engineering feature strongly in the applications The development and testing of nonlinear dynamic models is given very strong emphasis**

SYSTEM ENGINEERING ANALYSIS, DESIGN, AND DEVELOPMENT

CONCEPTS, PRINCIPLES, AND PRACTICES

John Wiley & Sons **Praise for the first edition: “This excellent text will be useful to every system engineer (SE) regardless of the domain. It covers ALL relevant SE material and does so in a very clear, methodical fashion. The breadth and depth of the author's presentation of SE principles and practices is outstanding.” –Philip Allen This textbook presents a comprehensive, step-by-step guide to System Engineering analysis, design, and development via an integrated set of concepts, principles, practices, and methodologies. The methods presented in this text apply to any type of human system -- small, medium, and large organizational systems and system development projects delivering engineered systems or services across multiple business sectors such as medical, transportation, financial, educational, governmental, aerospace and defense, utilities, political, and charity, among others. Provides a common focal point for “bridging the gap” between and unifying System Users, System Acquirers, multi-discipline System Engineering, and Project, Functional, and Executive Management education, knowledge, and decision-making for developing systems, products, or services Each chapter provides definitions of key terms, guiding principles, examples, author’s notes, real-world examples, and exercises, which highlight and reinforce key SE&D concepts and practices Addresses concepts employed in Model-Based Systems**

Engineering (MBSE), Model-Driven Design (MDD), Unified Modeling Language (UMLTM) / Systems Modeling Language (SysMLTM), and Agile/Spiral/V-Model Development such as user needs, stories, and use cases analysis; specification development; system architecture development; User-Centric System Design (UCSD); interface definition & control; system integration & test; and Verification & Validation (V&V) Highlights/introduces a new 21st Century Systems Engineering & Development (SE&D) paradigm that is easy to understand and implement. Provides practices that are critical staging points for technical decision making such as Technical Strategy Development; Life Cycle requirements; Phases, Modes, & States; SE Process; Requirements Derivation; System Architecture Development, User-Centric System Design (UCSD); Engineering Standards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises and numerous case studies and examples, Systems Engineering Analysis, Design, and Development, Second Edition is a primary textbook for multi-discipline, engineering, system analysis, and project management undergraduate/graduate level students and a valuable reference for professionals.

COLLABORATION AND INTEGRATION IN CONSTRUCTION, ENGINEERING, MANAGEMENT AND TECHNOLOGY

PROCEEDINGS OF THE 11TH INTERNATIONAL CONFERENCE ON CONSTRUCTION IN THE 21ST CENTURY, LONDON 2019

Springer Nature **This book gathers papers presented at the 11th International Conference on Construction in the 21st Century, held in London in 2019. Bringing together a diverse group of government agencies, academics, professionals, and students, the book addresses issues related to construction safety, innovative technologies, lean and sustainable construction, international construction, improving quality and productivity, and innovative materials in the construction industry. In addition, it highlights international collaborations between various disciplines in the areas of construction, engineering, management, and technology. The book demonstrates that, as the industry moves forward in an ever-complex global economy, multi-national collaboration is crucial, and its future growth will undoubtedly depend on international teamwork and alliances.**

METASKILLS

FIVE TALENTS FOR THE ROBOTIC AGE

New Riders **In a sweeping vision for the future of work, Neumeier shows that the massive problems of the 21st century are largely the consequence of a paradigm shift—a shuddering gear-change from the familiar Industrial Age to the unfamiliar "Robotic Age," an era of increasing man-machine**

collaboration. This change is creating the “Robot Curve,” an accelerating waterfall of obsolescence and opportunity that is currently reshuffling the fortunes of workers, companies, and national economies. It demonstrates how the cost and value of a unit of work go down as it moves from creative to skilled to rote, and, finally, to robotic. While the Robot Curve is dangerous to those with brittle or limited skills, it offers unlimited potential to those with metaskills—master skills that enable other skills. Neumeier believes that the metaskills we need in a post-industrial economy are feeling (intuition and empathy), seeing (systems thinking), dreaming (applied imagination), making (design), and learning (autodidactics). These are not the skills we were taught in school. Yet they’re the skills we’ll need to harness the curve. In explaining each of the metaskills, he offers encouragement and concrete advice for mastering their intricacies. At the end of the book he lays out seven changes that education can make to foster these important talents. This is a rich, exciting book for forward-thinking educators, entrepreneurs, designers, artists, scientists, and future leaders in every field. It comes illustrated with clear diagrams and a 16-page color photo essay. Those who enjoy this book may be interested in its slimmer companion, The 46 Rules of Genius, also by Marty Neumeier. Things you’ll learn in Metaskills: - How to stay ahead of the “robot curve” - How to account for “latency” in your predictions - The 9 most common traps of systems behavior - How to distinguish among 4 types of originality - The 3 key steps in generating innovative solutions - 6 ways to think like Steve Jobs - How to recognize the 3 essential qualities of beauty - 24 aesthetic tools you can apply to any kind of work - 10 strategies to trigger breakthrough ideas - Why every team needs an X-shaped person - How to overcome the 5 forces arrayed against simplicity - 6 tests for measuring the freshness of a concept - How to deploy the 5 principles of “uncluding” - The 10 tests for measuring great work - How to sell an innovative concept to an organization - 12 principles for constructing a theory of learning - How to choose a personal mission for the real world - The 4 levels of professional achievement - 7 steps for revolutionizing education From the back cover "Help! A robot ate my job!" If you haven't heard this complaint yet, you will. Today's widespread unemployment is not a jobs crisis. It's a talent crisis. Technology is taking every job that doesn't need a high degree of creativity, humanity, or leadership. The solution? Stay on top of the Robot Curve--a constant waterfall of obsolescence and opportunity fed by competition and innovation. Neumeier presents five metaskills--feeling, seeing, dreaming, making, and learning--that will accelerate your success in the Robotic Age.

THE PROFESSION OF MODELING AND SIMULATION

DISCIPLINE, ETHICS, EDUCATION, VOCATION, SOCIETIES, AND ECONOMICS

John Wiley & Sons **The definite guide to the theory, knowledge, technical**

expertise, and ethical considerations that define the M&S profession From traffic control to disaster management, supply chain analysis to military logistics, healthcare management to new drug discovery, modeling and simulation (M&S) has become an essential tool for solving countless real-world problems. M&S professionals are now indispensable to how things get done across virtually every aspect of modern life. This makes it all the more surprising that, until now, no effort has been made to systematically codify the core theory, knowledge, and technical expertise needed to succeed as an M&S professional. This book brings together contributions from experts at the leading edge of the modeling and simulation profession, worldwide, who share their priceless insights into issues which are fundamental to professional success and career development in this critically important field. Running as a common thread throughout the book is an emphasis on several key aspects of the profession, including the essential body of knowledge underlying the M&S profession; the technical discipline of M&S; the ethical standards that should guide professional conduct; and the economic and commercial challenges today's M&S professionals face. • Demonstrates applications of M&S tools and techniques in a variety of fields—such as engineering, operations research, and cyber environments—with over 500 types of simulations • Highlights professional and academic aspects of the field, including preferred programming languages, professional academic and certification programs, and key international societies • Shows why M&S professionals must be fully versed in the theory, concepts, and tools needed to address the challenges of cyber environments The Profession of Modeling and Simulation is a valuable resource for M&S practitioners, developers, and researchers working in industry and government. Simulation professionals, including administrators, managers, technologists, faculty members, and scholars within the physical sciences, life sciences, and engineering fields will find it highly useful, as will students planning to pursue a career in the M&S profession. " …nearly three dozen experts in Modeling and Simulation (M&S) come together to make a compelling case for the recognition of M&S as a profession… Important reading for anyone seeking to elevate the standing of this vital field." Alfred (Al) Grasso, President & CEO, The MITRE Corporation Andreas Tolk, PhD, is Technology Integrator for the Modeling, Simulation, Experimentation, and Analytics Division of The MITRE Corporation, an adjunct professor in the Department of Engineering Management and Systems Engineering and the Department for Modeling, Simulation, and Visualization Engineering at Old Dominion University, and an SCS fellow. Tuncer Ören, PhD, is Professor Emeritus of Computer Science at the University of Ottawa. He is an SCS fellow and an inductee to SCS Modeling and Simulation Hall of Fame. His research interests include advancing methodologies, ethics, body of knowledge, and terminology of modeling and simulation.

RELIABILITY ENGINEERING AND SERVICES

Wiley **Offers a holistic approach to guiding product design, manufacturing, and after-sales support as the manufacturing industry transitions from a product-oriented model to service-oriented paradigm This book provides fundamental knowledge and best industry practices in reliability modelling, maintenance optimization, and service parts logistics planning. It aims to develop an integrated product-service system (IPSS) synthesizing design for reliability, performance-based maintenance, and spare parts inventory. It also presents a lifecycle reliability-inventory optimization framework where reliability, redundancy, maintenance, and service parts are jointly coordinated. Additionally, the book aims to report the latest advances in reliability growth planning, maintenance contracting and spares inventory logistics under non-stationary demand condition. Reliability Engineering and Service provides in-depth chapter coverage of topics such as: Reliability Concepts and Models; Mean and Variance of Reliability Estimates; Design for Reliability; Reliability Growth Planning; Accelerated Life Testing and Its Economics; Renewal Theory and Superimposed Renewals; Maintenance and Performance-Based Logistics; Warranty Service Models; Basic Spare Parts Inventory Models; Repairable Inventory Systems; Integrated Product-Service Systems (IPPS), and Resilience Modeling and Planning Guides engineers to design reliable products at a low cost Assists service engineers in providing superior after-sales support Enables managers to respond to the changing market and customer needs Uses end-of-chapter case studies to illustrate industry best practice Lifecycle approach to reliability, maintenance and spares provisioning Reliability Engineering and Service is an important book for graduate engineering students, researchers, and industry-based reliability practitioners and consultants.**

ENGINEERING MATHEMATICS QUICK STUDY GUIDE & WORKBOOK

TRIVIA QUESTIONS BANK, WORKSHEETS TO REVIEW HOMESCHOOL NOTES WITH ANSWER KEY

Bushra Arshad **Engineering Mathematics Quick Study Guide & Workbook: Trivia Questions Bank, Worksheets to Review Homeschool Notes with Answer Key PDF (Engineering Mathematics Self Teaching Guide about Self-Learning) includes revision notes for problem solving with 350 trivia questions. Engineering Mathematics quick study guide PDF book covers basic concepts and analytical assessment tests. Engineering Mathematics question bank PDF book helps to practice workbook questions from exam prep notes. Engineering Mathematics quick study guide with answers includes self-learning guide with 1400 verbal, quantitative, and analytical past papers quiz questions. Engineering Mathematics trivia questions and answers PDF download, a book to review questions and answers on chapters: Derivation Rules, First Order Ordinary Differential Equations,**

Introduction to Differential Equations, Laplace Transforms, and Separable Ordinary Differential Equation Modeling worksheets for college and university revision notes. Engineering Mathematics interview questions and answers PDF download with free sample book covers beginner's questions, textbook's study notes to practice worksheets. Mathematics study material includes high school workbook questions to practice worksheets for exam. Engineering Mathematics workbook PDF, a quick study guide with textbook chapters' tests for competitive exam. Engineering Mathematics book PDF covers problem solving exam tests from Mathematics practical and textbook's chapters as: Chapter 1: Derivation Rules Worksheet Chapter 2: First Order Ordinary Differential Equations Worksheet Chapter 3: Introduction to Differential Equations Worksheet Chapter 4: Laplace Transforms Worksheet Chapter 5: Separable Ordinary Differential Equation Modeling Worksheet Solve Derivation Rules study guide PDF with answer key, worksheet 1 trivia questions bank: Transcendental number, trigonometry, logarithm, constant, chain rule, exponential, logarithmic functions, general rules, variable, and rules of derivations. Solve First Order Ordinary Differential Equations study guide PDF with answer key, worksheet 1 trivia questions bank: Homogeneous and inhomogeneous differential equations, concepts of solution, separation of variables, number types, interval types, differential equation types, basic concepts, initial value problem, elementary function, de model, and ordinary differential equation. Solve Introduction to Differential Equations study guide PDF with answer key, worksheet 1 trivia questions bank: DE classifications by types, advance mathematical problems, DE definitions & terminology, mathematical model classifications, DE tools, DE classifications by order, ordinary derivatives notations, and mathematical model. Solve Laplace Transforms study guide PDF with answer key, worksheet 1 trivia questions bank: Solve ODE by Laplace transform, Laplace transform introduction, transforms of derivatives and integrals, Laplace transform of hyperbolic functions, inverse Laplace transform examples, application of s-shifting, initial value problems by Laplace transform, Laplace transform of trigonometric functions, general Laplace transform examples, Laplace transform of exponential function, existence and uniqueness of Laplace transforms, Dirac's delta function, unit step function, s-shifting theorem, general Laplace transforms, and Laplace transform linearity. Solve Separable Ordinary Differential Equation Modeling study guide PDF with answer key, worksheet 1 trivia questions bank: Exponential growth, Boyle Mariette's law, linear accelerators, mixing problem, and radiocarbon dating.

DESIGNS FOR LEARNING ENVIRONMENTS OF THE FUTURE

INTERNATIONAL PERSPECTIVES FROM THE LEARNING SCIENCES

Springer Science & Business Media **Few things are as certain as societal changes—and the pressing need for educators to prepare students with the**

knowledge and ways of thinking necessary for the challenges in a changing world. In the forward-thinking pages of Designs for Learning Environments of the Future, international teams of researchers present emerging developments and findings in learning sciences and technologies at the infrastructure, curricular, and classroom levels. Focusing on ideas about designing innovative environments for learning in areas such as biology, engineering, genetics, mathematics, and computer science, the book surveys a range of learning technologies being explored around the world—a spectrum as diverse as digital media, computer modeling, and 3D virtual worlds—and addresses challenges arising from their design and use. The editors' holistic perspective frames these innovations as not only discrete technologies but as flexible learning environments that foster student engagement, participation, and collaboration. Contributors describe possibilities for teaching and learning in these and other cutting-edge areas: Working with hypermodels and model-based reasoning Using visual representations in teaching abstract concepts Designing strategies for learning in virtual worlds Supporting net-based collaborative teams Integrating innovative learning technologies into schools Developing personal learning communities Designs for Learning Environments of the Future will enhance the work of a wide range of professionals, including researchers and graduate students in the learning and cognitive sciences, and educators in the physical and social sciences.

MODELING AND MEASURING COMPETENCIES IN HIGHER EDUCATION

APPROACHES TO CHALLENGES IN HIGHER EDUCATION POLICY AND PRACTICE

Springer **This publication focuses on competency orientation in higher education, illustrating international assessment practices for measuring student learning outcomes. For Germany, the Modeling and Measuring Competencies in Higher Education (KoKoHs) research program contributes exemplary approaches, and solutions to current challenges in higher education. KoKoHs models and tests can be used for entrance examination, formative and summative assessment of domain-specific and generic competencies and as a basis for developing new teaching-and-learning tools and formats promoting these competencies.**

UNCERTAINTY APPROACHES FOR SPATIAL DATA MODELING AND PROCESSING

A DECISION SUPPORT PERSPECTIVE

Springer **We are facing an immense growth of digital data and information resources, both in terms of size, complexity, modalities and intrusiveness. Almost every aspect of our existence is being digitally captured. This is exemplified by the omnipresent existence of all kinds of data storage, far beyond those stored in traditional relational databases. The spectrum of**

data being digitally stored runs from multimedia data repositories to your purchases in most stores. Every tweet that you broadcast is captured for posterity. Needless to say this situation posses new research opportunities, challenges and problems in the ways we store, manipulate, search, and - in general - make use of such data and information. Attempts to cope with these problems have been emerging all over the world with thousands of people devoted to developing tools and techniques to deal with this new area of research. One of the prominent scholars and researchers in this field was the late Professor Ashley Morris who died suddenly and tragically at a young age. Ashley's career begun in industry, where he specialized in databases.

STEM MODELS OF SUCCESS

PROGRAMS, POLICIES, AND PRACTICES IN THE COMMUNITY COLLEGE

IAP **As the U.S. focuses on positioning itself to retain and advance its status as a world leader in technology and scientific innovation, a recognition that community colleges are a critical site for intervention has become apparent. Community colleges serve the lion’s share of the nation’s postsecondary students. In fact, 40% of all undergraduate students are enrolled in community colleges, these students account for nearly 30% of all STEM undergraduate majors in postsecondary institutions. These students serve as a core element of the STEM pipeline into four-year colleges and universities via the community college transfer function. Moreover, community colleges are the primary postsecondary access point for non-traditional students, including students of color, first-generation, low-income, and adult students. This is a particularly salient point given that these populations are sordidly underrepresented among STEM graduates and in the STEM workforce. Increasing success among these populations can contribute significantly to advancing the nation’s interests in STEM. As such, the community college is situated as an important site for innovative practices that have strong implications for bolstering the nation’s production and sustenance of a STEM labor force. In recognition of this role, the National Science Foundation and private funding agencies have invested millions of dollars into research and programs designed to bolster the STEM pipeline. From this funding and other independently sponsored inquiry, promising programs, initiatives, and research recommendations have been identified. These efforts hold great promise for change, with the potential to transform the education and outcome of STEM students at all levels. This important book discusses many of these promising programs, initiatives, and research-based recommendations that can impact the success of STEM students in the community college. This compilation is timely, on the national landscape, as the federal government has placed increasing importance on improving STEM degree production as a strategy for America’s future stability in an increasingly competitive global marketplace. Informed by research and theory, each chapter in this**

volume blazes new territory in articulating how community colleges can advance outcomes for students in STEM, particularly those from historically underrepresented and underserved communities.

MODELING COMMUNICATION WITH ROBOTS AND VIRTUAL HUMANS

SECOND ZIF RESEARCH GROUP 2005/2006 INTERNATIONAL WORKSHOP ON EMBODIED COMMUNICATION IN HUMANS AND MACHINES, BIELEFELD, GERMANY, APRIL 5-8, 2006, REVISED SELECTED PAPERS

Springer **Embodied agents play an increasingly important role in cognitive interaction technology. The two main types of embodied agents are virtual humans inhabiting simulated environments and humanoid robots inhabiting the real world. So far research on embodied communicative agents has mainly explored their potential for practical applications. However, the design of communicative artificial agents can also be of great heuristic value for the scientific study of communication. It allows researchers to isolate, implement, and test essential properties of inter-agent communications in operational models. Modeling communication with robots and virtual humans thus involves the vision of using communicative machines as research tools. Artificial systems that reproduce certain aspects of natural, multimodal communication help to elucidate the internal mechanisms that give rise to different aspects of communication. In short, constructing embodied agents who are able to communicate may help us to understand the principles of human communication. As a comprehensive theme, “Embodied Communication in Humans and Machines” was taken up by an international research group hosted by Bielefeld University’s Center for Interdisciplinary Research (ZiF – Zentrum für interdisziplinäre Forschung) from October 2005 through September 2006. The overarching goal of this research year was to develop an integrated perspective of embodiment in communication, establishing bridges between lower-level, sensorimotor functions and a range of higher-level, communicative functions involving language and bodily action. The present volume grew out of a workshop that took place during April 5–8, 2006 at the ZiF as a part of the research year on embodied communication.**

CONCEPTS, STRATEGIES AND MODELS TO ENHANCE PHYSICS TEACHING AND LEARNING

Springer **This book discusses novel research on and practices in the field of physics teaching and learning. It gathers selected high-quality studies that were presented at the GIREP-ICPE-EPEC 2017 conference, which was jointly organised by the International Research Group on Physics Teaching (GIREP); European Physical Society – Physics Education Division, and the Physics Education Commission of the International Union of Pure and Applied Physics (IUPAP). The respective chapters address a wide variety of**

topics and approaches, pursued in various contexts and settings, all of which represent valuable contributions to the field of physics education research. Examples include the design of curricula and strategies to develop student competencies—including knowledge, skills, attitudes and values; workshop approaches to teacher education; and pedagogical strategies used to engage and motivate students. This book shares essential insights into current research on physics education and will be of interest to physics teachers, teacher educators and physics education researchers around the world who are working to combine research and practice in physics teaching and learning.

E-BANKING AND EMERGING MULTIDISCIPLINARY PROCESSES: SOCIAL, ECONOMICAL AND ORGANIZATIONAL MODELS

SOCIAL, ECONOMICAL AND ORGANIZATIONAL MODELS

IGI Global **E-Banking and Emerging Multidisciplinary Processes: Social, Economical and Organizational Models advances the knowledge and practice of all facets of electronic banking. This cutting edge publication emphasizes emerging e-banking theories, technologies, strategies, and challenges to stimulate and disseminate information to research, business, and banking communities. It develops a comprehensive framework for e-banking through a multidisciplinary approach, while taking into account the implications it has on traditional banks, businesses, and economies.**

A PRACTICE-BASED MODEL OF STEM TEACHING

STEM STUDENTS ON THE STAGE (SOS)

Springer **The STEM Students on the Stage (SOS)TM model was developed by Harmony Public Schools with the goal of teaching rigorous content in an engaging, fun and effective way. In this book, you will learn that the STEM SOS model is not only helping students learn STEM content and develop 21st-century skills, but also helping teachers improve their classroom climate through increased student-teacher communication and a reduction in classroom management issues. There are at least two ways in which this book is innovative. First, you will find student videos and websites associated with QR codes; readers can use their QR readers to watch student videos related to the content in the chapter and see student e-portfolio samples at their Google sites. This provides the opportunity to see that what is discussed in the book actually happened. Second, the book is not about a theory; it is an actual implemented model that has evolved through the years and has been used in more than 25 schools since 2012. Every year, the model continues to be improved to increase its rigor and ease of implementation for both teachers and students. In addition to using the book as a classroom teacher resource and guide, it can also be used as a textbook in advanced graduate level curriculum and instruction, educational leadership, and STEM education programs.**

Therefore, STEM educators, leaders, pre-service and in-service teachers and graduate students will all benefit from reading this book. Appendices will be one of the favorite aspects of this book for teachers who are constantly looking for ready-to-use student and teacher handouts and activities. Full handouts, including formative and summative assessments materials and grading rubrics, will provide an opportunity for teachers and curriculum directors to understand the ideas and secrets behind the STEM SOS model. Lastly, STEM directors will find this to be one of the best STEM teaching model examples on the market because the model has fully accessible student and teacher handouts, assessment materials, rubrics and hundreds of student products (e-portfolios including video presentations and project brochures) online.

TESTING THE IMPLEMENTATION POTENTIAL OF RESOURCE RECOVERY AND REUSE BUSINESS MODELS

FROM BASELINE SURVEYS TO FEASIBILITY STUDIES AND BUSINESS PLANS

IWMI

ACCELERATED OPPORTUNITY EDUCATION MODELS AND PRACTICES

IGI Global **Higher education is a driving force behind enhancing competitiveness for economies in the global market; however, a myriad of obstacles can pose significant challenges to students seeking such opportunities. Accelerated Opportunity Education Models and Practices is a pivotal reference source for the latest scholarly research on emerging initiatives in academic institutions that implement expedited educational programs across the globe. Examining the benefits that stem from enabling students to complete their university degrees in a shorter timeframe, this book is ideally designed for administrators, researchers, academicians, and educators interested in guidelines and frameworks necessary to provide accelerated education options at the collegiate level.**

DATA-DRIVEN AND MODEL-BASED METHODS FOR FAULT DETECTION AND DIAGNOSIS

Elsevier **Data-Driven and Model-Based Methods for Fault Detection and Diagnosis covers techniques that improve the quality of fault detection and enhance monitoring through chemical and environmental processes. The book provides both the theoretical framework and technical solutions. It starts with a review of relevant literature, proceeds with a detailed description of developed methodologies, and then discusses the results of developed methodologies, and ends with major conclusions reached from the analysis of simulation and experimental studies. The book is an indispensable resource for researchers in academia and industry and practitioners working in chemical and environmental engineering to do**

their work safely. Outlines latent variable based hypothesis testing fault detection techniques to enhance monitoring processes represented by linear or nonlinear input-space models (such as PCA) or input-output models (such as PLS) Explains multiscale latent variable based hypothesis testing fault detection techniques using multiscale representation to help deal with uncertainty in the data and minimize its effect on fault detection Includes interval PCA (IPCA) and interval PLS (IPLS) fault detection methods to enhance the quality of fault detection Provides model-based detection techniques for the improvement of monitoring processes using state estimation-based fault detection approaches Demonstrates the effectiveness of the proposed strategies by conducting simulation and experimental studies on synthetic data

CURRICULUM MODELS FOR THE 21ST CENTURY

USING LEARNING TECHNOLOGIES IN HIGHER EDUCATION

Springer Science & Business Media **Changing student profiles and the increasing availability of mainstream and specialized learning technologies are stretching the traditional face-to-face models of teaching and learning in higher education. Institutions, too, are facing far-reaching systemic changes which are placing strains on existing resources and physical infrastructure and calling into question traditional ways of teaching through lectures and tutorials. And, with an ever-increasing scrutiny on teaching and teachers' accountability for positive educational outcomes, the call for closer attention to learning, teaching and, most especially, to the design and delivery of the curriculum is given increasing relevance and importance. Research provides strong evidence of the potential for technologies to facilitate not only cognition and learning but also to become integral components in the redesign of current curriculum models. Some Universities and individual academics have moved along this pathway, developing new and innovative curriculum, blending pedagogies and technologies to suit their circumstances. Yet, there are others, unsure of the possibilities, the opportunities and constraints in these changing times. Curriculum Models for the 21st Century gives insights into how teaching and learning can be done differently. The focus is on a whole of curriculum approach, looking at theoretical models and examples of practice which capitalize on the potential of technologies to deliver variations and alternatives to the more traditional lecture-based model of University teaching.**

RETHINKING VALUE-ADDED MODELS IN EDUCATION

CRITICAL PERSPECTIVES ON TESTS AND ASSESSMENT-BASED ACCOUNTABILITY

Routledge **Since passage of the of No Child Left Behind Act in 2001, academic researchers, econometricians, and statisticians have been**

exploring various analytical methods of documenting students‘ academic progress over time. Known as value-added models (VAMs), these methods are meant to measure the value a teacher or school adds to student learning from one year to the next. To date, however, there is very little evidence to support the trustworthiness of these models. What is becoming increasingly evident, yet often ignored mainly by policymakers, is that VAMs are 1) unreliable, 2) invalid, 3) nontransparent, 4) unfair, 5) fraught with measurement errors and 6) being inappropriately used to make consequential decisions regarding such things as teacher pay, retention, and termination. Unfortunately, their unintended consequences are not fully recognized at this point either. Given such, the timeliness of this well-researched and thoughtful book cannot be overstated. This book sheds important light on the debate surrounding VAMs and thereby offers states and practitioners a highly important resource from which they can move forward in more research-based ways.

THEORY OF MODELING AND SIMULATION

Academic Press **The increased computational power and software tools available to engineers have increased the use and dependence on modeling and computer simulation throughout the design process. These tools have given engineers the capability of designing highly complex systems and computer architectures that were previously unthinkable. Every complex design project, from integrated circuits, to aerospace vehicles, to industrial manufacturing processes requires these new methods. This book fulfills the essential need of system and control engineers at all levels in understanding modeling and simulation. This book, written as a true text/reference has become a standard sr./graduate level course in all EE departments worldwide and all professionals in this area are required to update their skills. The book provides a rigorous mathematical foundation for modeling and computer simulation. It provides a comprehensive framework for modeling and simulation integrating the various simulation approaches. It covers model formulation, simulation model execution, and the model building process with its key activities model abstraction and model simplification, as well as the organization of model libraries. Emphasis of the book is in particular in integrating discrete event and continuous modeling approaches as well as a new approach for discrete event simulation of continuous processes. The book also discusses simulation execution on parallel and distributed machines and concepts for simulation model realization based on the High Level Architecture (HLA) standard of the Department of Defense. Presents a working foundation necessary for compliance with High Level Architecture (HLA) standards Provides a comprehensive framework for continuous and discrete event modeling and simulation Explores the mathematical foundation of simulation modeling Discusses system morphisms for model abstraction and simplification Presents a new**

approach to discrete event simulation of continuous processes Includes parallel and distributed simulation of discrete event models Presents a concept to achieve simulator interoperability in the form of the DEVS-Bus

CLEANER COMBUSTION AND SUSTAINABLE WORLD

Springer Science & Business Media **Cleaner Combustion and Sustainable World is the proceedings of the 7th International Symposium on Coal Combustion which has a significant international influence. It concerns basic research on coal combustion and clean utilization, techniques and equipments of pulverized coal combustion, techniques and equipments of fluidized bed combustion, basic research and techniques of emission control, basic research and application techniques of carbon capture and storage (CCS), etc. Professor Haiying Qi and Bo Zhao both work at the Tsinghua University, China**

ADVANCES IN NEURAL NETWORKS - ISNN 2007

4TH INTERNATIONAL SYMPOSIUM ON NEUTRAL NETWORKS, ISNN 2007 NANJING, CHINA, JUNE 3-7, 2007. PROCEEDINGS, PART I

Springer **This book is part of a three volume set that constitutes the refereed proceedings of the 4th International Symposium on Neural Networks, ISNN 2007, held in Nanjing, China in June 2007. Coverage includes neural networks for control applications, robotics, data mining and feature extraction, chaos and synchronization, support vector machines, fault diagnosis/detection, image/video processing, and applications of neural networks.**

DESIGN EXAMPLES FOR STRUT-AND-TIE MODELS

TECHNICAL REPORT

fib Fédération internationale du béton **fib Bulletin 61 is a continuation of fib Bulletin 16 (2002). Again the bulletin's main objective is to demonstrate the application of the FIP Recommendations "Practical Design of Structural Concrete", and especially to illustrate the use of strut-and-tie models to design discontinuity regions (D-regions) in concrete structures. Bulletin 61 presents 14 examples, most of which are existing structures built in recent years. Although some of the presented structures can be considered to be quite important and, in some instances, complex, the chosen examples are not intended to be exceptional. The main aim is to look at specific design aspects, by selecting D-regions of the presented structures that are designed and detailed according to the proposed design principles and specifications for the use of strut-and-tie models. Two papers at the end of the bulletin deal with the role of concrete tension fields in modelling with strut-and-tie models, and summarize the experiences gained by the Working Group in applying strut-and-tie models to the examples in the**

bulletin. It is hoped that fib Bulletin 61 will be of interest to engineers involved in the design of concrete structures, supporting the use of more consistent design and detailing tools such as strut-and-tie models.

BIM HANDBOOK

A GUIDE TO BUILDING INFORMATION MODELING FOR OWNERS, DESIGNERS, ENGINEERS, CONTRACTORS, AND FACILITY MANAGERS

John Wiley & Sons **Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM standards and guides A discussion on how various professional roles have expanded through the widespread use and the new avenues of BIM practices and services A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.**

ENVIRONMENTAL AND HYDROLOGICAL SYSTEMS MODELLING

CRC Press **Mathematical modelling has become an indispensable tool for engineers, scientists, planners, decision makers and many other professionals to make predictions of future scenarios as well as real impending events. As the modelling approach and the model to be used are problem specific, no single model or approach can be used to solve all problems, and there are constraints in each situation. Modellers therefore need to have a choice when confronted with constraints such as lack of sufficient data, resources, expertise and time. Environmental and Hydrological Systems Modelling provides the tools needed by presenting different approaches to modelling the water environment over a range of spatial and temporal scales. Their applications are shown with a series of case studies, taken mainly from the Asia-Pacific Region. Coverage includes:**

Population dynamics Reaction kinetics Water quality systems Longitudinal dispersion Time series analysis and forecasting Artificial neural networks Fractals and chaos Dynamical systems Support vector machines Fuzzy logic systems Genetic algorithms and genetic programming This book will be of great value to advanced students, professionals, academics and researchers working in the water environment.

BOND PRICING AND YIELD CURVE MODELING

A STRUCTURAL APPROACH

Rebonato provides an authoritative, clear, and up-to-date explanation of the cutting-edge innovations in affine modeling for government bonds, and provides readers with the precise tools to develop their own models. This book combines precise theory with up-to-date empirical evidence to build, with the minimum mathematical sophistication required for the task, a critical understanding of what drives the government bond market.

ENTERPRISE RESOURCE PLANNING MODELS FOR THE EDUCATION SECTOR: APPLICATIONS AND METHODOLOGIES

APPLICATIONS AND METHODOLOGIES

IGI Global **Even as enterprise resource planning (ERP) continues to play a strategic role in an education sector, educational institutions and universities are facing many challenges in creating strong ERP applications and methods to achieve the expectations of academia. Enterprise Resource Planning Models for the Education Sector: Applications and Methodologies is a comprehensive collection of research which highlights the increasing demand for insight into the challenges faced by educational institutions on the design and development of enterprise resource planning applications. This book is composed of content from management and engineering students, professionals and researchers in the education fields.**

NAVIGATING MODEL MINORITY STEREOTYPES

ASIAN INDIAN YOUTH IN SOUTH ASIAN DIASPORA

Routledge **Though Asian Indians are typically thought of as a "model minority", not much is known about the school experiences of their children. Positive stereotyping of these immigrants and their children often masks educational needs and issues, creates class divides within the Indian-American community, and triggers stress for many Asian Indian students. This volume examines second generation (America-born) and 1.5 generation (foreign-born) Asian Indians as they try to balance peer culture, home life and academics. It explores how, through the acculturation process, these children either take advantage of this positive stereotype or refute their stereotyped ethnic image and move to downward mobility. Focusing on migrant experiences of the Indian diasporas in the United**

States, this volume brings attention to highly motivated Asian Indian students who are overlooked because of their cultural dispositions and outlooks on schooling, and those students who are more likely to underachieve. It highlights the assimilation of Asian Indian students in mainstream society and their understandings of Americanization, social inequality, diversity and multiculturalism.

ARTIFICIAL LIFE MODELS IN SOFTWARE

Springer Science & Business Media **The advent of powerful processing technologies and the advances in software development tools have drastically changed the approach and implementation of computational research in fundamental properties of living systems through simulating and synthesizing biological entities and processes in artificial media. Nowadays realistic physical and physiological simulation of natural and would-be creatures, worlds and societies becomes a low-cost task for ordinary home computers. The progress in technology has dramatically reshaped the structure of the software, the execution of a code, and visualization fundamentals. This has led to the emergence of novel breeds of artificial life software models, including three-dimensional programmable simulation environment, distributed discrete events platforms and multi-agent systems. This second edition reflects the technological and research advancements, and presents the best examples of artificial life software models developed in the World and available for users.**

DEEP LEARNING TECHNIQUES FOR BIOMEDICAL AND HEALTH INFORMATICS

Springer Nature **This book presents a collection of state-of-the-art approaches for deep-learning-based biomedical and health-related applications. The aim of healthcare informatics is to ensure high-quality, efficient health care, and better treatment and quality of life by efficiently analyzing abundant biomedical and healthcare data, including patient data and electronic health records (EHRs), as well as lifestyle problems. In the past, it was common to have a domain expert to develop a model for biomedical or health care applications; however, recent advances in the representation of learning algorithms (deep learning techniques) make it possible to automatically recognize the patterns and represent the given data for the development of such model. This book allows new researchers and practitioners working in the field to quickly understand the best-performing methods. It also enables them to compare different approaches and carry forward their research in an important area that has a direct impact on improving the human life and health. It is intended for researchers, academics, industry professionals, and those at technical institutes and R&D organizations, as well as students working in the fields of machine learning, deep learning, biomedical engineering, health**

informatics, and related fields.

EVIDENCE-BASED DESIGN OF ELEMENTARY AND SECONDARY SCHOOLS

A RESPONSIVE APPROACH TO CREATING LEARNING ENVIRONMENTS

John Wiley & Sons

MODELLING AND APPLICATIONS IN MATHEMATICS EDUCATION

THE 14TH ICMI STUDY

Springer Science & Business Media **The book aims at showing the state-of-the-art in the field of modeling and applications in mathematics education. This is the first volume to do this. The book deals with the question of how key competencies of applications and modeling at the heart of mathematical literacy may be developed; with the roles that applications and modeling may play in mathematics teaching, making mathematics more relevant for students.**

OPERATIONAL MODAL ANALYSIS

MODELING, BAYESIAN INFERENCE, UNCERTAINTY LAWS

Springer **This book presents operational modal analysis (OMA), employing a coherent and comprehensive Bayesian framework for modal identification and covering stochastic modeling, theoretical formulations, computational algorithms, and practical applications. Mathematical similarities and philosophical differences between Bayesian and classical statistical approaches to system identification are discussed, allowing their mathematical tools to be shared and their results correctly interpreted. The authors provide their data freely in the web at https://doi.org/10.7910/DVN/7EVTXG Many chapters can be used as lecture notes for the general topic they cover beyond the OMA context. After an introductory chapter (1), Chapters 2–7 present the general theory of stochastic modeling and analysis of ambient vibrations. Readers are first introduced to the spectral analysis of deterministic time series (2) and structural dynamics (3), which do not require the use of probability concepts. The concepts and techniques in these chapters are subsequently extended to a probabilistic context in Chapter 4 (on stochastic processes) and in Chapter 5 (on stochastic structural dynamics). In turn, Chapter 6 introduces the basics of ambient vibration instrumentation and data characteristics, while Chapter 7 discusses the analysis and simulation of OMA data, covering different types of data encountered in practice. Bayesian and classical statistical approaches to system identification are introduced in a general context in Chapters 8 and 9, respectively. Chapter 10 provides an overview of different Bayesian OMA formulations, followed by a general discussion of computational issues in Chapter 11. Efficient**

algorithms for different contexts are discussed in Chapters 12–14 (single mode, multi-mode, and multi-setup). Intended for readers with a minimal background in mathematics, Chapter 15 presents the 'uncertainty laws' in OMA, one of the latest advances that establish the achievable precision limit of OMA and provide a scientific basis for planning ambient vibration tests. Lastly Chapter 16 discusses the mathematical theory behind the results in Chapter 15, addressing the needs of researchers interested in learning the techniques for further development. Three appendix chapters round out the coverage. This book is primarily intended for graduate/senior undergraduate students and researchers, although practitioners will also find the book a useful reference guide. It covers materials from introductory to advanced level, which are classified accordingly to ensure easy access. Readers with an undergraduate-level background in probability and statistics will find the book an invaluable resource, regardless of whether they are Bayesian or non-Bayesian.

ADVANCES IN DESIGN

Springer Science & Business Media **Advances in Design examines recent advances and innovations in product design paradigms, methods, tools and applications. It presents fifty-two selected papers which were presented at the 14th CIRP International Design Seminar held in May 2004. This book will be bought by postgraduate and senior undergraduate students studying product design. It will also be of interest to researchers and practitioners working in the field of product design.**