<table>
<thead>
<tr>
<th>ISBN</th>
<th>Author</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>978-3-319-54074-0</td>
<td>Abdullaeva</td>
<td>Synthesis of Nanoparticles and Nanomaterials</td>
<td>Biological Approaches</td>
</tr>
<tr>
<td>978-3-319-46438-1</td>
<td>Abdulwahed</td>
<td>Engineering and Technology Talent for Innovation and Knowledge-Based Economies</td>
<td>Competencies, Leadership, and a Roadmap for Implementation</td>
</tr>
<tr>
<td>978-3-319-47713-8</td>
<td>Abraham</td>
<td>Computational Intelligence in Wireless Sensor Networks</td>
<td>Recent Advances and Future Challenges</td>
</tr>
<tr>
<td>978-3-319-53470-1</td>
<td>Acharjya</td>
<td>Internet of Things: Novel Advances and Envisioned Applications</td>
<td></td>
</tr>
<tr>
<td>978-981-10-3119-9</td>
<td>Ahmed</td>
<td>Fuzzy Logic Based Power-Efficient Real-Time Multi-Core System</td>
<td></td>
</tr>
<tr>
<td>978-3-319-52418-4</td>
<td>Akhgar</td>
<td>Application of Social Media in Crisis Management</td>
<td>Advanced Sciences and Technologies for Security Applications</td>
</tr>
<tr>
<td>978-3-319-51904-3</td>
<td>Alor-Hernandez</td>
<td>Current Trends on Knowledge-Based Systems</td>
<td></td>
</tr>
<tr>
<td>978-3-319-45828-1</td>
<td>Alves</td>
<td>Lean Education: An Overview of Current Issues</td>
<td></td>
</tr>
<tr>
<td>978-3-319-44922-7</td>
<td>Angelakis</td>
<td>Designing, Developing, and Facilitating Smart Cities</td>
<td>Urban Design to IoT Solutions</td>
</tr>
<tr>
<td>978-3-319-44861-9</td>
<td>Anis</td>
<td>Nanovate</td>
<td>Commercializing Disruptive Nanotechnologies</td>
</tr>
<tr>
<td>978-3-319-45488-7</td>
<td>Arastoopour</td>
<td>Computational Transport Phenomena of Fluid-Particle Systems</td>
<td></td>
</tr>
<tr>
<td>978-3-319-48952-0</td>
<td>Atanassov</td>
<td>Intuitionistic Fuzzy Logics</td>
<td></td>
</tr>
<tr>
<td>978-3-319-49351-0</td>
<td>Bairaktarova</td>
<td>Creative Ways of Knowing in Engineering</td>
<td></td>
</tr>
<tr>
<td>978-3-319-46638-5</td>
<td>Beier</td>
<td>Simulation Approach Towards Energy Flexible Manufacturing Systems</td>
<td></td>
</tr>
<tr>
<td>978-3-319-50762-0</td>
<td>Belta</td>
<td>Formal Methods for Discrete-Time Dynamical Systems</td>
<td></td>
</tr>
<tr>
<td>978-981-10-3955-3</td>
<td>Bhatti</td>
<td>Emerging Trends in Neuro Engineering and Neural Computation</td>
<td></td>
</tr>
<tr>
<td>978-3-319-47351-2</td>
<td>Bi</td>
<td>Safety Message Broadcast in Vehicular Networks</td>
<td></td>
</tr>
<tr>
<td>978-3-319-39437-4</td>
<td>Bindal</td>
<td>Electronics for Embedded Systems</td>
<td></td>
</tr>
<tr>
<td>978-3-319-51405-5</td>
<td>Bishop</td>
<td>Electro-Chemo-Mechanics of Solids</td>
<td></td>
</tr>
<tr>
<td>978-3-319-49516-3</td>
<td>Borghetti</td>
<td>Tunnel Fire Testing and Modeling</td>
<td>The Morgex North Tunnel Experiment</td>
</tr>
</tbody>
</table>

Springer Rights and Permissions | translations.heidelberg@springer.com
Defining the Medical Imaging Requirements for a Rural Health Center

Foundations of Hardware IP Protection

Evolutionary Multi-Agent Systems

Speech Coding

Probabilistic Approaches for Geotechnical Site Characterization and Slope Stability Analysis

Fuzzy Pictures as Philosophical Problem and Scientific Practice

Physiological Aspects of Legged Terrestrial Locomotion

Slope Earthquake Stability

Optical Character Recognition Systems for Different Languages with Soft Computing

Traffic Measurement for Big Network Data

Parallel Sparse Direct Solver for Integrated Circuit Simulation

Evolution of Motions of a Rigid Body About its Center of Mass

Designing with Xilinx® FPGAs Using Vivado

Artificial Intelligence and Exponential Technologies: Business Models Evolution and New Investment Opportunities

Design of Interpretable Fuzzy Systems

Evolutionary Computation Techniques: A Comparative Perspective

Dynamics of Non-Ideal Mechanical Systems

Model Elements and Network Solutions of Heat, Mass and Momentum Transport Processes

Problems and Solutions in Thermoelasticity and Magneto-thermoelasticity

Signal Analysis of Hindustani Classical Music

Sustainable Machining

Robust Modelling and Simulation

Integration of SIMIO with Coloured Petri Nets

Automatically Ordering Events and Times in Text

Microelectronic Circuit Design for Energy Harvesting Systems

Current Technologies in Vehicular Communication

Conceptual Shape Optimization of Entry Vehicles

Applied to Capsules and Winged Fuselage Vehicles

Springer Rights and Permissions | translations.heidelberg@springer.com
<table>
<thead>
<tr>
<th>ISBN</th>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>978-3-319-50786-6</td>
<td>Dixon</td>
<td>Mixed Convection in Fluid Superposed Porous Layers</td>
</tr>
<tr>
<td>978-3-319-47348-2</td>
<td>Domingues</td>
<td>Optical Fiber Sensors for IoT and Smart Devices</td>
</tr>
<tr>
<td>978-3-319-40623-7</td>
<td>Duriez</td>
<td>Machine Learning Control – Taming Nonlinear Dynamics and Turbulence</td>
</tr>
<tr>
<td>978-3-319-47836-4</td>
<td>Elskar</td>
<td>New Advances on Chaotic Intermittency and its Applications</td>
</tr>
<tr>
<td>978-3-319-47710-7</td>
<td>Engel</td>
<td>A Critical Survey of Biomineralization Control, Mechanisms, Functions and Material Properties</td>
</tr>
<tr>
<td>978-3-319-47390-1</td>
<td>Fan</td>
<td>Capacitively-Coupled Chopper Amplifiers</td>
</tr>
<tr>
<td>978-3-319-49288-9</td>
<td>Fang</td>
<td>Towards Integrating Control and Information Theories From Information-Theoretic Measures to Control Performance Limitations</td>
</tr>
<tr>
<td>978-981-10-3297-4</td>
<td>Feng</td>
<td>Nanomaterial-Based Drug Delivery Carriers for Cancer Therapy</td>
</tr>
<tr>
<td>978-981-10-3676-7</td>
<td>Feng</td>
<td>Robust Control of Linear Descriptor Systems</td>
</tr>
<tr>
<td>978-3-319-47219-5</td>
<td>Filip</td>
<td>Computer-Supported Collaborative Decision-Making</td>
</tr>
<tr>
<td>978-3-319-48543-0</td>
<td>Finkbeiner</td>
<td>Social Media for Knowledge Sharing in Automotive Repair</td>
</tr>
<tr>
<td>978-3-319-49018-2</td>
<td>Forte</td>
<td>Hardware Protection through Obfuscation</td>
</tr>
<tr>
<td>978-3-319-48883-7</td>
<td>Frémond</td>
<td>Models, Simulation, and Experimental Issues in Structural Mechanics</td>
</tr>
<tr>
<td>978-3-319-51561-8</td>
<td>Fujita</td>
<td>Modern Approaches to Agent-based Complex Automated Negotiation</td>
</tr>
<tr>
<td>978-981-10-3715-3</td>
<td>Gao</td>
<td>Multi-wave Electromagnetic-Acoustic Sensing and Imaging</td>
</tr>
<tr>
<td>978-3-319-53311-7</td>
<td>Garcia-Hernandez</td>
<td>Decentralized Neural Control: Application to Robotics</td>
</tr>
<tr>
<td>978-3-319-46124-3</td>
<td>Gaspar</td>
<td>Robust Control Design for Active Driver Assistance Systems A Linear-Parameter-Varying Approach</td>
</tr>
<tr>
<td>978-3-319-47722-0</td>
<td>Gastaldi</td>
<td>In Search of the Next Memory</td>
</tr>
<tr>
<td>978-3-319-52047-6</td>
<td>Ghayvat</td>
<td>Wellness Protocol for Smart Homes An Integrated Framework for Ambient Assisted Living</td>
</tr>
<tr>
<td>978-3-319-43942-6</td>
<td>Ghosh</td>
<td>Dynamic Systems for Everyone Understanding How Our World Works</td>
</tr>
<tr>
<td>978-981-10-3556-2</td>
<td>Ghosh</td>
<td>Pulse Current Gas Metal Arc Welding Characteristics, Control and Applications</td>
</tr>
<tr>
<td>978-3-319-53993-5</td>
<td>Gonzalez</td>
<td>Edge Detection Methods Based on Generalized Type-2 Fuzzy Logic</td>
</tr>
<tr>
<td>978-3-319-45876-2</td>
<td>Goodwin</td>
<td>A Doctorate and Beyond Building a Career in Engineering and the Physical Sciences</td>
</tr>
<tr>
<td>978-3-319-53326-1</td>
<td>Gorodetskiy</td>
<td>Smart Electromechanical Systems: The Central Nervous System</td>
</tr>
<tr>
<td>978-3-319-46872-3</td>
<td>Gouesbet</td>
<td>Generalized Lorenz-Mie Theories</td>
</tr>
<tr>
<td>ISBN</td>
<td>Author</td>
<td>Title</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>978-3-319-53552-4</td>
<td>Govorukha</td>
<td>Fracture Mechanics of Piezoelectric Solids with Interface Cracks</td>
</tr>
<tr>
<td>978-3-319-45831-1</td>
<td>Graw</td>
<td>Modeling Cellular Systems</td>
</tr>
<tr>
<td>978-3-319-51999-9</td>
<td>Guan</td>
<td>FPGA-based Digital Convolution for Wireless Applications</td>
</tr>
<tr>
<td>978-3-319-49285-8</td>
<td>Gül</td>
<td>Robust and Distributed Hypothesis Testing</td>
</tr>
<tr>
<td>978-981-10-3478-7</td>
<td>Habibi Gharakheili</td>
<td>The Role of SDN in Broadband Networks</td>
</tr>
<tr>
<td>978-3-319-49216-2</td>
<td>Halt, Jr.</td>
<td>Intellectual Property and Financing Strategies for Technology Startups</td>
</tr>
<tr>
<td>978-3-319-51221-1</td>
<td>Hartmann</td>
<td>Statics and Influence Functions - from a Modern Perspective</td>
</tr>
<tr>
<td>978-981-10-3733-7</td>
<td>Hinterleitner</td>
<td>Quality of Synthetic Speech</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Perceptual Dimensions, Influencing Factors, and Instrumental Assessment</td>
</tr>
<tr>
<td>978-3-319-47345-1</td>
<td>Ho</td>
<td>Long Term Evolution in Unlicensed Bands</td>
</tr>
<tr>
<td>978-3-7091-1906-8</td>
<td>Hoag</td>
<td>Vehicular Engine Design</td>
</tr>
<tr>
<td>978-3-662-53391-8</td>
<td>Hodulak</td>
<td>Global Corporate Workplaces</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Implementing New Global Workplace Standards in a Local Context</td>
</tr>
<tr>
<td>978-3-319-52490-0</td>
<td>Hosseinian-Far</td>
<td>Strategic Engineering for Cloud Computing and Big Data Analytics</td>
</tr>
<tr>
<td>978-3-319-52750-5</td>
<td>Hoňko</td>
<td>Granular-Relational Data Mining</td>
</tr>
<tr>
<td></td>
<td></td>
<td>How to Mine Relational Data in the Paradigm of Granular Computing?</td>
</tr>
<tr>
<td>978-3-319-45040-7</td>
<td>Huang</td>
<td>A Concise Introduction to Mechanics of Rigid Bodies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multidisciplinary Engineering</td>
</tr>
<tr>
<td>978-3-319-49678-8</td>
<td>Hussain</td>
<td>Computing Platforms for Software-Defined Radio</td>
</tr>
<tr>
<td>978-3-319-52550-1</td>
<td>Iordache</td>
<td>Implementing Polytope Projects for Smart Systems</td>
</tr>
<tr>
<td>978-3-319-43079-9</td>
<td>Irschik</td>
<td>Dynamics and Control of Advanced Structures and Machines</td>
</tr>
<tr>
<td>978-3-319-53900-3</td>
<td>Ito</td>
<td>Theory and Practice in Machining Systems</td>
</tr>
<tr>
<td>978-3-319-39245-5</td>
<td>Jakhù</td>
<td>Space Mining and Its Regulation</td>
</tr>
<tr>
<td>978-3-319-47667-4</td>
<td>Javanbakht</td>
<td>Advanced Finite Element Simulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Application of User with MSC Marc</td>
</tr>
<tr>
<td>978-94-024-0982-6</td>
<td>Kan</td>
<td>Quantitative Methods for Studying Design Protocols</td>
</tr>
<tr>
<td>978-3-319-52889-2</td>
<td>Karagözolu</td>
<td>Science and Technology from Global and Historical Perspectives</td>
</tr>
<tr>
<td>978-81-322-3689-4</td>
<td>Kaushal</td>
<td>Free Space Optical Communication</td>
</tr>
<tr>
<td>978-981-10-2719-2</td>
<td>Kaushik</td>
<td>Next Generation Spin Torque Memories</td>
</tr>
<tr>
<td>978-3-319-47544-8</td>
<td>Khattab</td>
<td>RFID Security</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A Lightweight Paradigm</td>
</tr>
<tr>
<td>978-3-319-50285-4</td>
<td>Kim</td>
<td>Microscale Soft Robotics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motivations, Progress, and Outlook</td>
</tr>
<tr>
<td>978-3-319-45374-3</td>
<td>Knothe</td>
<td>Rail Vehicle Dynamics</td>
</tr>
</tbody>
</table>

Springer Rights and Permissions | translations.heidelberg@springer.com
<table>
<thead>
<tr>
<th>ISBN</th>
<th>Author</th>
<th>Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>978-4-431-55974-0</td>
<td>Kobatake</td>
<td><strong>Computational Anatomy Based on Whole Body Imaging</strong></td>
<td>Basic Principles of Computer-Assisted Diagnosis and Therapy</td>
</tr>
<tr>
<td>978-3-319-53726-9</td>
<td>Kobryń</td>
<td><strong>Transition Curves for Highway Geometric Design</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-53510-4</td>
<td>Kompanichenko</td>
<td><strong>Thermodynamic Inversion</strong></td>
<td>Origin of Living Systems</td>
</tr>
<tr>
<td>978-3-319-50489-6</td>
<td>Koprowski</td>
<td><strong>Processing of Hyperspectral Medical Images</strong></td>
<td>Applications in Dermatology Using Matlab*</td>
</tr>
<tr>
<td>978-3-319-47499-1</td>
<td>Kottapalli</td>
<td><strong>Biomimetic Microsensors Inspired by Marine Life</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-53611-8</td>
<td>Kovacevic</td>
<td><strong>Robust Digital Processing of Speech Signals</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-52155-8</td>
<td>Kramer</td>
<td><strong>Genetic Algorithm Essentials</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-52176-3</td>
<td>Klos</td>
<td><strong>Mathematical Models of Electrical Network Systems</strong></td>
<td>Theory and Applications - An Introduction</td>
</tr>
<tr>
<td>978-3-319-47466-3</td>
<td>L'Afflitto</td>
<td><strong>A Mathematical Perspective on Flight Dynamics and Control</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-53882-2</td>
<td>LaMeres</td>
<td><strong>Introduction to Logic Circuits &amp; Logic Design with Verilog</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-53507-4</td>
<td>Last</td>
<td><strong>From Global to Local Statistical Shape Priors</strong></td>
<td>Novel Methods to Obtain Accurate Reconstruction Results with a Limited Amount of Training Shapes</td>
</tr>
<tr>
<td>978-3-319-51471-0</td>
<td>Lee</td>
<td><strong>Applied Computing and Information Technology</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-47198-3</td>
<td>Li</td>
<td><strong>Control and Filtering for Semi-Markovian Jump Systems</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-48289-7</td>
<td>Li</td>
<td><strong>Robust Receding Horizon Control for Networked and Distributed Nonlinear Systems</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-51327-0</td>
<td>Lin</td>
<td><strong>Security-Aware Design for Cyber-Physical Systems</strong></td>
<td>A Platform-Based Approach</td>
</tr>
<tr>
<td>978-3-319-53431-2</td>
<td>Lipnicki</td>
<td><strong>Dynamics of Liquid Solidification</strong></td>
<td>Thermal Resistance of Contact Layer</td>
</tr>
<tr>
<td>978-3-658-14840-9</td>
<td>Luntovskyy</td>
<td><strong>Architectural Transformations in Network Services and Distributed Systems</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-42777-5</td>
<td>Luo</td>
<td><strong>Memorized Discrete Systems and Time-delay</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-48337-5</td>
<td>Ma</td>
<td><strong>Non-logic Devices in Logic Processes</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-53398-8</td>
<td>Machado</td>
<td><strong>Competencies and (Global) Talent Management</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-51447-5</td>
<td>Mahjoubfar</td>
<td><strong>Artificial Intelligence in Label-free Microscopy</strong></td>
<td>Biological Cell Classification by Time Stretch</td>
</tr>
<tr>
<td>978-981-10-2953-0</td>
<td>Mandal</td>
<td><strong>Ship Construction and Welding</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-48985-8</td>
<td>Mansutti</td>
<td><strong>Tactile Display for Virtual 3D Shape Rendering</strong></td>
<td></td>
</tr>
<tr>
<td>978-3-319-51224-2</td>
<td>Marchioli</td>
<td><strong>Collective Dynamics of Particles</strong></td>
<td>From Viscous to Turbulent Flows</td>
</tr>
</tbody>
</table>

Springer Rights and Permissions | translations.heidelberg@springer.com
<table>
<thead>
<tr>
<th>Code</th>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>978-3-319-47201-0</td>
<td>Masson</td>
<td>Broadband Wireless Communications for Railway Applications</td>
</tr>
<tr>
<td>978-3-662-53447-2</td>
<td>Maurer</td>
<td>Complexity Management in Engineering Design – a Primer</td>
</tr>
<tr>
<td>978-3-319-51734-6</td>
<td>Micheloni</td>
<td>Solid-State-Drives (SSDs) Modeling</td>
</tr>
<tr>
<td>978-3-319-46698-9</td>
<td>Mishra</td>
<td>Compressive Sensing Based Algorithms for Electronic Defence</td>
</tr>
<tr>
<td>978-3-319-49024-3</td>
<td>Mishra</td>
<td>Hardware IP Security and Trust</td>
</tr>
<tr>
<td>978-3-319-54252-2</td>
<td>Mitra</td>
<td>Short Pulse Laser Systems for Biomedical Applications</td>
</tr>
<tr>
<td>978-3-319-46069-7</td>
<td>Moghaddam</td>
<td>Best Matching Theory &amp; Applications</td>
</tr>
<tr>
<td>978-3-319-29961-7</td>
<td>Moridi</td>
<td>Powder Consolidation Using Cold Spray</td>
</tr>
<tr>
<td>978-3-319-51666-0</td>
<td>Mostafa</td>
<td>Computational Intelligence Applications to Option Pricing, Volatility Forecasting and Value at Risk</td>
</tr>
<tr>
<td>978-981-287-968-4</td>
<td>Mughal</td>
<td>A Parametric Framework for Modelling of Bioelectrical Signals</td>
</tr>
<tr>
<td>978-81-322-3698-6</td>
<td>Mukherjee</td>
<td>Supplier Selection</td>
</tr>
<tr>
<td>978-981-10-3511-1</td>
<td>Mustafa</td>
<td>Green Symbiotic Cloud Communications</td>
</tr>
<tr>
<td>978-981-10-3414-5</td>
<td>Narayan</td>
<td>FDTD Modeling of EM Field inside Microwave Cavities</td>
</tr>
<tr>
<td>978-3-319-46163-2</td>
<td>Nemiche</td>
<td>Advances in Complex Societal, Environmental and Engineered Systems</td>
</tr>
<tr>
<td>978-3-319-53105-2</td>
<td>Nguyen</td>
<td>Design of CMOS RFIC Ultra-Wideband Impulse Transmitter and Receiver</td>
</tr>
<tr>
<td>978-3-319-47056-6</td>
<td>Nielsen</td>
<td>Computational Information Geometry</td>
</tr>
<tr>
<td>978-981-10-1961-6</td>
<td>Nijholt</td>
<td>Playable Cities</td>
</tr>
<tr>
<td>978-3-319-50426-1</td>
<td>Nurmi</td>
<td>Multi-Technology Positioning</td>
</tr>
<tr>
<td>978-3-319-48549-2</td>
<td>Oliva</td>
<td>Advances and Applications of Optimised Algorithms in Image Processing</td>
</tr>
<tr>
<td>978-3-319-46626-2</td>
<td>Palani</td>
<td>Inverter-Based Circuit Design Techniques for Low Supply Voltages</td>
</tr>
<tr>
<td>978-3-319-53146-5</td>
<td>Pandit</td>
<td>Spectrum Sharing in Cognitive Radio Networks</td>
</tr>
<tr>
<td>978-3-319-50387-5</td>
<td>Parsaeefard</td>
<td>Robust Resource Allocation in Future Wireless Networks</td>
</tr>
<tr>
<td>978-3-319-47761-9</td>
<td>Pavlovic</td>
<td>Animal and Plant Stem Cells</td>
</tr>
<tr>
<td>978-3-319-46791-7</td>
<td>Pessoa</td>
<td>The Lean Product Design and Development Journey</td>
</tr>
</tbody>
</table>

Springer Rights and Permissions | translations.heidelberg@springer.com
<table>
<thead>
<tr>
<th>ISBN</th>
<th>Author/Editor</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>978-3-319-52976-9</td>
<td>Peña-Ayala</td>
<td>Learning Analytics: Fundaments, Applications, and Trends</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A View of the Current State of the Art to Enhance e-Learning</td>
</tr>
<tr>
<td>978-3-319-47207-2</td>
<td>Pelech-Pilichowski</td>
<td>Advances in Business ICT: New Ideas from Ongoing Research</td>
</tr>
<tr>
<td>978-3-319-53720-7</td>
<td>Pham</td>
<td>Systems with Hidden Attractors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From Theory to Realization in Circuits</td>
</tr>
<tr>
<td>978-981-10-2731-4</td>
<td>Poluri</td>
<td>Protein Engineering Techniques</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gateways to Synthetic Protein Universe</td>
</tr>
<tr>
<td>978-3-662-53080-1</td>
<td>Popov</td>
<td>Contact Mechanics and Friction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Principles and Applications</td>
</tr>
<tr>
<td>978-3-319-48898-1</td>
<td>Posser</td>
<td>Electromigration Inside Logic Cells</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Modeling, Analyzing and Mitigating Signal Electromigration in NanoCMOS</td>
</tr>
<tr>
<td>978-3-319-47318-5</td>
<td>Postolache</td>
<td>Sensors for Everyday Life</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Healthcare Settings</td>
</tr>
<tr>
<td>978-3-319-50264-9</td>
<td>Psarros</td>
<td>Energy Efficiency Clauses in Charter Party Agreements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Legal and Economic Perspectives and their Application to Ocean Grain Transport</td>
</tr>
<tr>
<td>978-3-319-54222-5</td>
<td>Radivojević</td>
<td>The Emerging WDM EPON</td>
</tr>
<tr>
<td>978-3-319-52547-1</td>
<td>Radojcic</td>
<td>More-than-Moore 2.5D and 3D SiP Integration</td>
</tr>
<tr>
<td>978-3-319-53767-2</td>
<td>Rahimi</td>
<td>From Variability Tolerance to Approximate Computing in Parallel Integrated Architectures and Accelerators</td>
</tr>
<tr>
<td>978-3-319-31594-2</td>
<td>Rahmani</td>
<td>The Dark Side of Silicon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Efficient Computing in the Dark Silicon Era</td>
</tr>
<tr>
<td>978-3-319-48874-5</td>
<td>Ram</td>
<td>Advances in Reliability and System Engineering</td>
</tr>
<tr>
<td>978-3-319-47378-9</td>
<td>Rana</td>
<td>Renewable Biofuels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bioconversion of Lignocellulosic Biomass by Microbial Community</td>
</tr>
<tr>
<td>978-3-319-46381-0</td>
<td>Rao</td>
<td>Simulation Based Engineering in Fluid Flow Design</td>
</tr>
<tr>
<td>978-3-319-47613-1</td>
<td>Rao</td>
<td>Simulation Based Engineering in Solid Mechanics</td>
</tr>
<tr>
<td>978-3-319-49219-3</td>
<td>Rao</td>
<td>Speech Recognition Using Articulatory and Excitation Source Features</td>
</tr>
<tr>
<td>978-3-319-44858-9</td>
<td>Rayes</td>
<td>Internet of Things From Hype to Reality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Road to Digitization</td>
</tr>
<tr>
<td>978-3-662-53743-5</td>
<td>Remagnino</td>
<td>Computational Botany</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methods for Automated Species Identification</td>
</tr>
<tr>
<td>978-3-319-41299-3</td>
<td>Reynoso Meza</td>
<td>Controller Tuning with Evolutionary Multiobjective Optimization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A Holistic Multi-objective Optimization Design Procedure</td>
</tr>
</tbody>
</table>

Springer Rights and Permissions | translations.heidelberg@springer.com
Robertazzi | Introduction to Computer Networking
Roldán Serrano | Concentrating Solar Thermal Technologies
Rosário Lucas | Efficient Predictive Algorithms for Image Compression
Rout | Active Metamaterials
Rubtsov | Key Factors of Combustion
Rusiński | Surface Mining Machines
Santin | Control and Decision Strategies in Wastewater Treatment Plants for Operation Improvement
Sapaty | Managing Distributed Dynamic Systems with Spatial Grasp Technology
Scheinker | Model-Free Stabilization by Extremum Seeking
Seedhouse | Spaceports Around the World, A Global Growth Industry
Seyedi | A Novel Intrabody Communication Transceiver for Biomedical Applications
Shen | Fault Diagnosis and Fault-Tolerant Control Based on Adaptive Control Approach
Sheng | Advances in Transitional Flow Modeling
Shi | Signal Interference in WiFi and ZigBee Networks
Shukla | Fundamentals of Fibre-Reinforced Soil Engineering
Simon | Dimensional Analysis for Engineers
Singh | Steel Fiber Reinforced Concrete
Sivakumar Babu | Sustainability Issues in Civil Engineering
Sklavos | Hardware Security and Trust
Small | Electronic Control Fires
Song | Protocol Design and Analysis for Cooperative Wireless Networks
Stein Shiromoto | Design and Analysis of Control Systems
<table>
<thead>
<tr>
<th>ISBN</th>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>978-981-10-3796-2</td>
<td>Sumbatyan</td>
<td>Wave Dynamics and Composite Mechanics for Microstructured Materials and Metamaterials</td>
</tr>
<tr>
<td>978-3-319-25481-4</td>
<td>Suresh Paul</td>
<td>Understanding Phase Contrast MR Angiography</td>
</tr>
<tr>
<td>978-81-322-3701-3</td>
<td>Suri</td>
<td>Advances in Neuromorphic Hardware Exploiting Emerging Nanoscale Devices</td>
</tr>
<tr>
<td>978-981-10-3285-1</td>
<td>Syahrom</td>
<td>Quantitative and Qualitative Factors that Leads to Slip and Fall Incidents</td>
</tr>
<tr>
<td>978-3-319-45861-8</td>
<td>Tang</td>
<td>Optimal Charging Control of Electric Vehicles in Smart Grids</td>
</tr>
<tr>
<td>978-3-319-51462-8</td>
<td>Tarnowska</td>
<td>Decision Support System for Diagnosis and Treatment of Hearing Disorders</td>
</tr>
<tr>
<td>978-981-10-3282-0</td>
<td>Tasnim</td>
<td>Frontiers in Nano-therapeutics</td>
</tr>
<tr>
<td>978-3-319-52949-3</td>
<td>Tepljakov</td>
<td>Fractional-order Modeling and Control of Dynamic Systems</td>
</tr>
<tr>
<td>978-3-319-47616-2</td>
<td>Thuemmler</td>
<td>Health 4.0: How Virtualization and Big Data are Revolutionizing Healthcare</td>
</tr>
<tr>
<td>978-3-319-51800-8</td>
<td>Traczyk</td>
<td>Digital Preservation: Putting It to Work</td>
</tr>
<tr>
<td>978-3-319-48946-9</td>
<td>Traore</td>
<td>Information Security Practices</td>
</tr>
<tr>
<td>978-3-319-53608-8</td>
<td>Valentini</td>
<td>Achieving Consensus in Robot Swarms</td>
</tr>
<tr>
<td>978-981-10-2835-9</td>
<td>Wang</td>
<td>Dual-Polarization Two-Port Fiber-Optic Gyroscope</td>
</tr>
<tr>
<td>978-3-319-53164-9</td>
<td>Watzenig</td>
<td>Comprehensive Energy Management – Eco Routing &amp; Velocity Profiles</td>
</tr>
<tr>
<td>978-3-319-51354-6</td>
<td>Wen</td>
<td>Index Modulation for 5G Wireless Communications</td>
</tr>
<tr>
<td>978-981-10-3850-1</td>
<td>Westermann</td>
<td>User Acceptance of Mobile Notifications</td>
</tr>
<tr>
<td>978-3-319-49970-3</td>
<td>Whiteley</td>
<td>Finite Element Methods</td>
</tr>
<tr>
<td>978-3-319-46800-6</td>
<td>Wieczorek</td>
<td>Grammatical Inference</td>
</tr>
<tr>
<td>978-3-319-47123-5</td>
<td>Wills</td>
<td>Development of a Cyber Physical System for Fire Safety</td>
</tr>
<tr>
<td>978-981-10-2500-6</td>
<td>Wu</td>
<td>Variational Methods in Molecular Modeling</td>
</tr>
<tr>
<td>978-3-319-51036-1</td>
<td>Wu</td>
<td>Radio Resource Management for Mobile Traffic Offloading in Heterogeneous Cellular Networks</td>
</tr>
<tr>
<td>978-3-662-53985-9</td>
<td>Xiao</td>
<td>Recycled Aggregate Concrete Structures</td>
</tr>
<tr>
<td>978-3-319-52883-0</td>
<td>Xie</td>
<td>Biomechatronics in Medical Rehabilitation</td>
</tr>
<tr>
<td>978-3-319-47628-5</td>
<td>Xu</td>
<td>Cellular Image Classification</td>
</tr>
<tr>
<td>978-981-10-2602-7</td>
<td>Yan</td>
<td>Dynamics and Control of Lorentz-Augmented Spacecraft Relative Motion</td>
</tr>
<tr>
<td>ISBN</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>978-3-662-54062-6</td>
<td>Yang</td>
<td>Dynamics and Design of Space Nets for Orbital Capture</td>
</tr>
<tr>
<td>978-3-319-49336-7</td>
<td>Yilmaz</td>
<td>Wireless Power Transfer and Data Communication for Neural Implants Case Study: Epilepsy Monitoring</td>
</tr>
<tr>
<td>978-3-319-54312-3</td>
<td>Yu</td>
<td>Neuro-inspired Computing Using Resistive Synaptic Devices</td>
</tr>
<tr>
<td>978-981-10-3562-3</td>
<td>Zarepour</td>
<td>SPIONs as Nano-Theranostics Agents</td>
</tr>
<tr>
<td>978-981-10-1108-5</td>
<td>Zawidzki</td>
<td>Discrete Optimization in Architecture Building Envelope</td>
</tr>
<tr>
<td>978-981-10-1105-4</td>
<td>Zawidzki</td>
<td>Discrete Optimization in Architecture Architectural &amp; Urban Layout</td>
</tr>
<tr>
<td>978-981-10-1390-4</td>
<td>Zawidzki</td>
<td>Discrete Optimization in Architecture</td>
</tr>
<tr>
<td>978-3-319-47014-6</td>
<td>Zhan</td>
<td>Formal Verification of Simulink/Stateflow Diagrams A Deductive Approach</td>
</tr>
<tr>
<td>978-3-319-53122-9</td>
<td>Zhang</td>
<td>Filtering and Control of Wireless Networked Systems</td>
</tr>
<tr>
<td>978-3-319-53770-2</td>
<td>Zhang</td>
<td>Resource Management for Energy and Spectrum Harvesting Sensor Networks</td>
</tr>
<tr>
<td>978-1-4939-6717-9</td>
<td>Zhang</td>
<td>Resource Management for Multimedia Services in High Data Rate Wireless Networks</td>
</tr>
<tr>
<td>978-3-319-42783-6</td>
<td>Zhao</td>
<td>Advanced Sensing Techniques for Cognitive Radio</td>
</tr>
<tr>
<td>978-3-319-44828-2</td>
<td>Zhao</td>
<td>Control Synthesis of Switched Systems</td>
</tr>
<tr>
<td>978-981-10-3010-9</td>
<td>Zhu</td>
<td>Stability Assessment for Underground Excavations and Key Construction Techniques</td>
</tr>
<tr>
<td>978-981-10-3234-9</td>
<td>Zhu</td>
<td>Secure and Privacy-Preserving Data Communication in Internet of Things</td>
</tr>
<tr>
<td>978-3-319-45725-3</td>
<td>Zohuri</td>
<td>Dimensional Analysis Beyond the Pi Theorem</td>
</tr>
<tr>
<td>978-981-10-3763-4</td>
<td>dell'Isola</td>
<td>Mathematical Modelling in Solid Mechanics</td>
</tr>
<tr>
<td>978-981-10-2527-3</td>
<td>laurent</td>
<td>MRI Contrast Agents From Molecules to Particles</td>
</tr>
<tr>
<td>978-981-10-1081-1</td>
<td>Öchsner</td>
<td>Machining, Joining and Modifications of Advanced Materials</td>
</tr>
</tbody>
</table>

Springer Rights and Permissions | translations.heidelberg@springer.com
Synthesis of Nanoparticles and Nanomaterials

Z. Abdullaeva

Biological Approaches

This book covers biological synthesis approaches for nanomaterials and nanoparticles, including introductory material on their structure, phase compositions and morphology, nanomaterials chemical, physical, and biological properties. The chapters of this book describe in sequence the synthesis of various nanoparticles by microorganisms, bacteria, yeast, algae, and actinomycetes; plant and plant extract-based synthesis; and green synthesis methods. Each chapter provides basic knowledge on the synthesis of nanoparticles and nanoparticles, including introduction and theory material on their structure, phase compositions and biological properties. The chapters of this book elaborate bibliography is provided at the end of each chapter. The internet has restructured global interrelations and an unbelievable number of personal characteristics. Machines are getting in on the act to control innumerable autonomous gadgets via internet and create Internet of Things. It facilitates intelligent communication between human and things, and among things.

Internet of Things: Novel Advances and Envisioned Applications

D.P. Acharjya, M.K. Geetha (Eds.)

The present book focuses on a combination of theoretical advancements of Internet of Things, cloud computing and its real life applications to serve society. The book discusses technological advancements, authentication, mobility support and security, group rekeying scheme and many real life applications. An elaborate bibliography is provided at the end of each chapter. The internet has restructured global interrelations and an unbelievable number of personal characteristics. Machines are getting in on the act to control innumerable autonomous gadgets via internet and create Internet of Things. It facilitates intelligent communication between human and things, and among things.

Application of Social Media in Crisis Management

B. Akhgar, D. Waddington, A. Staniforth (Eds.)

This book explores how social media and its advances enables citizens to empower themselves during a crisis. The book addresses the key issues related to crises management and social media as the new platform to assist citizens and first responders dealing with multi-
ple forms of crisis, from major terrorist attacks, larger scale public disorder, large-scale movement of people across borders, and natural disasters. The book is based on the results and knowledge gained during the European Commission ATHENA project which has been addressing critical issues in contemporary crisis management and social media and smart mobile communications. This book is authored by a mix of global [...] More on www.springer.com/978-3-319-52418-4

Hardcover
2017. XIV, 236 p. 61 illus., 59 illus. in color. (Transactions on Computational Science and Computational Intelligence)
▶ 106,99 €
ISBN 978-3-319-52418-4
Erscheinungstermin: April 2, 2017

Current Trends on Knowledge-Based Systems
This book presents innovative and high-quality research on the implementation of conceptual frameworks, strategies, techniques, methodologies, information platforms and models for developing advanced knowledge-based systems and their application in different fields, including Agriculture, Education, Automotive, Electrical Industry, Business Services, Food Manufacturing, Energy Services, Medicine and others. Knowledge-based technologies employ artificial intelligence methods to heuristically address problems that cannot be solved by means of formal techniques. These technologies draw on standard and novel approaches from various disciplines within Computer Science, including Knowledge [...] More on www.springer.com/978-3-319-51904-3

Hardcover
2017. XVII, 179 p. 42 illus.
▶ 123,04 €
ISBN 978-3-319-45828-1
Gewöhnlich versandfertig in 3-5 Werktagen.

Lean Education: An Overview of Current Issues
This edited volume presents a structured approach to a new lean education curriculum, implemented for the education of engineers, managers, administrators as well as human resources developers. The authorship comprises professors and lecturers, trainers and practitioners who educate future professionals in Lean Thinking principles and tools. This edited book provides a platform for authors to share their efforts in building a Body of Knowledge (BoK) for Lean Education. The topological spectrum is state-of-the-art in this field, but the book also includes a glimpse into future developments. This is a highly informative and carefully presented book, providing valuable insight for scholars [...] More on www.springer.com/978-3-319-45828-1

Hardcover
2017. XIV, 179 p. 42 illus.
▶ 123,04 €
ISBN 978-3-319-45828-1
Gewöhnlich versandfertig in 3-5 Werktagen.

Designing, Developing, and Facilitating Smart Cities
Urban Design to IoT Solutions
This book discusses how smart cities strive to deploy and interconnect infrastructures and services to guarantee that authorities and citizens have access to reliable and global customized services. The book addresses the wide range of topics present in the design, development and running of smart cities, ranging from big data management, Internet of Things, and sustainable urban planning. The authors cover - from concept to practice - both the technical aspects of smart cities enabled primarily by the Internet of Things and the socio-economic motivations and impacts of smart city development. The reader will find smart city deployment motivations, technological enablers and [...] More on www.springer.com/978-3-319-44922-7

Hardcover
2017. XV, 336 p. 52 illus., 36 illus. in color.
▶ 138,03 €
ISBN 978-3-319-44922-7
Gewöhnlich versandfertig in 3-5 Werktagen.

Nanovate
Commercializing Disruptive Nanotechnologies
This book introduces readers from diverse backgrounds to the principles underlying nanotechnology, from devices to systems, while also describing in detail how businesses can use nanotechnology to redesign their products and processes, in order to have a clear edge over their competition. The authors include 75 case studies, describing in a highly-accessible manner, real nanotechnology innovations from 15 different industrial sectors. For each case study, the technology or business challenges faced by the company are highlighted, the type of nanotechnology adopted is defined, and the eventual economic and social impact is described. Introduces fundamentals of nanotechnology and its [...] More on www.springer.com/978-3-319-44861-9

Hardcover
2017. XVI, 281 p. 154 illus. in color.
▶ 106,99 €
ISBN 978-3-319-44861-9
Gewöhnlich versandfertig in 3-5 Werktagen.


**Computational Transport Phenomena of Fluid-Particle Systems**

This book concerns the most up-to-date advances in computational transport phenomena (CTP), an emerging tool for the design of gas-solid processes such as fluidized bed systems. The authors examine recent work in kinetic theory and CTP and illustrate gas-solid processes’ many applications in the energy, chemical, pharmaceutical, and food industries. They also discuss the kinetic theory approach in developing constitutive equations for gas-solid flow systems and how it has advanced over the last decade as well as the possibility of obtaining innovative designs for multiphase reactors, such as those needed to capture CO2 from flue gases. Suitable as a concise reference and a textbook...

More on [www.springer.com/978-3-319-45488-7](http://www.springer.com/978-3-319-45488-7)

**Creative Ways of Knowing in Engineering**

This book offers a platform for engineering educators who are interested in implementing a “creative ways of knowing” approach to presenting engineering concepts. The case studies in this book reveal how students learn through creative engagement that includes not only design and build activities, but also creative presentations of learning, such as composing songs, writing poems and short stories, painting and drawing, as well as designing animations and comics. Any engineering educator will find common ground with the authors, who are all experienced engineering and liberal arts professors, who have taken the step to include creative activities and outlets for students learning...

More on [www.springer.com/978-3-319-49351-0](http://www.springer.com/978-3-319-49351-0)

**Intuitionistic Fuzzy Logics**

The book offers a comprehensive survey of intuitionistic fuzzy logics. By reporting on both the author’s research and others’ findings, it provides readers with a complete overview of the field and highlights key issues and open problems, thus suggesting new research directions. Starting with an introduction to the basic elements of intuitionistic fuzzy propositional calculus, it then provides a guide to the use of intuitionistic fuzzy operators and quantifiers, and lastly presents state-of-the-art applications of intuitionistic fuzzy sets. The book is a valuable reference resource for graduate students and researchers alike.

More on [www.springer.com/978-3-319-48952-0](http://www.springer.com/978-3-319-48952-0)

**Simulation Approach Towards Energy Flexible Manufacturing Systems**

This authored monograph provides in-depth analysis and methods for aligning electricity demand of manufacturing systems to VRE supply. The book broaches both long-term system changes and real-time manufacturing execution and control, and the author presents a concept with different options for improved energy flexibility including battery, compressed air and embodied energy storage. The reader will also find a detailed application procedure as well as an implementation into a simulation prototype software. The book concludes with two case studies.

The target audience primarily comprises research experts in the field of green manufacturing systems.

More on [www.springer.com/978-3-319-46638-5](http://www.springer.com/978-3-319-46638-5)

**Formal Methods for Discrete-Time Dynamical Systems**

This book bridges fundamental gaps between control theory and formal methods. Although it focuses on discrete-time linear and piecewise affine systems, it also provides general frameworks for abstraction, analysis, and control of more general models. The book is self-contained, and while some mathematical knowledge is necessary, readers are not expected to have a background in formal methods or control theory. It rigorously defines concepts from formal methods, such as transition systems, temporal logics, model checking and synthesis. It then links these to the infinite state dynamical systems through abstractions that are intuitive and only require basic convex-analysis and...

More on [www.springer.com/978-3-319-50762-0](http://www.springer.com/978-3-319-50762-0)

**Emerging Trends in Neuro Engineering and Neural Computation**

This book focuses on neuro-engineering and neural computing, a multi-disciplinary field of research attracting considerable attention from engineers, neuroscientists, microbiologists and material scientists. It explores a range of topics concerning the design and development of innovative neural and brain interfacing technologies, as well as novel information acquisition and processing algorithms to make sense of the acquired data. The book also highlights emerg-
ing trends and advances regarding the applications of neuro-engineering in real-world scenarios, such as neural prostheses, diagnosis of neural degenerative diseases, deep brain stimulation, biosensors, real neural [...] More on www.springer.com/978-981-10-3955-3

Electronics for Embedded Systems

This book provides semester-length coverage of electronics for embedded systems, covering most common analog and digital circuit-related issues encountered while designing embedded system hardware. It is written for students and young professionals who have basic circuit theory background and want to learn more about passive circuits, diode and bipolar transistor circuits, the state-of-the-art CMOS logic family and its interface with older logic families such as TTL, sensors and sensor physics, operational amplifier circuits to condition sensor signals, data converters and various circuits used in electro-mechanical device control in embedded systems. The book also provides numerous [...] More on www.springer.com/978-3-319-39437-4

Tunnel Fire Testing and Modeling

The Morgex North Tunnel Experiment

This book aims to cast light on all aspects of tunnel fires, based on experimental activities and theoretical and computational fluid dynamics (CFD) analyses. In particular, the authors describe a transient full-scale fire test (~15 MW), explaining how they designed and performed the experimental activity inside the Morgex North tunnel in Italy. The entire organization of the experiment is described, from preliminary evaluations to the solutions found for management of operational difficulties and safety issues. This fire test allowed the collection of different measurements (temperature, air velocity, smoke composition, pollutant species) useful for validating and improving CFD codes [...] More on www.springer.com/978-3-319-49516-3

Defining the Medical Imaging Requirements for a Rural Health Center

This book presents the patient management challenges that rural health centers face, and establishes the criteria for the type of medical imaging services that should be available in such facilities. To make the work of the center’s health practitioners more effective and efficient, the book assesses what health conditions may require medical attention in those centers. Information is provided on how to use basic imaging modalities, such as radiography and ultrasound, emphasizing the need for thoughtful service planning, careful equipment and imaging protocol selection,
continuous staff training, and the implementation of quality control programs. The book is also a valuable resource [...] More on www.springer.com/978-981-10-1611-0

Hardcover
2017. XIV, 150 p. 53 illus., 31 illus. in color.
► 90,94 €
ISBN 978-981-10-1611-0

Gewöhnlich versandfertig in 3-5 Werktagen.

Foundations of Hardware IP Protection

This book provides a comprehensive and up-to-date guide to the design of security-hardened, hardware intellectual property (IP). Readers will learn how IP can be threatened, as well as protected, by using means such as hardware obfuscation/camouflaging, watermarking, fingerprinting (PUF), functional locking, remote activation, hidden transmission of data, hardware Trojan detection, protection against hardware Trojan, use of secure element, ultra-lightweight cryptography, and digital rights management. This book serves as a single-source reference to design space exploration of hardware security and IP protection.

More on www.springer.com/978-3-319-50378-3

Hardcover
► 106,99 €
ISBN 978-3-319-50378-3

Gewöhnlich versandfertig in 3-5 Werktagen.

Evolutionary Multi-Agent Systems From Inspirations to Applications

This book addresses agent-based computing, concentrating in particular on evolutionary multi-agent systems (EMAS), which have been developed since 1996 at the AGH University of Science and Technology in Cracow, Poland. It provides the relevant background information on and a detailed description of this computing paradigm, along with key experimental results. Readers will benefit from the insightful discussion, which primarily concerns the efficient implementation of computing frameworks for developing EMAS and similar computing systems, as well as a detailed formal model. Theoretical deliberations demonstrating that computing with EMAS always helps to find the optimal solution are [...] More on www.springer.com/978-3-319-51387-4

Hardcover
2017. XV, 210 p. 77 illus. (Studies in Computational Intelligence, Band 680)
► 123,04 €
ISBN 978-3-319-51387-4

Gewöhnlich versandfertig in 3-5 Werktagen.

Characterization and Slope Stability Analysis

This is the first book to revisit geotechnical site characterization from a probabilistic point of view and provide rational tools to probabilistically characterize geotechnical properties and underground stratigraphy using limited information obtained from a specific site. This book not only provides new probabilistic approaches for geotechnical site characterization and slope stability analysis, but also tackles the difficulties in practical implementation of these approaches. In addition, this book also develops efficient Monte Carlo simulation approaches for slope stability analysis and implements these approaches in a commonly available spreadsheet environment. These approaches [...] More on www.springer.com/978-3-662-52912-6

Hardcover
2017. XVI, 190 p. 55 illus., 7 illus. in color.
► 123,04 €
ISBN 978-3-662-52912-6

Gewöhnlich versandfertig in 3-5 Werktagen.

Speech Coding
Code Excited Linear Prediction

This book provides scientific understanding of the most central techniques used in speech coding both for advanced students as well as professionals with a background in speech audio and or digital signal processing. It provides a clear connection between the Why’s?, How’s?, and What’s, such that the necessity, purpose and solutions provided by tools should be always within sight, as well as their strengths and weaknesses in each respect. Equivalently, this book sheds light on the following perspectives for each technology presented: Objective: What do we want to achieve and especially why is this goal important? Resource / Information: What information is available and how can it [...] More on www.springer.com/978-3-319-50202-1

Hardcover
2017. XIX, 240 p. 76 illus. (Signals and Communication Technology)
► 106,99 €
ISBN 978-3-319-50202-1

Erscheinungstermin: March 28, 2017

Fuzzy Pictures as Philosophical Problem and Scientific Practice A Study of Visual Vagueness

This book presents a comprehensive discussion on the characterization of vagueness in pictures. It reports on how the problem of representation of images has been approached in scientific practice, highlighting the role of mathematical methods and the philosophical background relevant for issues such as representation, categorization and reasoning. Without delving too much into the technical details, the book examines and defends different kinds of values of fuzziness based on a complex approach to categorization as a practice, adopting conceptual and empirical suggestions from different fields including the arts. It subsequently advances criticisms and provides suggestions for [...] More on www.springer.com/978-3-319-47189-1

Hardcover
2017. XVI, 194 p. 13 illus. (Studies in Fuzziness and Soft Computing, Band 348)
► 93,08 €
ISBN 978-3-319-47189-1

Gewöhnlich versandfertig in 3-5 Werktagen.
G. Cavagna

**Physiological Aspects of Legged Terrestrial Locomotion**

The Motor and the Machine

This book offers a succinct but comprehensive description of the mechanics of muscle contraction and legged terrestrial locomotion. It describes on the one hand how the fundamental properties of muscle tissue affect the mechanics of locomotion, and on the other, how the mechanics of locomotion modify the mechanism of muscle operation under different conditions. Further, the book reports on the design and results of experiments conducted with two goals. The first was to describe the physiological function of muscle tissue (which may be considered as the “motor”) contracting at a constant length, during shortening, during lengthening, and under a condition that occurs most frequently.[...]

More on [www.springer.com/978-3-319-49979-6](http://www.springer.com/978-3-319-49979-6)

**Slope Earthquake Stability**

This book begins with the dynamic characteristics of the covering layerbedrock type slope, containing monitoring data of the seismic array, shaking table tests, numerical analysis and theoretical derivation. Then it focuses on the landslide mechanism and assessment method. It also proposes a model that assessing the hazard area based on the field investigations. Many questions, exercises and solutions are given. Researchers and engineers in the field of Geotechnical Engineering and Anti-seismic Engineering can benefit from it.


A. Chaudhuri, K. Mandaviya, P. Badelia, S. K Ghosh

**Optical Character Recognition Systems for Different Languages with Soft Computing**

The book offers a comprehensive survey of soft-computing models for optical character recognition systems. The various techniques, including fuzzy and rough sets, artificial neural networks and genetic algorithms, are tested using real texts written in different languages, such as English, French, German, Latin, Hindi and Gujrati, which have been extracted by publicly available datasets. The simulation studies, which are reported in details here, show that soft-computing based modeling of OCR systems performs consistently better than traditional models. Mainly intended as state-of-the-art survey for postgraduates and researchers in pattern recognition, optical character recognition.[...]

More on [www.springer.com/978-3-319-50251-9](http://www.springer.com/978-3-319-50251-9)

**Traffic Measurement for Big Network Data**

This book presents several compact and fast methods for online traffic measurement of big network data. It describes challenges of online traffic measurement, discusses the state of the field, and provides an overview of the potential solutions to major problems. The authors introduce the problem of flow size measurement for big network data and present a fast and scalable counter architecture, called Counter Tree, which leverages a two-dimensional counter sharing scheme to achieve far better memory efficiency and significantly extend estimation range. Unlike traditional approaches to cardinality estimation problems that allocate a separated data structure (called estimator) for[...]

More on [www.springer.com/978-978-3-319-47339-0](http://www.springer.com/978-978-3-319-47339-0)

**Parallel Sparse Direct Solver for Integrated Circuit Simulation**

This book describes algorithmic methods and parallelization techniques to design a parallel sparse direct solver which is specifically targeted at integrated circuit simulation problems. The authors describe a complete flow and detailed parallel algorithms of the sparse direct solver. They also show how to improve the performance by simple but effective numerical techniques. The sparse direct solver techniques described can be applied to any SPICE-like integrated circuit simulator and have been proven to be high-performance in actual circuit simulation. Readers will benefit from the state-of-the-art parallel integrated circuit simulation techniques described in this book, especially[...]

More on [www.springer.com/978-3-319-53428-2](http://www.springer.com/978-3-319-53428-2)

**Evolution of Motions of a Rigid Body About its Center of Mass**

The book presents a unified and well-developed approach to the dynamics of angular motions of rigid bodies subjected to perturbation torques of different physical nature. It contains both the basic foundations of the rigid body dynamics and of the asymptotic
method of averaging. The rigorous approach based on the averaging procedure is applicable to bodies with arbitrary ellipsoids of inertia. Action of various perturbation torques, both external (gravitational, aerodynamical, solar pressure) and internal (due to viscous fluid in tanks, elastic and visco-elastic properties of a body) is considered in detail. The book can be used by researchers, engineers and students working in [...] More on www.springer.com/978-3-319-51108-5

Hardcover
2017. VIII, 292 p. 170 illus., 20 illus. in color. (Mathematical Physics)  
➤ 123,04 €  
ISBN 978-3-319-54168-6  
Gewöhnlich versandfertig in 3-5 Werktagen.

Evolutionary Computation Techniques: A Comparative Perspective

This book compares the performance of various evolutionary computation (EC) techniques when they are faced with complex optimization problems extracted from different engineering domains. Particularly focusing on recently developed algorithms, it is designed so that each chapter can be read independently. Several comparisons among EC techniques have been reported in the literature, however, they all suffer from one limitation: their conclusions are based on the performance of popular evolutionary approaches over a set of synthetic functions with exact solutions and well-known behaviors, without considering the application context or including recent developments. In each chapter, at [...] More on www.springer.com/978-3-319-54168-6

Hardcover
2017. XV, 222 p. 74 illus., 33 illus. in color. (Studies in Computational Intelligence, Band 686)  
➤ 123,04 €  
ISBN 978-3-319-51108-5  
Gewöhnlich versandfertig in 3-5 Werktagen.

Designing with Xilinx® FPGAs Using Vivado

This book helps readers to implement their designs on Xilinx® FPGAs. The authors demonstrate how to get the greatest impact from using the Vivado® Design Suite, which delivers a SoC-strength, IP-centric and system-centric, next generation development environment that has been built from the ground up to address the productivity bottlenecks in system-level integration and implementation. This book is a hands-on guide for both users who are new to FPGA designs, as well as those currently using the legacy Xilinx tool set (ISE) but are now moving to Vivado. Throughout the presentation, the authors focus on key concepts, major mechanisms for design entry, and methods to realize the most [...] More on www.springer.com/978-3-319-42437-8

Hardcover
2017. X, 260 p. 141 illus., 3 illus. in color.  
➤ 106,99 €  
ISBN 978-3-319-42437-8  
Gewöhnlich versandfertig in 3-5 Werktagen.

Design of Interpretable Fuzzy Systems

This book shows that the term “interpretability” goes far beyond the concept of readability of a fuzzy set and fuzzy rules. It focuses on novel and precise operators of aggregation, inference, and defuzzification leading to flexible Mamdani-type and logical-type systems that can achieve the required accuracy using a less complex rule base. The individual chapters describe various aspects of interpretability, including appropriate selection of the structure of a fuzzy system, focusing on improving the interpretability of fuzzy systems designed using both gradient-learning and evolutionary algorithms. It also demonstrates how to eliminate various system components, such as inputs, rules [...] More on www.springer.com/978-3-319-52880-9

Hardcover
2017. XI, 196 p. 65 illus. (Studies in Computational Intelligence, Band 684)  
➤ 123,04 €  
Erscheinungstermin: April 23, 2017

Artificial Intelligence and Exponential Technologies: Business Models Evolution and New Investment Opportunities

Artificial Intelligence is a huge breakthrough technology that is changing our world. It requires some degrees of technical skills to be developed and understood, so in this book we are going to first of all define AI and categorize it with a non-technical language. We will explain how we reached this phase and what historically happened to artificial intelligence in the last century. Recent advancements in machine learning, neuroscience, and artificial intelligence technology will be addressed, and new business models introduced for and by artificial intelligence research will be analyzed. Finally, we will describe the investment landscape, through the quite comprehensive study of [...] More on www.springer.com/978-3-319-51549-6

Softcover
2017. IX, 45 p. 15 illus. in color. (SpringerBriefs in Computational Intelligence)  
➤ 53,49 €  
ISBN 978-3-319-51549-6  
Gewöhnlich versandfertig in 3-5 Werktagen.

Design of Interpretable Fuzzy Systems

This book shows that the term “interpretability” goes far beyond the concept of readability of a fuzzy set and fuzzy rules. It focuses on novel and precise operators of aggregation, inference, and defuzzification leading to flexible Mamdani-type and logical-type systems that can achieve the required accuracy using a less complex rule base. The individual chapters describe various aspects of interpretability, including appropriate selection of the structure of a fuzzy system, focusing on improving the interpretability of fuzzy systems designed using both gradient-learning and evolutionary algorithms. It also demonstrates how to eliminate various system components, such as inputs, rules [...] More on www.springer.com/978-3-319-52880-9

Hardcover
2017. XI, 196 p. 65 illus. (Studies in Computational Intelligence, Band 684)  
➤ 123,04 €  
Erscheinungstermin: April 23, 2017
direct applications are illustrated. The book is very useful to those interested in continuum mechanics.
More on www.springer.com/978-3-319-48807-3

Hardcover
2017. XIV, 104 p. 45 illus., 3 illus. in color.
► 58,84 €
ISBN 978-3-319-48807-3
Gewöhnlich versandfertig in 3-5 Werktagen.

Signal Analysis of Hindustani Classical Music

This book presents a comprehensive overview of the basics of Hindustani music and the associated signal analysis and technological developments. It begins with an in-depth introduction to musical signal analysis and its current applications, and then moves on to a detailed discussion of the features involved in understanding the musical meaning of the signal in the context of Hindustani music. The components consist of tones, shruti, scales, pitch duration and stability, raga, gharana and musical instruments. The book covers the various technological developments in this field, supplemented with a number of case studies and their analysis. The book offers new music researchers[...]
More on www.springer.com/978-981-10-3958-4

Hardcover
2017. VII, 264 p. 152 illus., 74 illus. in color. (Signals and Communication Technology)
► ca. 85,59 €
ISBN 978-981-10-3958-4
Erscheinungstermin: May 7, 2017

Automatically Ordering Events and Times in Text
L.R.A. Derczynski

The book offers a detailed guide to temporal ordering, exploring open problems in the field and providing solutions and extensive analysis. It addresses the challenge of automatically ordering events and times in text. Aided by TimeML, it also describes and presents concepts relating to time in easy-to-compute terms. Working out the order that events and times happen has proven difficult for computers, since the language used to discuss time can be vague and complex. Mapping out these concepts for a computational system, which does not have its own inherent idea of time, is, unsurprisingly, tough. Solving this problem enables powerful systems that can plan, reason about events, and[...]
More on www.springer.com/978-3-319-47240-9

Robust Modelling and Simulation Integration of SIMIO with Coloured Petri Nets
I.F. De La Mota, A. Guasch, M. Mujica Mota, M. Angel Piera

This book presents for the first time a methodology that combines the power of a modelling formalism such as colored petri nets with the flexibility of a discrete event program such as SIMIO. Industrial practitioners have seen the growth of simulation as a methodology for tackling problems in which variability is the common denominator. Practically all industrial systems, from manufacturing to aviation are considered stochastic systems. Different modelling techniques have been developed as well as mathematical techniques for formalizing the cause-effect relationships in industrial and complex systems. The methodology in this book illustrates how complexity in modelling can be tackled[...]
More on www.springer.com/978-3-319-53320-9

Hardcover
2017. XVII, 162 p. 112 illus., 70 illus. in color.
► 123,04 €
ISBN 978-3-319-53320-9
Erscheinungstermin: March 24, 2017

Problems and Solutions in Thermoelasticity and Magneto-thermoelasticity
B. Das

This book presents problems and solutions of the mathematical theories of thermoelasticity and magneto-thermoelasticity. The classical, coupled and generalized theories are resolved using the eigenvalue methodology. Different methods of numerical inversion of the Laplace transform are presented and their direct applications are illustrated. The book is very useful to those interested in continuum mechanics.
More on www.springer.com/978-3-662-52929-4

Hardcover
2017. XVII, 251 p. 77 illus., 38 illus. in color. (Heat and Mass Transfer)
► 93,08 €
ISBN 978-3-662-52929-4
Gewöhnlich versandfertig in 3-5 Werktagen.

Model Elements and Network Solutions of Heat, Mass and Momentum Transport Processes
G. Danko

This work provides an enormous contribution to the broad effort of modeling heat, mass and momentum transport in multi-physics problems with the development of new solution approaches. It re-visited the time-honored technique of network application using flow network solutions for all transport process components for a coupled modeling task. The book further provides as formulation of the conservation laws for mass, energy and momentum, specifically for the branches and nodes of transport networks using the combination of the Eulerian and Lagrangean modeling methods. With the extension of Bernoulli’s original concept, a new solution is given for the flow field of viscous and[...]
More on www.springer.com/978-3-319-51959-3

Hardcover
2017. IX, 82 p. 44 illus. (Materials Forming, Machining and Tribology)
► 93,08 €
ISBN 978-3-319-51959-3
Erscheinungstermin: April 2, 2017

Sustainable Machining
J.P. Davim (Ed.)

This book provides an overview on current sustainable machining. Its chapters cover the concept in economic, social and environmental dimensions. It provides the reader with proper ways to handle several pollutants produced during the machining process. The book is useful on both undergraduate and postgraduate levels and it is of interest to all those working with manufacturing and machining technology.
More on www.springer.com/978-3-319-51959-3

G. Danko

Problems and Solutions in Thermoelasticity and Magneto-thermoelasticity

This book presents problems and solutions of the mathematical theories of thermoelasticity and magneto-thermoelasticity. The classical, coupled and generalized theories are resolved using the eigenvalue methodology. Different methods of numerical inversion of the Laplace transform are presented and their direct applications are illustrated. The book is very useful to those interested in continuum mechanics.
More on www.springer.com/978-3-662-52929-4

Hardcover
2017. XVII, 251 p. 77 illus., 38 illus. in color. (Heat and Mass Transfer)
► 93,08 €
ISBN 978-3-662-52929-4
Gewöhnlich versandfertig in 3-5 Werktagen.

Automatically Ordering Events and Times in Text
L.R.A. Derczynski

The book offers a detailed guide to temporal ordering, exploring open problems in the field and providing solutions and extensive analysis. It addresses the challenge of automatically ordering events and times in text. Aided by TimeML, it also describes and presents concepts relating to time in easy-to-compute terms. Working out the order that events and times happen has proven difficult for computers, since the language used to discuss time can be vague and complex. Mapping out these concepts for a computational system, which does not have its own inherent idea of time, is, unsurprisingly, tough. Solving this problem enables powerful systems that can plan, reason about events, and[...]
More on www.springer.com/978-3-319-47240-9

Sustainable Machining
J.P. Davim (Ed.)

This book provides an overview on current sustainable machining. Its chapters cover the concept in economic, social and environmental dimensions. It provides the reader with proper ways to handle several pollutants produced during the machining process. The book is useful on both undergraduate and postgraduate levels and it is of interest to all those working with manufacturing and machining technology.
More on www.springer.com/978-3-319-51959-3

G. Danko

Model Elements and Network Solutions of Heat, Mass and Momentum Transport Processes

This work provides an enormous contribution to the broad effort of modeling heat, mass and momentum transport in multi-physics problems with the development of new solution approaches. It re-visited the time-honored technique of network application using flow network solutions for all transport process components for a coupled modeling task. The book further provides as formulation of the conservation laws for mass, energy and momentum, specifically for the branches and nodes of transport networks using the combination of the Eulerian and Lagrangean modeling methods. With the extension of Bernoulli’s original concept, a new solution is given for the flow field of viscous and[...]
More on www.springer.com/978-3-319-51959-3

Hardcover
2017. IX, 82 p. 44 illus. (Materials Forming, Machining and Tribology)
► 93,08 €
ISBN 978-3-319-51959-3
Erscheinungstermin: April 2, 2017

Sustainable Machining
J.P. Davim (Ed.)

This book provides an overview on current sustainable machining. Its chapters cover the concept in economic, social and environmental dimensions. It provides the reader with proper ways to handle several pollutants produced during the machining process. The book is useful on both undergraduate and postgraduate levels and it is of interest to all those working with manufacturing and machining technology.
More on www.springer.com/978-3-319-51959-3
Microelectronic Circuit Design for Energy Harvesting Systems
This book describes the design of microelectronic circuits for energy harvesting, broadband energy conversion, new methods and technologies for energy conversion. The author also discusses the design of power management circuits and the implementation of voltage regulators. Coverage includes advanced methods in low and high power electronics, as well as principles of micro-scale design based on piezoelectric, electromagnetic and thermoelectric technologies with control and conditioning circuit design.

D. Dirks, E. Mooij
Conceptual Shape Optimization of Entry Vehicles
Applied to Capsules and Winged Fuselage Vehicles
This book covers the parameterization of entry capsules, including Apollo capsules and planetary probes, and winged entry vehicles such as the Space Shuttle and lifting bodies. The aerodynamic modelling is based on a variety of panel methods that take shadowing into account, and it has been validated with flight and wind tunnel data of Apollo and the Space Shuttle. The shape optimization is combined with constrained trajectory analysis, and the multi-objective approach provides the engineer with a Pareto front of optimal shapes. The method detailed in Conceptual Shape Optimization of Entry Vehicles is straightforward, and the output gives the engineer insight in the effect of shape.

G. Dimitrakopoulos
Current Technologies in Vehicular Communication
This book provides a concise and comprehensive overview of vehicular communication technologies. It classifies all relevant standards, protocols and applications, so as to enable the reader to gain a holistic approach towards the subject of vehicular communications. The primary methods are algorithmic processes and simulation results. First, an overview and classification of vehicular technologies is presented. Then, the book focuses on specific applications of V2V and V2I communications. Special attention is given to recent research and development results regarding R&D projects in the field, in cooperation with car manufacturing companies and universities at a global level. Designed for...

J.M. Dixon, F.A. Kulacki
Mixed Convection in Fluid Superposed Porous Layers
This Brief describes and analyzes flow and heat transport over a liquid-saturated porous bed. The porous bed is saturated by a liquid layer and heating takes place from a section of the bottom. The effect on flow patterns of heating from the bottom is shown by calculation, and when the heating is sufficiently strong, the flow is affected through the porous and upper liquid layers. Measurements of the heat transfer rate from the heated section confirm calculations. General heat transfer laws are developed for varying porous bed depths for applications to process industry needs, environmental sciences, and materials processing. Addressing a topic of considerable interest to the research...

M.F.F. Domingues, A. Radwan
Optical Fiber Sensors for IoT and Smart Devices
This brief provides a review of the evolution of optical fiber sensing solutions and related applications. Unique production methods are presented and discussed, highlighting their evolution and analyzing their complexity. Under this scope, this brief presents the existing silica optical fiber sensors and polymer optical fiber sensors solutions, comparing its field of action (sensitivity, accuracy), complexity of manufacture and economic cost. Special attention is given to low-cost production methods. This brief evaluates the different existing techniques, assessing the accuracy
Machine Learning Control – Taming Nonlinear Dynamics and Turbulence

This is the first textbook on a generally applicable control strategy for turbulence and other complex nonlinear systems. The approach of the book employs powerful methods of machine learning for optimal nonlinear control laws. This machine learning control (MLC) is motivated and detailed in Chapters 1 and 2. In Chapter 3, methods of linear control theory are reviewed. In Chapter 4, MLC is shown to reproduce known optimal control laws for linear dynamics (LQR, LQG). In Chapter 5, MLC detects and exploits a strongly nonlinear actuation mechanism of a low-dimensional dynamical system when linear control methods are shown to fail. Experimental control demonstrations from a laminar to a turbulent flow are presented.

More on www.springer.com/978-3-319-40623-7

Hardcover
2017. XXVI, 89 p. 31 illus. (SpringerBriefs in Electrical and Computer Engineering)
► 53,49 €
ISBN 978-3-319-47348-2

Gewöhnlich versandfertig in 3-5 Werktagen.

Towards Integrating Control and Information Theories
From Information-Theoretic Measures to Control Performance Limitations

This book investigates the performance limitation issues in networked feedback systems. The fact that networked feedback systems consist of control and communication devices and systems calls for the integration of control theory and information theory. The primary contributions of this book lie in two aspects: the newly-proposed information-theoretic measures and the newly-discovered control performance limitations. We first propose a number of information notions to facilitate the analysis. Using those notions, classes of performance limitations of networked feedback systems, as well as state estimation systems, are then investigated. In general, the book presents a unique, cohesive view of the data series. Also, the function M(x) is easy to evaluate from the theoretical point of view.

More on www.springer.com/978-3-319-47836-4

Hardcover
2017. XVIII, 197 p. 99 illus., 62 illus. in color.
► 123,04 €
ISBN 978-3-319-47836-4

Gewöhnlich versandfertig in 3-5 Werktagen.

New Advances on Chaotic Intermittency and its Applications

One of the most important routes to chaos is the chaotic intermittency. However, there are many cases that do not agree with the classical theoretical predictions. In this book, an extended theory for intermittency in one-dimensional maps is presented. A new general methodology to evaluate the re-expression probability density function (RPD) is developed in Chapters 5 to 8. The key of this formulation is the introduction of a new function, called M(x), which is used to calculate the RPD function. The function M(x) depends on two integrals. This characteristic reduces the influence on the statistical fluctuations in the data series. Also, the function M(x) is easy to evaluate from theoretical considerations, particularly in power management and biomedical circuit designs.

More on www.springer.com/978-3-319-47390-1

Softcover
2017. VII, 125 p. 107 illus., 15 illus. in color. (Analog Circuits and Signal Processing)
► 93,08 €
ISBN 978-3-319-47390-1

Gewöhnlich versandfertig in 3-5 Werktagen.

Capacitively-Coupled Chopper Amplifiers

This book describes the concept and design of the capacitively-coupled chopper technique, which can be used in precision analog amplifiers. Readers will learn to design power-efficient amplifiers employing this technique, which can be powered by regular low supply voltage such as 2V and possibly having a +/-100V input common-mode voltage input. The authors provide both basic design concepts and detailed design examples, which cover the area of both operational and instrumentation amplifiers for multiple applications, particularly in power management and biomedical circuit designs.

More on www.springer.com/978-981-10-3297-4
results in the domains of methods and key technologies. It is meant[...]
More on www.springer.com/978-3-319-47219-5

Hardcover
2017. XVI, 216 p. 34 illus. (Automation, Collaboration, & E-Services, Band 4)
► 160,49 €
ISBN 978-3-319-47219-5
Gewöhnlich versandfertig in 3-5 Werktagen.

Social Media for Knowledge Sharing in Automotive Repair
This book explores, describes and explains the predictors essential for the acceptance of social media as a digital platform to share professional knowledge in the field of automotive repair in Germany. It reports a rigorous literature review covering key elements of social media, knowledge management and technology acceptance studies. The book assumes a pragmatist approach and applies mixed methods in an exploratory sequential design, combining qualitative and quantitative methods to ensure robust collection and analysis of the collected data. Based on a survey on German automotive repair shops, the author provides a framework, for various stakeholders, to comprehend the motivations[...]
More on www.springer.com/978-3-319-48543-0

Hardcover
2017. XXX, 346 p. 86 illus., 41 illus. in color.
► 160,49 €
ISBN 978-3-319-48543-0
Gewöhnlich versandfertig in 3-5 Werktagen.

Computer-Supported Collaborative Decision-Making
This is a book about how management and control decisions are made by persons who collaborate and possibly use the support of an information system. The decision is the result of human conscious activities aiming at choosing a course of action for attaining a certain objective (or a set of objectives). The act of collaboration implies that several entities who work together and share responsibilities to jointly plan, implement and evaluate a program of activities to achieve the common goals. The book is intended to present a balanced view of the domain to include both well-established concepts and a selection of new
Multi-wave Electromagnetic-Acoustic Sensing and Imaging

This thesis covers a broad range of interdisciplinary topics concerning electromagnetic-acoustic (EM-Acoustic) sensing and imaging, mainly addressing three aspects: fundamental physics, critical biomedical applications, and sensing/imaging system design. From the fundamental physics perspective, it introduces several highly interesting EM-Acoustic sensing and imaging methods, which can potentially provide higher sensitivity, multi-contrast capability, and better imaging performance with less distortion. From the biomedical applications perspective, the thesis introduces useful techniques specifically designed to address selected challenging biomedical applications, delivering rich [...] achieved by a judicious interplay between the individual components, guaranteed by an integrated control mechanism. The integrated control problem is also formalized and solved in the LPV framework. Most important among the [...]
Understanding How Our World Works

Dynamic Systems for Everyone

A. Ghosh

Wellness Protocol for Smart Homes
An Integrated Framework for Ambient Assisted Living

H. Ghayvat, S.C. Mukhopadhyay

Pulse Current Gas Metal Arc Welding
Characteristics, Control and Applications

P.K. Ghosh

A Doctorate and Beyond
Building a Career in Engineering and the Physical Sciences

G.C. Goodwin, S.F. Graebe

Edge Detection Methods Based on Generalized Type-2 Fuzzy Logic

C.I. Gonzalez, P. Melin, J.R. Castro, O. Castillo
Generalized Lorenz-Mie Theories

This book explores generalized Lorenz–Mie theories when the illuminating beam is an electromagnetic arbitrary shaped beam relying on the method of separation of variables. The new edition includes an additional chapter covering the latest advances in both research and applications, which are highly relevant for readers. Although it particularly focuses on the homogeneous sphere, the book also considers other regular particles. It discusses in detail the methods available for evaluating beam shape coefficients describing the illuminating beam. In addition it features applications used in many fields such as optical particle sizing and, more generally, optical particle characterization. More on [www.springer.com/978-3-319-46872-3](http://www.springer.com/978-3-319-46872-3)

Forthcoming

V. Govorukha, M. Kamlah, V. Loboda, Y. Lapusta

Fracture Mechanics of Piezoelectric Solids with Interface Cracks

This book provides a comprehensive study of cracks situated at the interface of two piezoelectric materials. It discusses different electric boundary conditions along the crack faces, in particular the cases of electrically permeable, impermeable, partially permeable, and conducting cracks. The book also elaborates on a new technique for the determination of electromechanical fields at the tips of interface cracks in finite sized piezoceramic bodies of arbitrary shape under different load types. It solves scientific problems of solid mechanics in connection with the investigation of electromechanical fields in piezoceramic bodies with interface cracks, and develops calculation models. More on [www.springer.com/978-3-319-53552-4](http://www.springer.com/978-3-319-53552-4)

Forthcoming

L. Guan

FPGA-based Digital Convolution for Wireless Applications

This book presents essential perspectives on digital convolutions in wireless communications systems and illustrates their corresponding efficient real-time field-programmable gate array (FPGA) implementations. FPGAs or generic all programmable devices will soon become widespread, serving as the “brains” of all types of real-time smart signal processing systems, like smart networks, smart homes and smart cities. The book examines digital convolution by bringing together the following main elements: the fundamental theory behind the mathematical formulation together with corresponding physical phenomena; virtualized algorithm simulation together with benchmark real-time FPGA. More on [www.springer.com/978-3-319-51999-9](http://www.springer.com/978-3-319-51999-9)

Forthcoming

G. Gül

Robust and Distributed Hypothesis Testing

This book generalizes and extends the available theory in robust and decentralized hypothesis testing. In particular, it presents a robust test for modeling errors which is independent from the assumptions that a sufficiently large number of samples is available, and that the distance is the KL-divergence. Here, the distance can be chosen from a much general model, which includes the KL-divergence as a very special case. This is then extended by various means. A minimax robust test that is robust against both outliers as
well as modeling errors is presented. Minimax robustness properties of the given tests are also explicitly proven for fixed sample size and sequential probability.[...]

More on www.springer.com/978-3-319-49285-8

Hardcover
2017. XXI, 141 p. 42 illus., 40 illus. in color. (Lecture Notes in Electrical Engineering, Band 414)
► 93,08 €
ISBN 978-3-319-49285-8
Erscheinungstermin: March 31, 2017

The Role of SDN in Broadband Networks

This thesis focuses on the design and use of software defined networking (SDN) in residential Internet service providers (ISPs), as well as innovative operational models that can be incorporated in broadband ecosystems. Though SDN addresses the challenges for bundled best-effort service provided by broadband operators for users, it does not distinguish between the different types of applications (video streaming, web-browsing, and large file transfers), nor does it cater to the varying needs of different household devices (entertainment tablets, work laptops, or connected appliances). This is a problem for end-users, who want to differentiate between applications and devices; for[...]

More on www.springer.com/978-3-319-49216-2

Hardcover
2017. XV, 256 p. 4 illus.
► 181,89 €
ISBN 978-3-319-49216-2
Gewöhnlich versandfertig in 3-5 Werktagen.

Intellectual Property and Financing Strategies for Technology Startups

This book offers a comprehensive, easy to understand guide for startup entities and developing companies, providing insight on the various sources of funding that are available, how these funding sources are useful at each stage of a company’s development, and offers a comprehensive intellectual property strategy that parallels each stage of development. The IP strategies offered in this book take into consideration the goals that most startups and companies have at each stage of development, as well as the limitations that exist at each stage (i.e., limited available resources earmarked for intellectual property asset development), and provides solutions that startups and companies[...]

More on www.springer.com/978-3-319-51221-1

Hardcover
2017. XII, 343 p. 215 illus.
► 138,03 €
ISBN 978-3-319-51221-1
Erscheinungstermin: March 26, 2017

Quality of Synthetic Speech: Perceptual Dimensions, Influencing Factors, and Instrumental Assessment

This book reviews research towards perceptual quality dimensions of synthetic speech, compares these findings with the state of the art, and derives a set of five universal perceptual quality dimensions for TTS signals. They are: (i) naturalness of voice, (ii) prosodic quality, (iii) fluency and intelligibility, (iv) absence of disturbances, and (v) calmness. Moreover, a test protocol for the efficient identification of those dimensions in a listening test is introduced. Furthermore, several factors influencing these dimensions are examined. In addition, different techniques for the instrumental quality assessment of TTS signals are introduced, reviewed and tested. Finally, the[...]

More on www.springer.com/978-981-10-3733-7

Hardcover
2017. XVI, 160 p. 29 illus. (T-Labs Series in Telecommunication Services)
► 93,08 €
ISBN 978-981-10-3733-7
Erscheinungstermin: March 23, 2017

Statics and Influence Functions - from a Modern Perspective

The book teaches engineers many new things about a classical topic which suddenly is again in the center of interest because of its relevance for finite element analysis, for the accuracy of computational methods. It shows that influence functions play a fundamental role in the finite element analysis of structures and practically all of linear computational mechanics. It also strives to add new and important insights into modern structural analysis and into computational mechanics by establishing the central role of influence functions for the numerical analysis and to lay a new foundation to the energy and variational principles.

More on www.springer.com/978-3-319-51221-1

Hardcover
2017. XII, 343 p. 215 illus.
► 138,03 €
ISBN 978-3-319-51221-1
Erscheinungstermin: March 26, 2017

Long Term Evolution in Unlicensed Bands

This SpringerBrief focuses on the coexistence concerns emerging in LTE networks using unlicensed frequency bands. It provides a comprehensive review on LTE networks and their unavoidable need for enhanced capacity to meet the demands for future applications, including a need for low-cost options. LTE using unlicensed frequency (U-LTE) is then introduced as the most promising solution, and discussed from various perspectives to unveil its benefits, challenges, and requirements for coexistence with the widely-deployed IEEE 802.11/Wi-Fi technology. Meeting these coexistence requirements is the most
Implementing New Global Workplace Standards in a Local Context

This book provides two general granular computing approaches to mining relational data, the first of which uses abstract descriptions of relational objects to build their granular representation, while the second extends existing granular data mining solutions to a relational case. Both approaches make it possible to perform and improve popular data mining tasks such as classification, clustering, and association discovery. How can different relational data mining tasks best be unified? How can the construction process of relational patterns be simplified? How can richer knowledge from relational data be discovered? All these questions can be answered in the same way: by mining.[…]

More on www.springer.com/978-3-319-52750-5

Strategic Engineering for Cloud Computing and Big Data Analytics

This book demonstrates the use of a wide range of strategic engineering concepts, theories and applied case studies to improve the safety, security and sustainability of complex and large-scale engineering and computer systems. It first details the concepts of system design, life cycle, impact assessment and security to show how these ideas can be brought to bear on the modeling, analysis and design of information systems with a focused view on cloud-computing systems and big data analytics. This informative book is a valuable resource for graduate students, researchers and industry-based practitioners working in engineering, information and business systems as well as strategy.

More on www.springer.com/978-3-319-52490-0

Granular-Relational Data Mining

How to Mine Relational Data in the Paradigm of Granular Computing?

This book provides two general granular computing approaches to mining relational data, the first of which uses abstract descriptions of relational objects to build their granular representation, while the second extends existing granular data mining solutions to a relational case. Both approaches make it possible to perform and improve popular data mining tasks such as classification, clustering, and association discovery. How can different relational data mining tasks best be unified? How can the construction process of relational patterns be simplified? How can richer knowledge from relational data be discovered? All these questions can be answered in the same way: by mining.[…]

More on www.springer.com/978-3-319-52750-5

Vehicular Engine Design

This book provides an introduction to the design and mechanical development of reciprocating piston engines for vehicular applications. Beginning from the determination of required displacement and performance, coverage moves into engine configuration and architecture. Critical layout dimensions and design trade-offs are then presented for pistons, crankshafts, engine blocks, camshafts, valves, and manifolds. Coverage continues with material strength and casting process selection for the cylinder block and cylinder heads. Each major engine component and sub-system is then taken up in turn, from lubrication system, to cooling system, to intake and exhaust systems, to NVH. For this[…]

More on www.springer.com/978-3-7091-1858-0

A. Hosseinion-Far, M. Ramachandran, D. Sarwar (Eds.)

Multidisciplinary Engineering

This updated second edition broadens the explanation of rotational kinematics and dynamics — the most important aspect of rigid body motion in three-dimensional space and a topic of much greater complexity than linear motion. It expands treatment of vector and matrix, and includes quaternion operations to describe and analyze rigid body motion which are found in robot control, trajectory planning, 3D vision system calibration, and hand-eye coordination of robots in assembly work, etc. It features updated treatments of concepts in all chapters and case studies. The textbook retains its comprehensiveness in coverage and compactness in size, which make it easily accessible to the readers[…]

More on www.springer.com/978-3-319-45040-7

L. Huang
that smart systems be implemented in industry. Polytope[...]
More on www.springer.com/978-3-319-52550-1

Hardcover
2017. XXI, 185 p. 139 illus., in color. (Studies in Systems, Decision and Control, Band 92)
► 160,49 €
ISBN 978-3-319-52550-1
Gewöhnlich versandfertig in 3-5 Werktagen.

Implementing Polytope Projects for Smart Systems

O. Iordache

This book presents a domain of extreme industrial and scientific interest: the study of smart systems and structures. It presents polytope projects as comprehensive physical and cognitive architectures that support the investigation, fabrication and implementation of smart systems and structures. These systems feature multifunctional components that can perform sensing, control, and actuation. In light of the fact that devices, tools, methodologies and organizations based on electronics and information technology for automation, specific to the third industrial revolution, are increasingly reaching their limits, it is essential

More on www.springer.com/978-3-319-49678-8

Computing Platforms for Software-Defined Radio

This book addresses Software-Defined Radio (SDR) baseband processing from the computer architecture point of view, providing a detailed exploration of different computing platforms by classifying different approaches, highlighting the common features related to SDR requirements and by showing pros and cons of the proposed solutions. It covers architectures exploiting parallelism by extending single-processor environment (such as VLIW, SIMD, TTA approaches), multi-core platforms distributing the computation to either a homogeneous array or a set of specialized heterogeneous processors, and architectures exploiting fine-grained, coarse-grained, or hybrid reconfigurability.

More on www.springer.com/978-3-319-53900-3

Space Mining and Its Regulation

This book addresses the complex technical challenges presented by remote space mining in terms of robotics, remote power systems, space transport, IT and communications systems, and more. It also addresses the difficult oversight and regulatory issues that face states and non-state enterprises that would take on the perilous task of obtaining natural resources from the Moon and asteroids. An increasing number of countries are becoming involved in space-related activities that were previously carried out primarily by the United States and the USSR (now the Russian Federation). How these regulatory endeavors might be handled in international treaties, standards, codes of conduct or[...]

More on www.springer.com/978-3-319-39245-5

Dynamics and Control of Advanced Structures and Machines

The papers in this volume present and discuss the frontiers in the mechanics of controlled machines and structures. They are based on papers presented at the International Workshop on Advanced Dynamics and Model Based Control of Structures and Machines held in Vienna in September 2015. The workshop continues a series of international workshops held in Linz (2008) and St. Petersburg (2010).

More on www.springer.com/978-3-319-43079-9

Advanced Finite Element Simulation with MSC Marc

Z. Javanbakht, A. Ochsner

This book offers an in-depth insight into the general-purpose finite element program MSC Marc, which is distributed by MSC Software Corporation. It is a specialized program for nonlinear problems (implicit solver) which is common in academia and
Quantitative Methods for Studying Design Protocols

This book is aimed at researchers and students who would like to engage in and deepen their understanding of design cognition research. The book presents new approaches for analyzing design thinking and proposes methods of measuring design processes. These methods seek to quantify design issues and provide designers with new approaches for analyzing design thinking and have yielded influential and elegant design cognition... More on www.springer.com/978-3-319-47667-4

Free Space Optical Communication

This book provides an in-depth understanding of free space optical (FSO) communication with a particular emphasis on optical beam propagation through atmospheric turbulence. The book is structured in such a way that it provides a basic framework for the beginners and also gives a concise description from a designer’s perspective. The book provides an exposure to FSO technology, fundamental limitations, design methodologies, system trade-offs, acquisition, tracking and pointing (ATP) techniques and link-feasibility analysis. The contents of this book will be of interest to professionals and researchers alike. The book may also be used as a textbook for engineering coursework and... More on www.springer.com/978-3-319-52889-2

Science and Technology from Global and Historical Perspectives

This book provides science and technology ethos to a literate person. It starts with a rather detailed treatment of basic concepts in human values, educational status and domains of education, development of science and technology and their contributions to the welfare of society. It describes ways and means of scientific progresses and technological advancements with their historical perspectives including scientific viewpoints of contributing scientists and technologists. The technical, social, and cultural dimensions are surveyed in relation to acquisition and application of science, and advantages and hindrances of technological developments. Science and Technology is currently... More on www.springer.com/978-3-319-47667-4

Microscale Soft Robotics

This book presents the technological basics and applications of small-scale (mm to sub-mm in length-scales) soft robots and devices, written for researchers in both academia and industry. Author Jaeyoun Kim presents technological motivations, enabling fac-
Computational Anatomy Based on Whole Body Imaging
Basic Principles of Computer-Assisted Diagnosis and Therapy

This book deals with computational anatomy, an emerging discipline recognized in medical science as a derivative of conventional anatomy. It is also a completely new research area on the boundaries of several sciences and technologies, such as medical imaging, computer vision, and applied mathematics. Computational Anatomy Based on Whole Body Imaging highlights the underlying principles, basic theories, and fundamental techniques in computational anatomy, which are derived from conventional anatomy, medical imaging, computer vision, and applied mathematics, in addition to various examples of applications in clinical data. The book will cover topics on the basics and applications of computational anatomy.

Thermodynamic Inversion
Origin of Living Systems

This book discusses the theory, general principles, and energy source conditions allowing for the emergence of life in planetary systems. The author examines the material conditions found in natural hydrothermal sites, the appropriate analogs of prebiotic environments on early Earth. He provides an overview of current laboratory experiments in prebiotic materials chemistry and substantiation of a new direction for the experiments in the origin of life field. Describes thermodynamic inversion and how it relates to the living cell; Examines the current direction of experiments on prebiotic materials chemistry; Introduces and substantiates necessary conditions for the emergence of life.

Transition Curves for Highway Geometric Design

This book provides concise descriptions of the various solutions of transition curves, which can be used in geometric design of roads and highways. It presents mathematical methods and curvature functions for defining transition curves.

Processing of Hyperspectral Medical Images
Applications in Dermatology Using Matlab®

This book presents new methods of analyzing and processing hyperspectral medical images, which can be used in diagnostics, for example for dermatological images. The algorithms proposed are fully automatic and the results obtained are fully reproducible. Their operation was tested on a set of several thousands of hyperspectral images and they were implemented in Matlab. The presented source code can be used without licensing restrictions. This is a valuable resource for computer scientists, bioengineers, doctoral students, and dermatologists interested in contemporary analysis methods.

Rail Vehicle Dynamics

This book on the dynamics of rail vehicles is developed from the manuscripts for a class with the same name at TU Berlin. It is directed mainly to master students with pre-knowledge in mathematics and mechanics and engineers that want to learn more. The important phenomena of the running behaviour of rail vehicles are derived and explained. Also recent research results and experience from the operation of rail vehicles are included. One focus is the description of the complex wheel-rail contact phenomena that are essential to understand the concept of running stability and curving. A reader should in the end be able to understand the background of simulation tools that are used by the researchers, and examples in an inter-linked fashion, making it easy for readers to understand and explore how microscale soft robots are a solution to researchers in search of technological platforms for safe, human-friendly biomedical devices. A compact and timely introduction, this book summarizes not only the enabling factors for soft robots and MEMS devices, but also provides a survey of progress in the field and looks to the future in[...]

More on www.springer.com/978-3-319-50285-4

Softcover
2017. XI, 107 p. 73 illus., 70 illus. in color. (SpringerBriefs in Applied Sciences and Technology)
▶ 53,49 €
ISBN 978-3-319-50285-4
Gewöhnlich versandfertig in 3-5 Werktagen.

H. Kobatake, Y. Masutani (Eds.)

Thermodynamic Inversion
Origin of Living Systems

This book discusses the theory, general principles, and energy source conditions allowing for the emergence of life in planetary systems. The author examines the material conditions found in natural hydrothermal sites, the appropriate analogs of prebiotic environments on early Earth. He provides an overview of current laboratory experiments in prebiotic materials chemistry and substantiation of a new direction for the experiments in the origin of life field. Describes thermodynamic inversion and how it relates to the living cell; Examines the current direction of experiments on prebiotic materials chemistry; Introduces and substantiates necessary conditions for the emergence of life.

More on www.springer.com/978-3-319-53510-4

Hardcover
2017. XIX, 275 p. 85 illus., 48 illus. in color.
▶ 160,49 €
ISBN 978-3-319-53510-4
Erscheinungstermin: April 2, 2017

R. Koprowski

Processing of Hyperspectral Medical Images
Applications in Dermatology Using Matlab®

This book presents new methods of analyzing and processing hyperspectral medical images, which can be used in diagnostics, for example for dermatological images. The algorithms proposed are fully automatic and the results obtained are fully reproducible. Their operation was tested on a set of several thousands of hyperspectral images and they were implemented in Matlab. The presented source code can be used without licensing restrictions. This is a valuable resource for computer scientists, bioengineers, doctoral students, and dermatologists interested in contemporary analysis methods.

More on www.springer.com/978-3-319-50489-6

Hardcover
2017. XIII, 127 p. 56 illus., 54 illus. in color. (Studies in Computational Intelligence, Band 682)
▶ 93,08 €
ISBN 978-3-319-53726-9
Erscheinungstermin: March 27, 2017

R. Koprowski
A.G.P. Kottapalli, M. Asadnia, J. Miao, M.S. Triantafyllou

**Biomimetic Microsensors Inspired by Marine Life**

This book narrates the development of various biomimetic microelectromechanical systems (MEMS) sensors, such as pressure, flow, acceleration, chemical, and tactile sensors, that are inspired by sensing phenomena that exist in marine life. The research described in this book is multi-faceted and combines the expertise and understanding from diverse fields, including biomimetics, microfabrication, sensor engineering, MEMS design, nanotechnology, and material science. A series of chapters examine the design and fabrication of MEMS sensors that function on piezoresistive, piezoelectric, strain gauge, and chemical sensing principles. By translating nature-based engineering solutions to[...]

More on [www.springer.com/978-3-319-52155-8](http://www.springer.com/978-3-319-52155-8)

**Hardcover**
2017. IX, 92 p. 38 illus. (Studies in Computational Intelligence, Band 679)

**Gewöhnlich versandfertig in 3-5 Werktagen.**

O. Kramer

**Genetic Algorithm Essentials**

This book introduces readers to genetic algorithms (GAs) with an emphasis on making the concepts, algorithms, and applications discussed as easy to understand as possible. Further, it avoids a great deal of formalisms and thus opens the subject to a broader audience in comparison to manuscripts overloaded by notations and equations. The book is divided into three parts, the first of which provides an introduction to GAs, starting with basic concepts like evolutionary operators and continuing with an overview of strategies for tuning and controlling parameters. In turn, the second part focuses on solution space variants like multimodal, constrained, and multi-objective solution spaces.[...]

More on [www.springer.com/978-3-319-52155-8](http://www.springer.com/978-3-319-52155-8)

**Gewöhnlich versandfertig in 3-5 Werktagen.**

A. L’Afflitto

**A Mathematical Perspective on Flight Dynamics and Control**

This brief presents several aspects of flight dynamics, which are usually omitted or briefly mentioned in textbooks, in a concise, self-contained, and rigorous manner. The kinematic and dynamic equations of an aircraft are derived starting from the notion of the derivative of a vector and then thoroughly analysed, interpreting their deep meaning from a mathematical standpoint and without relying on physical intuition. Moreover, some classic and advanced control design techniques are presented and illustrated with meaningful examples. Distinguishing features that characterize this brief include a definition of angular velocity, which leaves no room for ambiguities, an improvement on[...]

More on [www.springer.com/978-3-319-47466-3](http://www.springer.com/978-3-319-47466-3)

**Softcover**
2017. XII, 122 p. 19 illus., 14 illus. in color. (SpringerBriefs in Applied Sciences and Technology)

**Gewöhnlich versandfertig in 3-5 Werktagen.**

B.J. LaMeres

**Introduction to Logic Circuits & Logic Design with Verilog**

This textbook for courses in Digital Systems Design introduces students to the fundamental hardware used in modern computers. Coverage includes both the classical approach to digital system design (i.e., pen and paper) in addition to the modern hardware description language (HDL) design approach (computer-based). Using this textbook enables readers to design digital systems using the modern HDL approach, but they have a broad foundation of knowledge of the underlying hardware and theory of their designs. This book is designed to match the way the material is actually taught in the classroom. Topics
For forthcoming books, please check the website of the publisher for updates.

**Applied Computing and Information Technology**

This edited book presents scientific results of the 4th International Conference on Applied Computing and Information Technology (ACIT 2016) which was held on December 12–14, 2016 in Las Vegas, USA. The aim of this conference was to bring together researchers and scientists, businessmen and entrepreneurs, teachers, engineers, computer users, and students to discuss the numerous fields of computer science and to share their experiences and exchange new ideas and information in a meaningful way.

The aim of this conference was also to bring out the research results about all aspects (theory, applications and tools) of computer and information science, and to discuss the practical problems of computer science and to share their experiences and exchange new ideas and information in a meaningful way.

More on www.springer.com/978-3-319-51471-0

**Control and Filtering for Semi-Markovian Jump Systems**

This book presents up-to-date research developments and novel methodologies on semi-Markovian jump systems (S-MJS). It presents solutions to a series of problems with new approaches for the control and filtering of S-MJS, including stability analysis, sliding mode control, dynamic output feedback control, robust filter design, and fault detection. A set of newly developed techniques such as piecewise analysis method, positively invariant set approach, event-triggered method, and cone complementary linearization approaches are presented. Control and Filtering for Semi-Markovian Jump Systems is a comprehensive reference for researchers and practitioners working in control engineering.

More on www.springer.com/978-3-319-47198-3

**Security-Aware Design for Cyber-Physical Systems**

A Platform-Based Approach

Addressing the rising security issues during the design stages of cyber-physical systems, this book develops a systematic approach to address security at early design stages together with all other design constraints. Cyber-attacks become more threatening as systems are becoming more connected with the surrounding environment, infrastructures, and other systems. Security mechanisms can be designed to protect against attacks and meet security requirements, but there are many challenges of applying security mechanisms to cyber-physical systems including open environments, limited resources, strict timing requirements, and large number of devices. Designed for researchers and [...] More on www.springer.com/978-3-319-51327-0

**Robust Receding Horizon Control for Networked and Distributed Nonlinear Systems**

This book offers a comprehensive, easy-to-understand overview of receding-horizon control for nonlinear networks. It presents novel general strategies that can simultaneously handle general nonlinear dynamics, system constraints, and disturbances arising in networked and large-scale systems and which can be widely applied. These receding-horizon-control-based strategies can achieve sub-optimal control performance while ensuring closed-loop stability: a feature attractive to engineers. The authors address the problems of networked and distributed control step-by-step, gradually increasing the level of challenge presented. The book first introduces the state-feedback control problems of [...] More on www.springer.com/978-3-319-48289-7
Architectural Transformations in Network Services and Distributed Systems

With the given work we decided to help not only the readers but ourselves, as the professionals who actively involved in the networking branch, with understanding the trends that have developed in recent two decades in distributed systems and networks. Important architecture transformations of distributed systems have been examined. The examples of new architectural solutions are discussed.

More on www.springer.com/978-3-658-14840-9

Forthcoming

A. Luntovskyy, J. Spillner

Dynamics of Liquid Solidification
Thermal Resistance of Contact Layer

This monograph comprehensively describes phenomena of heat flow during phase change as well as the dynamics of liquid solidification, i.e. the development of a solidified layer. The book provides the reader with basic knowledge for practical designs, as well as with equations which describe processes of energy transformation. The target audience primarily comprises researchers and experts in the field of heat flow, but the book may also be beneficial for both practicing engineers and graduate students.

More on www.springer.com/978-3-319-53431-2

Hardcover
2017. X, 137 p. 88 illus., 17 illus. in color. (Mathematical Engineering)
► 93,08 €
ISBN 978-3-319-53431-2
Erscheinungstermin: March 30, 2017

Z. Lipnicki

Memorized Discrete Systems and Time-delay

This book examines discrete dynamical systems with memory—nonlinear systems that exist extensively in biological organisms and financial and economic organizations, and time-delay systems that can be discretized into the memorized, discrete dynamical systems. It book further discusses stability and bifurcations of time-delay dynamical systems that can be investigated through memorized dynamical systems as well as bifurcations of memorized nonlinear dynamical systems, discretization methods of time-delay systems, and periodic motions to chaos in nonlinear time-delay systems. The book helps readers find analytical solutions of MDS, change traditional perturbation analysis in time-delay[…]

More on www.springer.com/978-3-319-42777-5

Hardcover
2017. X, 298 p. 35 illus., 17 illus. in color. (Nonlinear Systems and Complexity, Band 17)
► 160,49 €
ISBN 978-3-319-42777-5
Gewöhnlich versandfertig in 3-5 Werktagen.

A.C.J. Luo

Non-logic Devices in Logic Processes

This book shows readers how to design semiconductor devices using the most common and lowest cost logic CMOS processes. Readers will benefit from the author’s extensive, industrial experience and the practical approach he describes for designing efficiently silicon devices that typically have to be implemented using specialized processes that are expensive, time-consuming, and low-yield. The author presents an integrated picture of semiconductor device physics and manufacturing techniques, as well as numerous practical examples of device designs that are tried and true.

More on www.springer.com/978-3-319-48337-5

Hardcover
2017. XXII, 282 p. 184 illus., 111 illus. in color.
► 160,49 €
ISBN 978-3-319-48337-5
Erscheinungstermin: March 16, 2017

C. Machado (Ed.)

Competencies and (Global) Talent Management

This book covers the main issues on the study of competencies and talent management in modern and competitive organizations. The chapters show how organizations around the world are facing (global) talent management challenges and give the reader information on the latest research activity related to that. Innovative theories and strategies are reported in this book, which provides an interdisciplinary exchange of information, ideas and opinions about the workplace challenges.

More on www.springer.com/978-3-319-53398-8

Hardcover
2017. X, 146 p. 5 illus. in color. (Management and Industrial Engineering)
► 93,08 €
ISBN 978-3-319-53398-8
Erscheinungstermin: March 31, 2017

A. Mahjoubfar, C.L. Chen, B. Jalali

Artificial Intelligence in Label-free Microscopy

Biological Cell Classification by Time Stretch

This book introduces time-stretch quantitative phase imaging (TS-QPI), a high-throughput label-free imaging flow cytometer developed for big data acquisition and analysis in phenotypic screening. TS-QPI is able to capture quantitative optical phase and intensity images simultaneously, enabling high-content cell analysis, cancer diagnostics, personalized genomics, and drug development. The authors also demonstrate a complete machine learning pipeline that performs optical phase measurement, image processing, feature extraction, and classification, enabling high-throughput quantitative imaging that achieves record high
accuracy in label-free cellular phenotypic screening and opens up a[...]

More on www.springer.com/978-3-319-51447-5

Hardcover
2017. XXXV, 134 p. 52 illus. in color.
► 123,04 €
ISBN 978-3-319-51447-5
Erscheinungstermin: March 16, 2017

Tactile Display for Virtual 3D Shape Rendering
This book describes a novel system for the simultaneous visual and tactile rendering of product shapes which allows designers to simultaneously touch and see new product shapes during the conceptual phase of product development. This system offers important advantages, including potential cost and time savings, compared with the standard product design process in which digital 3D models and physical prototypes are often repeatedly modified until an optimal design is achieved. The system consists of a tactile display that is able to represent, within a real environment, the shape of a product. Designers can explore the rendered surface by touching curves lying on the product shape.[...]

More on www.springer.com/978-3-319-48985-8

Softcover
2017. X, 112 p. 61 illus., 20 illus. in color. (Polimi SpringerBriefs)
► 53,49 €
ISBN 978-3-319-48985-8
Gewöhnlich versandfertig in 3-5 Werktagen. March 16, 2017

Forthcoming
C. Marchioli (Ed.)

Collective Dynamics of Particles
From Viscous to Turbulent Flows
The book surveys the state-of-the-art methods that are currently available to model and simulate the presence of rigid particles in a fluid flow. For particles that are very small relative to the characteristic flow scales and move without interaction with other particles, effective equations of motion for particle tracking are formulated and applied (e.g. in gas-solid flows). For larger particles, for particles in liquid-solid flows and for particles that interact with each other or possibly modify the overall flow detailed model are presented. Special attention is given to the description of the approximate force coupling method (FCM) as a more general treatment for small particles.[...]

More on www.springer.com/978-3-319-51224-2

Hardcover
2017. VII, 128 p. 67 illus. (CISM International Centre for Mechanical Sciences, Band 576)
► 127,33 €
ISBN 978-3-319-51224-2
Erscheinungstermin: March 24, 2017

M. Maurer

Complexity Management in Engineering Design – a Primer
The treatise supports understanding the phenomena of complexity in engineering, distinguishes complexity from other challenges and presents an overview of definitions and applied approaches. The historical background of complexity management is explained by highlighting the important epochs, their key actors and their discoveries, findings and developments. Knowing about the appearance of early system awareness in ancient Greece, the creation of mechanical philosophy in the 17th century and the discovery of classic physics enables the reader to better com-

Forthcoming
R. Micheloni (Ed.)

Solid-State-Drives (SSDs) Modeling
Simulation Tools & Strategies
This book introduces simulation tools and strategies for complex systems of solid-state-drives (SSDs) which consist of a flash multi-core microcontroller plus NAND flash memories. It provides a broad overview of the most popular simulation tools, with special focus on open source solutions. VSSIM, NANDFlashSim and DiskSim are benchmarked against performances of real SSDs under different traffic workloads. PROs and CONs of each simulator are analyzed, and it is clearly indicated which kind of answers each of them can give and at a what price. It is explained, that speed and precision do not go hand in hand, and it is important to understand when to simulate what, and with which tool. [...] More on www.springer.com/978-3-319-51734-6

Hardcover
2017. X, 196 p. 58 illus., 59 illus. in color. (Signals and Communication Technology)
► 93,08 €
ISBN 978-3-319-46698-9
Gewöhnlich versandfertig in 3-5 Werktagen.

Hardware IP Security and Trust
P. Mishra, S. Bhunia, M. Tehranipoor (Eds.)

This book provides an overview of current Intellectual Property (IP) based System-on-Chip (SoC) design methodology and highlights how security of IP can be compromised at various stages in the overall SoC design-fabrication-deployment cycle. Readers will gain a comprehensive understanding of the security vulnerabilities of different types of IPs. This book would enable readers to overcome these vulnerabilities through an efficient combination of proactive countermeasures and design-for-security solutions, as well as a wide variety of IP security and trust assessment and validation techniques. This book serves as a single-source of reference for system designers and practitioners for [...] More on www.springer.com/978-3-319-49024-3

Hardcover
2017. XII, 353 p. 78 illus. in color.
► 138,03 €
ISBN 978-3-319-49024-3
Gewöhnlich versandfertig in 3-5 Werktagen.

Forthcoming
K. Mitra, S. Miller

Short Pulse Laser Systems for Biomedical Applications
This book presents practical information on the clinical applications of short pulse laser systems and the techniques for optimizing these applications in a manner that will be relevant to a broad audience, including engineering and medical students as well as researchers, clinicians, and technicians. Short pulse laser systems are useful for both subsurface tissue imaging and laser induced thermal therapy (LITT), which hold great promise in cancer diagnostics and treatment. Such laser systems may be used alone or in combination with optically active nanoparticles specifically administered to the tissues of interest for enhanced contrast in imaging and precise heating during LITT. [...] More on www.springer.com/978-3-319-54252-2

Softcover
2017. VII, 49 p. 9 illus. in color. (SpringerBriefs in Applied Sciences and Technology)
► 53,49 €
ISBN 978-3-319-54252-2
Erscheinungstermin: April 9, 2017

A.K. Mishra, R.S. Verster

Compressive Sensing Based Algorithms for Electronic Defence
This book details some of the major developments in the implementation of compressive sensing in radio applications for electronic defense and warfare communication use. It provides a comprehensive background to the subject and at the same time describes some novel algorithms. It also investigates application value and performance-related parameters of compressive sensing in scenarios such as direction finding, spectrum monitoring, detection, and classification. More on www.springer.com/978-3-319-46698-9

Hardcover
2017. X, 184 p. 106 illus., 59 illus. in color. (Signals and Communication Technology)
► 93,08 €
ISBN 978-3-319-46698-9
Gewöhnlich versandfertig in 3-5 Werktagen.
A. Moridi

**Powder Consolidation Using Cold Spray Process Modeling and Emerging Applications**

This book first presents different approaches to modeling of the cold spray process with the aim of extending current understanding of its fundamental principles and then describes emerging applications of cold spray. In the coverage of modeling, careful attention is devoted to the assessment of critical and erosion velocities. In order to reveal the phenomenological characteristics of interface bonding, severe, localized plastic deformation and material jet formation are studied. Detailed consideration is also given to the effect of macroscopic defects such as interparticle boundaries and subsequent splat boundary cracking on the mechanical behavior of cold spray coatings. The[...]

More on [www.springer.com/978-3-319-29961-7](http://www.springer.com/978-3-319-29961-7)

**Softcover**

2017. XVII, 127 p. 52 illus., 20 illus. in color. (PoliMI SpringerBriefs)

► **53,49 €**

ISBN 978-3-319-29961-7

Gewöhnlich versandfertig in 3-5 Werktagen.

Y.M. Mughal

**A Parametric Framework for Modelling of Bioelectrical Signals**

This book examines non-invasive, electrical-based methods for disease diagnosis and assessment of heart function. In particular, a formalized signal model is proposed since this offers several advantages over methods that rely on measured data alone. By using a formalized representation, the parameters of the signal model can be easily manipulated and/or modified, thus providing mechanisms that allow researchers to reproduce and control such signals. In addition, having such a formalized signal model makes it possible to develop computer tools that can be used for manipulating and understanding how signal changes result from various heart conditions, as well as for generating input[...]


**Hardcover**

2016. XV, 81 p. 42 illus., 5 illus. in color. (Series in BioEngineering)

► **85,59 €**

ISBN 978-981-287-968-4

Gewöhnlich versandfertig in 3-5 Werktagen.

F. Mostafa, T. Dillon, E. Chang

**Computational Intelligence Applications to Option Pricing, Volatility Forecasting and Value at Risk**

This book demonstrates the power of neural networks in learning complex behavior from the underlying financial time series data. The results presented also show how neural networks can successfully be applied to volatility modeling, option pricing, and value-at-risk modeling. These features mean that they can be applied to market-risk problems to overcome classic problems associated with statistical models.

More on [www.springer.com/978-3-319-51666-0](http://www.springer.com/978-3-319-51666-0)

**Hardcover**

2017. XVII, 127 p. 52 illus., 20 illus. in color. (PoliMI SpringerBriefs)

► **53,49 €**

ISBN 978-3-319-51666-0

Gewöhnlich versandfertig in 3-5 Werktagen.


**Green Symbiotic Cloud Communications**

This book intends to change the perception of modern day telecommunications. Communication systems, usually perceived as “dumb pipes”, carrying information / data from one point to another, are evolved into intelligently communicating smart systems. The book introduces a new field of cloud communications. The concept, theory, and architecture of this new field of cloud communications are discussed. The book lays down nine design postulates that form the basis of the development of a first of its kind cloud communication paradigm entitled Green Symbiotic Cloud Communications or GSCC. The proposed design postulates are formulated in a generic way to form the backbone for development of[...]

More on [www.springer.com/978-981-10-3511-1](http://www.springer.com/978-981-10-3511-1)

**Hardcover**

2017. XI, 96 p. 51 illus., 46 illus. in color.

► **93,08 €**

ISBN 978-981-10-3511-1

Gewöhnlich versandfertig in 3-5 Werktagen.

K. Mukherjee

**Supplier Selection An MCDA-Based Approach**

The purpose of this book is to present a comprehensive review of the latest research and development trends at the international level for modeling and optimization of the supplier selection process for different industrial sectors. It is targeted to serve two audiences: the MBA and PhD student interested in procurement, and the practitioner who wishes to gain a deeper understanding of procurement analysis with multi-criteria based decision tools to avoid upstream risks to get better supply chain visibility. The book is expected to serve as a ready reference for supplier selection criteria and various multi-criteria based supplier’s evaluation methods for forward, reverse and mass[...]
S. Narayan, K.M. Divya, V. Krushna Kanth

FDTD Modeling of EM Field inside Microwave Cavities

This book deals with the EM analysis of closed microwave cavities based on a three-dimensional FDTD method. The EM analysis is carried out for (i) rectangular microwave ovens and (ii) hybrid-cylindrical microwave autoclaves at 2.45 GHz. The field distribution is first estimated inside domestic rectangular ovens in xy-, yz-, and zx-plane. Further, the RF leakage from the oven door is determined to study the effect of leakage radiation on wireless communication at 2.45 GHz. Furthermore, the EM analysis of the autoclave is carried out based on 3D FDTD using staircase approximation. In order to show the capability of autoclaves (excited with five source) for curing the aerospace[...]


Hardcover
2017. XVI, 297 p. 74 illus., 47 illus. in color. (Nonlinear Systems and Complexity, Band 18)
► 123,04 €
ISBN 978-3-319-46163-2
Gewöhnlich versandfertig in 3-5 Werktagen.

C. Nguyen, M. Miao

Design of CMOS RFIC Ultra-Wideband Impulse Transmitter and Receiver

This book presents the design of ultra-wideband (UWB) impulse-based transmitter and receiver frontends, operating within the 3.1-10.6 GHz frequency band, using CMOS radio-frequency integrated-circuits (RFICs). CMOS RFICs are small, cheap, low power devices, better suited for direct integration with digital ICs as compared to those using III-V compound semiconductor devices. CMOS RFICs are thus very attractive for RF systems and, in fact, the principal choice for commercial wireless markets. The book comprises seven chapters. The first chapter gives an introduction to UWB technology and outlines its suitability for high resolution sensing and high-rate, short-range ad-hoc networking[...]

More on www.springer.com/978-3-319-53105-2

Hardcover
2017. VIII, 113 p. 83 illus., 60 illus. in color. (SpringerBriefs in Electrical and Computer Engineering)
► 53,49 €
ISBN 978-3-319-53105-2
Erscheinungstermin: April 2, 2017

M. Nemiche, M. Essaaidi (Eds.)

Advances in Complex Societal, Environmental and Engineered Systems

This book addresses recent technological progress that has led to an increased complexity in many natural and artificial systems. The resulting complexity research due to the emergence of new properties and spatio-temporal interactions among a large number of system elements - and between the system and its environment - is the primary focus of this text. This volume is divided into three parts: Part one focuses on societal and ecological systems, Part two deals with approaches for understanding, modeling, predicting and mastering socio-technical systems, and Part three includes real-life examples. Each chapter has its own special features; it is a self-contained contribution of[...]

More on www.springer.com/978-3-319-47056-6

Hardcover
2017. XII, 299 p. 79 illus. (Signals and Communication Technology)
► 160,49 €
ISBN 978-3-319-47056-6
Gewöhnlich versandfertig in 3-5 Werktagen.

F. Nielsen, F. Critchley, C.T.J. Dodson (Eds.)

Computational Information Geometry

For Image and Signal Processing

This book focuses on the application and development of information geometric methods in the analysis, classification and retrieval of images and signals. It provides introductory chapters to help those new to information geometry and applies the theory to several applications. This area has developed rapidly over recent years, propelled by the major theoretical developments in information geometry, efficient data and image acquisition and the desire to process and interpret large databases of digital information. The book addresses both the transfer of methodology to practitioners involved in database analysis and in its efficient computational implementation.

More on www.springer.com/978-3-319-47056-6

Hardcover
2017. XII, 299 p. 79 illus. (Signals and Communication Technology)
► 160,49 €
ISBN 978-3-319-47056-6
Gewöhnlich versandfertig in 3-5 Werktagen.

A. Nijholt (Ed.)

Playable Cities

The City as a Digital Playground

This book addresses the topic of playable cities, which use the ‘smartness’ of digital cities to offer their citizens playful events and activities. The contributions presented here examine various aspects of playable cities, including developments in pervasive and urban games, the use of urban data to design games and playful applications, architecture design and playability, and mischief and humor in playable cities. The smartness of digital cities can be found in the sensors and actuators that are embedded in their environment. This smartness allows them to monitor, anticipate and support our activities and increases the
efficiency of the cities and our activities. These urban smart[...]


Hardcover
2017. X, 253 p. 73 illus., 71 illus. in color. (Gaming Media and Social Effects)
► 123,04 €

Gewöhnlich versandfertig in 3-5 Werktagen.

Multi-Technology Positioning

This book provides an overview of positioning technologies, applications and services in a format accessible to a wide variety of readers. Readers who have always wanted to understand how satellite-based positioning, wireless network positioning, inertial navigation, and their combinations work will find great value in this book. Readers will also learn about the advantages and disadvantages of different positioning methods, their limitations and challenges. Cognitive positioning, adding the brain to determine which technologies to use at device runtime, is introduced as well. Coverage also includes the use of position information for Location Based Services (LBS), as well as [...]

More on www.springer.com/978-3-319-50426-1

Hardcover
► 138,03 €
ISBN 978-3-319-50426-1

Erscheinungstermin: April 6, 2017

Inverter-Based Circuit Design Techniques for Low Supply Voltages

This book describes intuitive analog design approaches using digital inverters, providing filter architectures and circuit techniques enabling high performance analog circuit design. The authors provide process, supply voltage and temperature (PVT) variation-tolerant design techniques for inverter based circuits. They also discuss various analog design techniques for lower technology nodes and lower power supply, which can be used for designing high performance systems-on-chip.

More on www.springer.com/978-3-319-46626-2

Hardcover
2017. XIX, 126 p. 127 illus., 95 illus. in color. (Analog Circuits and Signal Processing)
► 93,08 €
ISBN 978-3-319-46626-2

Gewöhnlich versandfertig in 3-5 Werktagen.

Robust Resource Allocation in Future Wireless Networks

This book presents state-of-the-art research on robust resource allocation in current and future wireless networks. The authors describe the nominal resource allocation problems in wireless networks and explain why introducing robustness in such networks is desirable. Then, depending on the objectives of the problem, namely maximizing the social utility or the per-user utility, cooperative or competitive approaches are explained and their corresponding robust problems are considered in detail. For each approach, the costs and benefits of robust schemes are discussed and
Focuses on aspects of stem cells ranging from expansions, and their role as novel cellular therapeutic enginering of these cells, reprogramming of their func-
tions and limitations of many common applications related to stem cells: their sources, categories, engi-
neering of these cells, reprogramming of their func-
tions, and their role as novel cellular therapeutic approach. Written by experts in the field, the book treats both theoretical and prac-
tical aspects of stem cell research. It covers the advan-
tages and limitations of many common applications related to stem cells: their sources, categories, engi-
neering of these cells, reprogramming of their func-
tions, and their role as novel cellular therapeutic approach. Written by experts in the field, the book focuses on aspects of stem cells ranging from expansion-propagation[...]

M. Pavlovic, K. Radotic

Animal and Plant Stem Cells
Concepts, Propagation and Engineering

This book provides a multifaceted look into the world of stem cells and explains the similarities and differences between plant and human stem cells. It explores the intersection between animals and plants and explains their cooperative role in bioengineering studies. The book treats both theoretical and practical aspects of stem cell research. It covers the advantages and limitations of many common applications related to stem cells: their sources, categories, engineering of these cells, reprogramming of their functions, and their role as novel cellular therapeutic approach. Written by experts in the field, the book focuses on aspects of stem cells ranging from expansion-propagation[...]

More on www.springer.com/978-3-319-47761-9

The Lean Product Design and Development Journey
A Practical View

This book presents a series of high performance product design (PD) and development best practices that can create or improve product development organization. In contrast to other books that focus only on Toyota or other individual companies applying lean IPD, this book explains the lean philosophy more broadly and includes discussions of systems engineering, design for X (DFX), agile development, integrated product development, and project management. The “Lean Journey” proposed here takes a value-centric approach, where the lean principles are applied to PD to allow the tools and methods selected to emerge from observation of the individual characteristics of each enterprise. This[...]

More on www.springer.com/978-3-319-46791-7

Advances in Business ICT: New Ideas from Ongoing Research

This book discusses the effective use of modern ICT solutions for business needs, including the efficient use of IT resources, decision support systems, business intelligence, data mining and advanced data processing algorithms, as well as the processing of large datasets (inter alia social networking such as Twitter and Facebook, etc.). The ability to generate, record and process qualitative and quantitative data, including in the area of big data, the Internet of Things (IoT) and cloud computing offers a real prospect of significant improvements for business, as well as the operation of a company within Industry 4.0. The book presents new ideas, approaches, solutions and algorithms[...]

More on www.springer.com/978-3-319-47207-2

Learning Analytics: Fundaments, Applications, and Trends
A View of the Current State of the Art to Enhance e-Learning

This book provides a conceptual and empirical perspective on learning analytics, its goal being to disseminate the core concepts, research, and outcomes of this emergent field. Divided into nine chapters, it offers reviews oriented on selected topics, recent advances, and innovative applications. It presents the broad learning analytics landscape and in-depth studies on higher education, adaptive assessment, teaching and learning. In addition, it discusses valu-
able approaches to coping with personalization and huge data, as well as conceptual topics and specialized applications that have shaped the current state of the art. By identifying fundamentals, highlighting applications, and[...]

More on www.springer.com/978-3-319-52976-9

Systems with Hidden Attractors
From Theory to Realization in Circuits

This brief provides a general overview of nonlinear systems that exhibit hidden-attractor behavior, a topic of interest in subjects as divers as physics, mechanics, electronics and secure communications. The brief is intended for readers who want to understand the concepts of the hidden attractor and hidden-attractor systems and to implement such systems experimentally using common electronic components. Emer-
gent topics in circuit implementation of systems with hidden attractors are included. The brief serves as an up-to-date reference on an important research topic for undergraduate/graduate students, laboratory researchers and lecturers in various areas of engineering and physics.

More on www.springer.com/978-3-319-53720-7

Softcover
2017. IX, 105 p. 61 illus., 23 illus. in color. (SpringerBriefs in Nonlinear Circuits)
► 53,49 €
ISBN 978-3-319-53720-7
Erscheinungstermin: March 28, 2017

K.M. Poluri, K. Gulati

Protein Engineering Techniques
Gateways to Synthetic Protein Universe

This brief provides a broad overview of protein-engineering research, offering a glimpse of the most common experimental methods. It also presents various computational programs with applications that are widely used in directed evolution, computational and de novo protein design. Further, it sheds light on the advantages and pitfalls of existing methodologies and future perspectives of protein engineering techniques.

More on www.springer.com/978-981-10-2731-4

Softcover
2017. XIV, 134 p. 37 illus. in color. (Springer Briefs in Forensic and Medical Bioinformatics)
► 53,49 €
ISBN 978-981-10-2731-4
Gewöhnlich versandfertig in 3-5 Werktagen.

G. Posser, S.S. Sapatnekar, R. Reis

Electromigration Inside Logic Cells
Modeling, Analyzing and Mitigating Signal Electromigration in NanoCMOS

This book describes new and effective methodologies for modeling, analyzing and mitigating cell-internal signal electromigration in nanoCMOS, with significant circuit lifetime improvements and no impact on performance, area and power. The authors are the first to analyze and propose a solution for the electromigration effects inside logic cells of a circuit. They show in this book that an interconnect inside a cell can fail reducing considerably the circuit lifetime and they demonstrate a methodology to optimize the lifetime of circuits, by placing the output, Vdd and Vss pin of the cells in the less critical regions, where the electromigration effects are reduced. Readers will be [...] More on www.springer.com/978-3-319-48898-1

Hardcover
2017. XX, 118 p. 72 illus., 69 illus. in color. (SpringerBriefs in Measurement and Instrumentation, Band 22)
► 93,08 €
ISBN 978-3-319-48898-1
Gewöhnlich versandfertig in 3-5 Werktagen.

G.A. Psarros

Energy Efficiency Clauses in Charter Party Agreements
Legal and Economic Perspectives and their Application to Ocean Grain Transport

This book provides practical solutions for addressing energy efficiency as a clause term within a charter party contract. For this, upon a reflection of the regulatory craft, it analyzes key concepts of case law, and discusses them together with commercial and economic principles. In this way, the book aims at offering a comprehensive, interdisciplinary view of the chartering process, together with a new approach for safeguarding energy efficiency investments. A special emphasis is given to the maritime industry. Here,
the newly developed framework, based on game theory, has been successfully applied to demonstrate the importance of including a clause term in contract negotiation to[...]

More on www.springer.com/978-3-319-50264-9

Forthcoming

E. Balas, T. Skarlatoudis, A. Geronikolas

More-than-Moore 2.5D and 3D SiP Integration

This book presents a realistic and a holistic review of the microelectronic and semiconductor technology options in the post Moore’s Law regime. Technical tradeoffs, from architecture down to manufacturing processes, associated with the 2.5D and 3D integration technologies, as well as the business and product management considerations encountered when faced by disruptive technology options, are presented. Coverage includes a discussion of Integrated Device Manufacturer (IDM) vs Fabless, vs Foundry, and Outsourced Assembly and Test (OSAT) barriers to implementation of disruptive technology options. This book is a must-read for any IC product team that is considering getting off the[...]

More on www.springer.com/978-3-319-52547-1

Hardcover

2017. XV, 182 p. 68 illus., 66 illus. in color.
► 90,94 €
ISBN 978-3-319-52547-1
Gewöhnlich versandfertig in 3-5 Werktagen. March 9, 2017

Forthcoming

A. Rahimi, L. Benini, R. Gupta

From Variability Tolerance to Approximate Computing in Parallel Integrated Architectures and Accelerators

This book focuses on computing devices and their design at various levels to combat variability. The authors provide a review of key concepts with particular emphasis on timing errors caused by various variability sources. They discuss methods to predict and prevent, detect and correct, and finally conditions under which such errors can be accepted; they also consider their implications on cost, performance and quality. Coverage includes a comparative evaluation of methods for deployment across various layers of the system from circuits, architecture, to application software. These can be combined in various ways to achieve specific goals related to observability and controllability[...]

More on www.springer.com/978-3-319-53767-2

Hardcover

2017. XI, 197 p. 48 illus. in color.
► 123,04 €
ISBN 978-3-319-53767-2
Erscheinungstermin: April 15, 2017

A.M. Rahman, P. Liljeberg, A. Hemani, A. Jantsch, H. Tenhunen (Eds.)

The Dark Side of Silicon

Energy Efficient Computing in the Dark Silicon Era

This book presents the state-of-the art of one of the main concerns with microprocessors today, a phenomenon known as “dark silicon”. Readers will learn how power constraints (both leakage and dynamic power) limit the extent to which large portions of a chip can be powered up at a given time, i.e. how much actual performance and functionality the microprocessor can provide. The authors describe their research toward the future of microprocessor development in the dark silicon era, covering a variety of important aspects of dark silicon-aware architectures including design, management, reliability, and test. Readers will benefit from specific recommendations for mitigating the dark[...]

More on www.springer.com/978-3-319-31594-2

Hardcover

2017. VI, 347 p. 152 illus., 116 illus. in color.
► 138,03 €
ISBN 978-3-319-31594-2
Gewöhnlich versandfertig in 3-5 Werktagen.

M. Ram, J.P. Davim (Eds.)

Advances in Reliability and System Engineering

This book presents original studies describing the latest research and developments in the area of reliability and systems engineering. It helps the reader identify gaps in the current knowledge and presents fruitful areas for further research in the field. Among others, this book covers reliability measures, reliability assessment of multi-state systems, optimization of multi-state systems, continuous multi-state systems, new computational techniques applied to multi-state systems and probabilistic and non-probabilistic safety assessment.

More on www.springer.com/978-3-319-48874-5

Hardcover

2017. XII, 265 p. 86 illus., 53 illus. in color. (Management and Industrial Engineering)
► 123,04 €
ISBN 978-3-319-48874-5
Gewöhnlich versandfertig in 3-5 Werktagen.

V. Rana, D. Rana

Renewable Biofuels

Bioconversion of Lignocellulosic Biomass by Microbial Community

This book offers a complete introduction for novices to understand key concepts of biocatalysis and how
to produce in-house enzymes that can be used for low-cost biofuels production. The authors discuss the challenges involved in the commercialization of the biofuel industry, given the expense of commercial enzymes used for lignocellulose conversion. They describe the limitations in the process, such as complexity of lignocellulose structure, different microbial communities' actions and interactions for degrading the recalcitrant structure of lignocellulosic materials, hydrolysis mechanism and potential for bio refinery. Readers will gain understanding of the key concepts of [...] More on www.springer.com/978-3-319-47378-9 Softcover 2017. XIII, 106 p. 12 illus., 4 illus. in color. (SpringerBriefs in Applied Sciences and Technology) ▶ 53,49 € ISBN 978-3-319-47378-9 Gewöhnlich versandfertig in 3-5 Werktagen.

J.S. Rao

Simulation Based Engineering in Solid Mechanics

This book begins with a brief historical perspective of the advent of rotating machinery in 20th century Solid Mechanics and the development of the discipline of the Strength of Materials. High Performance Computing (HPC) and Simulation Based Engineering Science (SBES) have gradually replaced the conventional approach in Design bringing science directly into engineering without approximations. A recap of the required mathematical principles is given. The science of deformation, strain and stress at a point under the application of external traction loads is next presented. Only one-dimensional structures classified as Bars (axial loads), Rods (twisting loads) and Beams (bending loads) [...] More on www.springer.com/978-3-319-47613-1 Hardcover 2017. XIV, 200 p. 100 illus., 56 illus. in color. ▶ 123,04 € ISBN 978-3-319-47613-1 Gewöhnlich versandfertig in 3-5 Werktagen.

K.S. Rao, M. K E

Speech Recognition Using Articulatory and Excitation Source Features

This book discusses the contribution of articulatory and excitation source information in discriminating-sound units. The authors focus on excitation source component of speech -- and the dynamics of various articulators during speech production -- for enhancement of speech recognition (SR) performance. Speech recognition is analyzed for read, extempore, and conversation modes of speech. Five groups of articulatory features (AFs) are explored for speech recognition, in addition to conventional spectral features. Each chapter provides the motivation for exploring the specific feature for SR task, discusses the methods to extract those features, and finally suggests appropriate models[...]


A. Rayes, S. Samer

Internet of Things From Hype to Reality

The Road to Digitization

This book comprehensively describes an end-to-end Internet of Things (IoT) architecture that is comprised of devices, network, compute, storage, platform, applications along with management and security components. It is organized into five main parts, comprising of a total of 11 chapters. Part I presents a generic IoT reference model to establish a common vocabulary for IoT solutions. This includes a detailed description of the Internet protocol layers and the Things (sensors and actuators) as well as the key business drivers to realize the IoT vision. Part II focuses on the IoT requirements that impact networking protocols and provides a layer-by-layer walkthrough of the protocol[...] More on www.springer.com/978-3-319-44858-9 Hardcover 2017. XXVIII, 328 p. 109 illus., 105 illus. in color. ▶ 90,94 € ISBN 978-3-319-44858-9 Gewöhnlich versandfertig in 3-5 Werktagen.
Computational Botany
Methods for Automated Species Identification
This book discusses innovative methods for mining information from images of plants, especially leaves, and highlights the diagnostic features that can be implemented in fully automatic systems for identifying plant species. Adopting a multidisciplinary approach, it explores the problem of plant species identification, covering both the concepts of taxonomy and morphology. It then provides an overview of morphometrics, including the historical background and the main steps in the morphometric analysis of leaves together with a number of applications. The core of the book focuses on novel diagnostic methods for plant species identification developed from a computer scientist’s...[...]
More on www.springer.com/978-3-662-53743-5

Hardcover
2017. XIII, 227 p. 124 illus., 83 illus. in color. (Intelligent Systems, Control and Automation: Science and Engineering, Band 85)
➤ 123,04 €
Gewöhnlich versandfertig in 3-5 Werktagen.

Introduction to Computer Networking
Th.G. Robertazzi
This book gives a broad look at both fundamental networking technology and new areas that support it and use it. It is a concise introduction to the most prominent, recent technological topics in computer networking. Topics include network technology such as wired and wireless networks, enabling technologies such as data centers, software defined networking, cloud and grid computing and applications such as networks on chips, space networking and network security. The accessible writing style and non-mathematical treatment makes this a useful book for the student, network and communications engineer, computer scientist and IT professional.
More on www.springer.com/978-3-319-53102-1

Hardcover
2017. XIII, 154 p. 42 illus., 5 illus. in color.
➤ 123,04 €
ISBN 978-3-319-53102-1
Erscheinungstermin: March 29, 2017

Controller Tuning with Evolutionary Multiobjective Optimization
A Holistic Multiobjective Optimization Design Procedure
This book is devoted to Multiobjective Optimization Design (MOOD) procedures for controller tuning applications, by means of Evolutionary Multiobjective Optimization (EMO). It presents developments in tools, procedures and guidelines to facilitate this process, covering the three fundamental steps in the procedure: problem definition, optimization and decision-making. The book is divided into four parts. The first part, Fundamentals, focuses on the necessary theoretical background and provides specific tools for practitioners. The second part, Basics, examines a range of basic examples regarding the MOOD procedure for controller tuning, while the third part, Benchmarking, demonstrates[...]
More on www.springer.com/978-3-319-41299-3

Hardcover
2017. XIII, 227 p. 124 illus., 83 illus. in color. (Intelligent Systems, Control and Automation: Science and Engineering, Band 85)
➤ 93,08 €
ISBN 978-3-319-41299-3
Gewöhnlich versandfertig in 3-5 Werktagen.

Concentrating Solar Thermal Technologies
Analysis and Optimisation by CFD Modelling
This book addresses the evaluation and optimization of key elements in concentrating solar thermal (CST) technologies, such as solar receivers and working fluids, using computational fluid dynamics (CFD) modeling. It discusses both general and specific aspects, explaining the methodology used to analyze and evaluate the influence of different parameters on the facility performance. This information provides the basis for optimizing design and operating conditions in CST systems.
More on www.springer.com/978-3-319-45882-3

Hardcover
2017. IX, 88 p. 25 illus. (Green Energy and Technology)
➤ 93,08 €
ISBN 978-3-319-45882-3
Gewöhnlich versandfertig in 3-5 Werktagen.

Efficient Predictive Algorithms for Image Compression
This book discusses efficient prediction techniques for the current state-of-the-art High Efficiency Video Coding (HEVC) standard, focusing on the compression of a wide range of video signals, such as 3D video, Light Fields and natural images. The authors begin with a review of the state-of-the-art predictive coding methods and compression technologies for both 2D and 3D multimedia contents, which provides a good starting point for new researchers in the field of image and video compression. New prediction techniques that go beyond the standardized compression technologies are then presented and discussed.
In the context of 3D video, the authors describe a new predictive algorithm for [...] More on www.springer.com/978-3-319-51179-5

Hardcover
2017. XIX, 169 p. 66 illus., 24 illus. in color.
► 123,04 €
ISBN 978-3-319-51179-5
Gewöhnlich versandfertig in 3-5 Werktagen.

Active Metamaterials
Terahertz Modulators and Detectors
This book covers the theoretical background, experimental methods and implementation details to engineer for communication and imaging application, terahertz devices using metamaterials, in mainstream semiconductor foundry processes. This book will provide engineers and physicists an authoritative reference to construct such devices with minimal background. The authors describe the design and construction of electromagnetic (EM) devices for terahertz frequencies (10^8-10^10 cycles/sec) using artificial materials that are a fraction of the wavelength of the incident EM wave, resulting in an effective electric and magnetic properties (permittivity and permeability) that are unavailable in [...] More on www.springer.com/978-3-319-52218-0

Hardcover
2017. XIII, 118 p. 67 illus., 59 illus. in color.
► 93,08 €
ISBN 978-3-319-52218-0
Gewöhnlich versandfertig in 3-5 Werktagen.

Key Factors of Combustion
From Kinetics to Gas Dynamics
This book summarizes the main advances in the mechanisms of combustion processes. It focuses on the analysis of kinetic mechanisms of gas combustion processes and experimental investigation into the interrelation of kinetics and gas dynamics in gas combustion. The book is complimentary to the one previously published, The Modes of Gaseous Combustion. More on www.springer.com/978-3-319-45996-7

Hardcover
2017. XXIII, 232 p. 96 illus., 32 illus. in color. (Springer Aerospace Technology)
► 123,04 €
ISBN 978-3-319-45996-7
Gewöhnlich versandfertig in 3-5 Werktagen.

Control and Decision Strategies in Wastewater Treatment Plants for Operation Improvement
This book examines the operation of biological wastewater treatment plants (WWTPs), with a focus on maintaining effluent water quality while keeping operational costs within constrained limits. It includes control operation and decision schemes and is based on the use of benchmarking scenarios that yield easily reproducible results that readers can implement for their own solutions. The final criterion is the effect of the applied control strategy on plant performance – specifically, improving effluent quality, reducing costs and avoiding violations of established effluent limits. The evaluation of the different control strategies is achieved with the help of two Benchmark Simulations [...] More on www.springer.com/978-3-319-46366-7

Hardcover
2017. XII, 124 p. 70 illus., 57 illus. in color. (Intelligent Systems, Control and Automation: Science and Engineering, Band 86)
► 93,08 €
ISBN 978-3-319-46366-7
Gewöhnlich versandfertig in 3-5 Werktagen.

Managing Distributed Dynamic Systems with Spatial Grasp Technology
The book describes a novel ideology and supporting information technology for integral management of both civil and defence-orientated large, distributed dynamic systems. The approach is based on a high-level Spatial Grasp Language, SGL, expressing solutions in physical, virtual, executive and combined environments in the form of active self-evolving and self-propagating patterns spatially matching the systems to be created, modified and controlled. The communicating interpreters of SGL can be installed in key system points, which may be in large numbers (up to millions and billions) and represent equipped humans, robots, laptops, smartphones, smart sensors, etc. Operating under [...] More on www.springer.com/978-3-319-50459-9

Hardcover
2017. XVII, 284 p. 215 illus., 168 illus. in color. (Studies in Computational Intelligence, Band 690)
A. Scheinker, M. Krstic

Model-Free Stabilization by Extremum Seeking

With this brief, the authors present algorithms for model-free stabilization of unstable dynamic systems. An extremum-seeking algorithm assigns the role of a cost function to the dynamic system’s control Lyapunov function (clf) aiming at its minimization. The minimization of the clf drives the clf to zero and achieves asymptotic stabilization. This approach does not rely on, or require knowledge of, the system model. Instead, it employs periodic perturbation signals, along with the clf. The same effect is achieved as by using clf-based feedback laws that profit from modeling knowledge, but in a time-average sense. Rather than use integrals of the systems vector field, we employ [...] More on www.springer.com/978-3-319-50459-9

E. Seedhouse

Spaceports Around the World, A Global Growth Industry

This brief presents a concise description of the existing spaceport market, the technologies being tested and developed at them, and the private companies that are making them possible. While NASA has its own plan for the future of space exploration, one that includes a new shuttle, an interplanetary spacecraft, and astronauts going to Mars, many people believe that the real future of space exploration is currently centered around dozens of commercial spaceports, financed by entrepreneurs inspired not only by profit but by the dream of creating a new space age, one not limited by bureaucracies or by budget allocations. Commercial spaceports in Florida, Texas, Oklahoma, Virginia and [...] More on www.springer.com/978-3-319-46845-7

M.H. Seyedi, D.T. Huei Lai

A Novel Intrabody Communication Transceiver for Biomedical Applications

This monograph explores Intrabody communication (IBC) as a novel non-RF wireless data communication technique using the human body itself as the communication channel or transmission medium. In particular, the book investigates Intrabody Communication considering limb joint effects within the transmission frequency range 0.3-200 MHz. Based on in-vivo experiments which determine the effects of size, situations, and locations of joints on the IBC, the book proposes a new IBC circuit model explaining elbow joint effects. This model not only takes the limb joint effects of the body into account but also considers the influence of measurement equipment in higher frequency band thus [...] More on www.springer.com/978-981-10-2823-6

C. Sheng

Advances in Transitional Flow Modeling

Applications to Helicopter Rotors

This book provides a comprehensive description of numerical methods and validation processes for predicting transitional flows based on the Langtry–Menter local correlation-based transition model, integrated with both one-equation Spalart–Allmaras (S–A) and two-equation Shear Stress Transport (SST) turbulence models. A comparative study is presented to combine the respective merits of the two coupling methods in the context of predicting the bound-
ary-layer transition phenomenon from fundamental benchmark flows to realistic helicopter rotors. The book will of interest to industrial practitioners working in aerodynamic design and the analysis of fixed-wing or rotary wing aircraft, while [...] More on www.springer.com/978-3-319-32575-0

Softcover
2017. XIII, 130 p. 114 illus., 101 illus. in color. (SpringerBriefs in Applied Sciences and Technology) ► 53,49 €
ISBN 978-3-319-32575-0
Gewöhnlich versandfertig in 3-5 Werktagen.

S.K. Shukla

Fundamentals of Fibre-Reinforced Soil Engineering

This book is intended to serve as a one-stop reference on fibre-reinforced soils. Over the past 30-35 years, the engineering behaviour of randomly distributed/oriented fibre-reinforced soil, also called simply fibre-reinforced soil, has been investigated in detail by researchers and engineers worldwide. Waste fibres (plastic waste fibres, old tyre fibres, etc.) create disposal and environmental problems. Utilization of such fibres in construction can help resolve these concerns. Research studies and some field applications have shown that the fibres can be utilized in large quantities in geotechnical and civil engineering applications in a cost-effective and environmentally friendly [...] More on www.springer.com/978-981-10-3061-1

Hardcover
2017. XI, 181 p. 61 illus., 13 illus. in color. (Developments in Geotechnical Engineering) ► 123,04 €
ISBN 978-981-10-3061-1
Gewöhnlich versandfertig in 3-5 Werktagen.

V. Simon, B. Weigand, H. Gomaa

Dimensional Analysis for Engineers

This monograph provides the fundamentals of dimensional analysis and illustrates the method by numerous examples for a wide spectrum of applications in engineering. The book covers thoroughly the fundamental definitions and the Buckingham theorem, as well as the choice of the system of basic units. The authors also include a presentation of model theory and similarity solutions. The target audience primarily comprises researchers and practitioners but the book may also be suitable as a textbook at university level. More on www.springer.com/978-3-319-52026-1

Hardcover
2017. XIV, 134 p. 29 illus., 1 illus. in color. (Mathematical Engineering) ► 93,08 €
ISBN 978-3-319-52026-1
Gewöhnlich versandfertig in 3-5 Werktagen. March 10, 2017

G.L. Sivakumar Babu, S. Saride, B.M. Basha (Eds.)

Sustainability Issues in Civil Engineering

This compilation on sustainability issues in civil engineering comprises contributions from international experts who have been working in the area of sustainability in civil engineering. Many of the contri-
Contributions have been presented as keynote lectures at the International Conference on Sustainable Civil Infrastructure (ICSCI) held in Hyderabad, India. The book has been divided into core themes of Sustainable Transportation Systems, Sustainable Geosystems, Sustainable Environmental and Water Resources and Sustainable Structural Systems. Use of sustainability principles in engineering has become an important component of the process of design and in this context, design and analysis [...] More on www.springer.com/978-981-10-1928-9 Hardcover 2017. XV, 367 p. 211 illus., 120 illus. in color. (Springer Transactions in Civil and Environmental Engineering) ► 160,49 € ISBN 978-981-10-1928-9 Gewöhnlich versandfertig in 3-5 Werktagen.

Electronic Control Fires A Design, Manufacturing and Forensic Technical Perspective The failures of electronic controls, which can cause loss of life and property, are discussed from the perspective of both the design and manufacturing functions and clarified for the responsible forensic team. Many pitfalls of the fast-paced product introduction environment for industrial and consumer products are discussed to help minimize the number of electronic control fires and other menacing events of today. The author clearly links the design, manufacturing and forensic technical communities in the development of electronic control devices, which include a wide array of products, from auto key fobs to furnace electronic control boards. The information included ensures a [...] More on www.springer.com/978-3-319-52844-1 Softcover 2017. XXI, 70 p. 80 illus. in color. (SpringerBriefs in Fire) ► 53,49 € ISBN 978-3-319-52844-1 Gewöhnlich versandfertig in 3-5 Werktagen. March 12, 2017

Protocol Design and Analysis for Cooperative Wireless Networks This book focuses on the design and analysis of protocols for cooperative wireless networks, especially at the medium access control (MAC) layer and for crosslayer design between the MAC layer and the physical layer. It highlights two main points that are often neglected in other books: energy-efficiency and spatial random distribution of wireless devices. Effective methods in stochastic geometry for the design and analysis of wireless networks are also explored. After providing a comprehensive review of existing studies in the literature, the authors point out the challenges that are worth further investigation. Then, they introduce several novel solutions for cooperative wireless [...] More on www.springer.com/978-3-319-47725-1 Hardcover 2017. IX, 131 p. 40 illus., 35 illus. in color. (Wireless Networks) ► 93,08 € ISBN 978-3-319-47725-1 Gewöhnlich versandfertig in 3-5 Werktagen.
Understanding Phase Contrast MR Angiography
A Practical Approach with MATLAB examples
Providing many unique MATLAB codes and functions throughout, this book covers the basics of Magnetic Resonance Imaging (MRI), leading to an in-depth understanding of the concepts and tools required for analysis and interpretation of Phase Contrast MR Angiography (PC-MRA). The concept of PC-MRA is often difficult, but essential for practicing engineers and scientists working in MR related areas. The concepts are better understood by uniquely combining the physical principles of fluid flow and MR imaging, laid out by modeling the theory and applications using a commonly used software tool MATLAB®. The book starts with a detailed theory of PC-MRA followed by a description of various [...] More on www.springer.com/978-3-319-25481-4

Quantitative and Qualitative Factors that Leads to Slip and Fall Incidents
This book investigates the factors that lead to slip and fall incidents and establishes a relationship between the coefficient of friction (COF), floor slipperiness and floor roughness. It also examines human perception of slipperiness through measured coefficient of friction (COF). On the basis of questionnaire surveys among manufacturing workers, it identifies potential risk factors and assesses human perceptions of slipperiness. It also uses a tribology approach to relate the interaction between contaminants, floor and footwear materials. More on www.springer.com/978-981-10-3285-1

Optimal Charging Control of Electric Vehicles in Smart Grids
This book introduces the optimal online charging control of electric vehicles (EVs) and battery energy storage systems (BESSs) in smart grids. The ultimate goal is to minimize the total energy cost as well as reduce the fluctuation of the total power flow caused by the integration of the EVs and renewable energy generators. Using both theoretic analysis and data-driven numerical results, the authors reveal the effectiveness and efficiency of the proposed control techniques. A major benefit of these control techniques is their practicality, since they do not rely on any non-causal knowledge of future information. Researchers, operators of power grids, and EV users will find this to be an [...] More on www.springer.com/978-3-319-45861-8

Decision Support System for Diagnosis and Treatment of Hearing Disorders
The Case of Tinnitus
The book presents a knowledge discovery based approach to build a recommender system supporting a physician in treating tinnitus patients with the highly successful method called Tinnitus Retraining Therapy. It describes experiments on extracting novel knowledge from the historical dataset of patients treated by Dr. P. Jastreboff so that to better understand factors behind therapy’s effectiveness and better personalize treatments for different profiles of
patients. The book is a response for a growing demand of an advanced data analytics in the healthcare industry in order to provide better care with the data driven decision-making solutions. The potential economic benefits of applying [...] More on www.springer.com/978-3-319-51462-8

Hardcover
2017. X, 162 p. 33 illus. (Studies in Computational Intelligence, Band 685)
► 93,08 €
ISBN 978-3-319-51462-8
Erscheinungstermin: February 2, 2017

Forthcoming

Frontiers in Nano-therapeutics
This brief highlights recent research advances in the area of nano-therapeutics. Nanotechnology holds immense potential for application in a wide range of biological and engineering applications such as molecular sensors for disease diagnosis, therapeutic agents for the treatment of diseases, a vehicle for delivering therapeutics and imaging agents for theranostic applications, both in-vitro and in-vivo. The brief is grouped into the following sections namely, A) Discrete Nanosystems; B) Anisotropic Nanoparticles; C) Nano-films/coated/layered and D) Nano-composites.
More on www.springer.com/978-3-319-51462-8

Softcover
2017. Approx. 125 p. (Nanotheranostics)
► 53,49 €
ISBN 978-981-10-3282-0
Erscheinungstermin: April 23, 2017

C. Thuemmler, C. Bai (Eds.)

Health 4.0: How Virtualization and Big Data are Revolutionizing Healthcare
This book describes how the creation of new digital services—through vertical and horizontal integration of data coming from sensors on top of existing legacy systems—that has already had a major impact on industry is now extending to healthcare. The book describes the fourth industrial revolution (i.e. Health 4.0), which is based on virtualization and service aggregation. It shows how sensors, embedded systems, and cyber-physical systems are fundamentally changing the way industrial processes work, their business models, and how we consume, while also affecting the health and care domains. Chapters describe the technology behind the shift of point of care to point of need and away [...] More on www.springer.com/978-3-319-47616-2

Hardcover
2017. XII, 254 p. 78 illus., 52 illus. in color. (Springer Theses)
► 123,04 €
ISBN 978-3-319-47616-2
Gewöhnlich versandfertig in 3-5 Werktagen.

A. Tepljakov

Fractional-order Modeling and Control of Dynamic Systems
This book reports on an outstanding research devoted to modeling and control of dynamic systems using fractional-order calculus. It describes the development of model-based control design methods for systems described by fractional dynamic models. More than 300 years had passed since Newton and Leibniz developed a set of mathematical tools we now know as calculus. Ever since then the idea of non-integer derivatives and integrals, universally referred to as fractional calculus, has been of interest to many researchers. However, due to various issues, the usage of fractional-order models in real-life applications was limited. Advances in modern computer science made it possible to apply [...] More on www.springer.com/978-3-319-52949-3

Hardcover
2017. XIX, 173 p. 79 illus., 52 illus. in color. (Springer Theses)
► 106,99 €
ISBN 978-3-319-52949-3
Gewöhnlich versandfertig in 3-5 Werktagen.

T. Traczyk, W. Ogryczak, P. Pałka, T. Śliwiński (Eds.)

Digital Preservation: Putting It to Work
This book addresses the process of maintaining digital objects through time to ensure continued access, an aspect that has become a crucial issue in recent years. It offers a concise yet comprehensive discussion of key concepts and requirements for long-term digital preservation, and presents a pioneering framework for digital repositories that enables the long-term archiving and metadata management for large volumes of digital resources based on a system that has already been completely designed and launched. In the framework, the reliability of information readouts is ensured by the repository with two-level data recording replication and monitoring mechanisms in the repository [...] More on www.springer.com/978-3-319-51800-8

Hardcover
2017. XI, 158 p. 13 illus. (Studies in Computational Intelligence, Band 700)
► 93,08 €
ISBN 978-3-319-51800-8
Gewöhnlich versandfertig in 3-5 Werktagen.

I. Traore, A. Awad, I. Younang (Eds.)

Information Security Practices
Emerging Threats and Perspectives
This book introduces novel research targeting technical aspects of protecting information security and establishing trust in the digital space. New paradigms, and emerging threats and solutions are presented in topics such as application security and threat management; modern authentication paradigms; digital fraud detection; social engineering and insider threats; cyber threat intelligence; intrusion detection; behavioral biometrics recognition; hardware security analysis. The book presents both the important core and the specialized issues in the areas of protection, assurance, and trust in information security practice. It is intended to be a valuable resource and reference for [...] More on www.springer.com/978-3-319-48946-9

Hardcover
2017. VII, 104 p. 51 illus., 31 illus. in color.
► 93,08 €
ISBN 978-3-319-48946-9
Gewöhnlich versandfertig in 3-5 Werktagen.

Forthcoming
G. Valentini

Achieving Consensus in Robot Swarms
Design and Analysis of Strategies for the best-of-n Problem
This book focuses on the design and analysis of collective decision-making strategies for the best-of-n problem. After providing a formalization of the structure of the best-of-n problem supported by a comprehensive survey of the swarm robotics literature, it introduces the functioning of a collective decision-making strategy and identifies a set of mechanisms that are essential for a strategy to solve the best-of-n problem. The best-of-n problem is an abstraction that captures the frequent requirement of
a robot swarm to choose one option from a finite set when optimizing benefits and costs. The book leverages the identification of these mechanisms to develop a modular and [...] More on www.springer.com/978-3-319-53608-8

Hardcover
2017. XIV, 146 p. 46 illus., 37 illus. in color. (Studies in Computational Intelligence, Band 706) ► 96.29 € ISBN 978-3-319-53608-8
	Gewöhnlich versandfertig in 3-5 Werktagen. March 16, 2017

Forthcoming
Z. Wang

Dual-Polarization Two-Port Fiber-Optic Gyroscope

This thesis demonstrates and investigates novel dual-polarization interferometric fiber-optic gyroscope (IFOG) configurations, which utilize optical compensation between two orthogonal polarizations to suppress errors caused by polarization nonreciprocity. Further, it provides a scheme for dual-polarization two-port IFOGs and details their unique benefits. Dual-polarization IFOGs break through the restriction of the ’minimal scheme,’ which conventional IFOGs are based on. These innovative new IFOGs have unique properties: They require no polarizer and have two ports available for signal detection. As such, they open new avenues for IFOGs to achieve lower costs and higher sensitivity.

More on www.springer.com/978-981-10-2835-9

Hardcover
	Erscheinungstermin: April 18, 2017

M. Wen, X. Cheng, L. Yang

Index Modulation for 5G Wireless Communications

This book presents a thorough examination of index modulation, an emerging 5G modulation technique. It includes representative transmitter and receiver design, optimization, and performance analysis of index modulation in various domains. First, the basic spatial modulation system for the spatial domain is introduced. Then, the development of a generalized pre-coding aided quadrature spatial modulation system as well as a virtual spatial modulation system are presented. For the space-time domain, a range of differential spatial modulation systems are examined, along with the pre-coding design. Both basic and enhanced index modulated OFDM systems for the frequency domain are discussed.[...]

More on www.springer.com/978-3-319-51354-6

Hardcover
2017. X, 154 p. 56 illus. (Wireless Networks) ► 93.08 € ISBN 978-3-319-51354-6
	Gewöhnlich versandfertig in 3-5 Werktagen.

D. Watzenig, B. Brandstätter (Eds.)

Comprehensive Energy Management – Eco Routing & Velocity Profiles

The book discusses the emerging topic of comprehensive energy management in electric vehicles from the viewpoint of academia and from the industrial perspective. It provides a seamless coverage of all relevant systems and control algorithms for comprehensive energy management, their integration on a multi-core system and their reliability assurance (validation and test). Relevant European projects contributing to the evolvement of comprehensive energy management in fully electric vehicles are also included.

More on www.springer.com/978-3-319-53164-9

Softcover
2017. 100 p. 147 illus., in color. (Automotive Engineering : Simulation and Validation Methods) ► 53.49 € ISBN 978-3-319-53164-9
	Erscheinungstermin: May 5, 2017

T. Westermann

User Acceptance of Mobile Notifications

This book presents an alternative approach to studying smartphone-app user notifications. It starts with insights into user acceptance of mobile notifications in order to provide tools to support users in managing these. It extends previous research by investigating factors that influence users’ perception of notifications and proposes tools addressing the shortcomings of current systems. It presents a technical framework and testbed as an approach for evaluating the usage of mobile applications and notifications, and then discusses a series of studies based on this framework that investigate factors influencing users’ perceptions of mobile notifications. Lastly, a set of design[...]

More on www.springer.com/978-981-10-3850-1

Hardcover
2017. XVI, 144 p. 39 illus., 20 illus. in color. (T-Labs Series in Telecommunication Services) ► 93.08 € ISBN 978-981-10-3850-1
	Erscheinungstermin: March 21, 2017

J. Whiteley

Finite Element Methods

A Practical Guide

This book presents practical applications of the finite element method to general differential equations. The underlying strategy of deriving the finite element solution is introduced using linear ordinary differential equations, thus allowing the basic concepts of the finite element solution to be introduced without being obscured by the additional mathematical detail required when applying this technique to partial differential equations. The author generalizes the presented approach to partial differential equations which include nonlinearities. The book also includes
variations of the finite element method such as different classes of meshes and basic functions. Practical [...] More on www.springer.com/978-3-319-49970-3


W. Wieczorek

Grammatical Inference Algorithms, Routines and Applications
This book focuses on grammatical inference, presenting classic and modern methods of grammatical inference from the perspective of practitioners. To do so, it employs the Python programming language to present all of the methods discussed. Grammatical inference is a field that lies at the intersection of multiple disciplines, with contributions from computational linguistics, pattern recognition, machine learning, computational biology, formal learning theory and many others. Though the book is largely practical, it also includes elements of learning theory, combinatorics on words, the theory of automata and formal languages, plus references to real-world problems. The listings[...]
More on www.springer.com/978-3-319-46800-6

Hardcover 2017. XI, 145 p. 18 illus. (Studies in Computational Intelligence, Band 673) ► 93,08 € ISBN 978-3-319-46800-6 Gewöhnlich versandfertig in 3-5 Werktagen.

Variational Methods in Molecular Modeling
This book presents tutorial overviews for many applications of variational methods to molecular modeling. Topics discussed include the Gibbs-Bogoliubov-Feynman variational principle, square-gradient models, classical density functional theories, self-consistent-field theories, phase-field methods, Ginzburg-Landau and Helfrich-type phenomenological models, dynamical density functional theory, and variational Monte Carlo methods. Illustrative examples are given to facilitate understanding of the basic concepts and quantitative prediction of the properties and rich behavior of diverse many-body systems ranging from inhomogeneous fluids, electrolytes and ionic liquids in micropores,[...]
More on www.springer.com/978-981-10-2500-6


Radio Resource Management for Mobile Traffic Offloading in Heterogeneous Cellular Networks
This SpringerBrief offers two concrete design examples for traffic offloading. The first is an optimal resource allocation for small-cell based traffic offloading that aims at minimizing mobile users’ data cost. The second is an optimal resource allocation for device-to-device assisted traffic offloading that also minimizes the total energy consumption and cellular link usage (while providing an overview of the challenging issues). Both examples illustrate the importance of proper resource allocation to the success of traffic offloading, show the consequent performance advantages of executing optimal resource allocation, and present the methodologies to achieve the corresponding[...]
More on www.springer.com/978-3-319-51036-1


Recycled Aggregate Concrete Structures
This book describes how, given the global challenge of a shortage of natural resources in the 21st century, the recycling of waste concrete is one of the most important means of implementing sustainable construction development strategies. Firstly, the book presents key findings on the micro- and meso-structure of recycled aggregate concrete (RAC), while the second part focuses on the mechanical properties of RAC: the strength, elastic modulus, Poisson’s ratio, stress-strain curve, etc. The third part of the book explores research on the durability of RAC: carbonization,
chloride penetration, shrinkage and creep. It then presents key information on the mechanical behavior and seismic [...]

More on [website link]

**Hardcover**

2017. XVIII, 607 p. 502 illus. (Springer Tracts in Civil Engineering)

➤ 123,04 €

ISBN 978-3-662-53985-9

Erscheinungstermin: May 10, 2017

---

**Biomechatronics in Medical Rehabilitation**

Biomodelling, Interface, and Control

This book focuses on the key technologies in developing biomechatronic systems for medical rehabilitation purposes. It includes a detailed analysis of biosignal processing, biomechanics modelling, neural and musculoskeletal interfaces, artificial actuators, robot-assisted training, clinical setup/implementation and rehabilitation robot control. Encompassing highly multidisciplinary themes in the engineering and medical fields, it presents researchers’ insights into the emerging technologies and developments that are being utilized in biomechatronics for medical purposes. Presenting a detailed analysis of five key areas in rehabilitation robotics: (i) biosignal processing; (ii) biomechanics; [...]

More on [website link]

**Hardcover**

2017. XVIII, 203 p. 107 illus., 93 illus. in color.

➤ 123,04 €

ISBN 978-3-319-52883-0

Gewöhnlich versandfertig in 3-5 Werktagen.

---

**Cellular Image Classification**

This book introduces new techniques for cellular image feature extraction, pattern recognition and classification. The authors use the antinuclear antibodies (ANAs) in patient serum as the subjects and the Indirect Immunofluorescence (IIF) technique as the imaging protocol to illustrate the applications of the described methods. Throughout the book, the authors provide evaluations for the proposed methods on two publicly available human epithelial (HEp-2) cell datasets: ICPR2012 dataset from the ICPR’12 HEp-2 cell classification contest and ICIP2013 training dataset from the ICIP’13 Competition on cells classification by fluorescent image analysis. First, the reading of imaging [...]

More on [website link]

**Hardcover**

2017. IX, 137 p. 60 illus.

➤ 93,08 €

ISBN 978-3-319-47628-5

Gewöhnlich versandfertig in 3-5 Werktagen.

---

**Dynamics and Control of Lorentz-Augmented Spacecraft Relative Motion**

This book develops a dynamical model of the orbital motion of Lorentz spacecraft in both unperturbed and J2-perturbed environments. It explicitly discusses three kinds of typical space missions involving relative orbital control: spacecraft hovering, rendezvous, and formation flying. Subsequently, it puts forward designs for both open-loop and closed-loop control schemes propelled or augmented by the geomagnetic Lorentz force. These control schemes are entirely novel and represent a significantly departure from previous approaches.

More on [website link]
Neuro-inspired Computing Using Resistive Synaptic Devices

This book summarizes the recent breakthroughs in hardware implementation of neuro-inspired computing using resistive synaptic devices. The authors describe how two-terminal solid-state resistive memories can emulate synaptic weights in a neural network. Readers will benefit from state-of-the-art summaries of resistive synaptic devices, from the individual cell characteristics to the large-scale array integration. This book also discusses peripheral neuron circuits design challenges and design strategies. Finally, the authors describe the impact of device non-ideal properties (e.g., noise, variation, yield) and their impact on the learning performance at the system-level, using 4[...]

More on www.springer.com/978-3-319-54312-3

Discrete Optimization in Architecture

Extremely Modular Systems

This book is comprised of two parts, both of which explore modular systems: Pipe-Z (PZ) and Truss-Z (TZ), respectively. It presents several methods of creating PZ and TZ structures subjected to discrete optimization. The algorithms presented employ graph-theoretic and heuristic methods. The underlying idea of both systems is to create free-form structures using the minimal number of types of modular elements. PZ is more conceptual, as it forms single-branch mathematical knots with a single type of module. Conversely, TZ is a skeletal system for creating free-form pedestrian ramps and ramp networks among any number of terminals in space. In physical space, TZ uses two types of modules[...]


Discrete Optimization in Architecture

Architectural & Urban Layout

This book presents three projects that demonstrate the fundamental problems of architectural design and urban composition – the layout design, evaluation, and optimization. Part I describes the functional layout design of a residential building, and an evaluation of the quality of a town square (plaza). The algorithm for the functional layout design is based on backtracking using a constraint satisfaction approach combined with coarse grid discretization. The algorithm for the town square evaluation is based on geometrical prop-
Formal Verification of Simulink/Stateflow Diagrams
A Deductive Approach

This book presents a state-of-the-art technique for formal verification of continuous-time Simulink/Stateflow diagrams, featuring an expressive hybrid system modelling language, a powerful specification logic and deduction-based verification approach, and some impressive, realistic case studies. Readers will learn the HCSP/HHL-based deductive method and the use of corresponding tools for formal verification of Simulink/Stateflow diagrams. They will also gain some basic ideas about fundamental elements of formal methods such as formal syntax and semantics, and especially the common techniques applied in formal modelling and verification of hybrid systems. By investigating the [...] More on www.springer.com/978-3-319-47014-6

Forthcoming
D. Zhang, Q.-G. Wang, L. Yu

Filtering and Control of Wireless Networked Systems

This self-contained book, written by leading experts, offers a cutting-edge, in-depth overview of the filtering and control of wireless networked systems. It addresses the energy constraint and filter/controller gain variation problems, and presents both the centralized and the distributed solutions. The first two chapters provide an introduction to networked control systems and basic information on system analysis. Chapters (3–6) then discuss the centralized filtering of wireless networked systems, presenting different approaches to deal with energy efficiency and filter/controller gain variation problems. The next part (chapters 7–10) explores the distributed filtering of wireless [...] More on www.springer.com/978-3-319-53122-9

Forthcoming
R. Zhang, L. Cai, J. Pan

Resource Management for Energy and Spectrum Harvesting Sensor Networks

This SpringerBrief offers a comprehensive review and in-depth discussion of the current research on resource management. The authors explain how to best utilize harvested energy and temporally available licensed spectrum. Throughout the brief, the primary focus is energy and spectrum harvesting sensor networks (ESHNs) including energy harvesting (EH)-powered spectrum sensing and dynamic spectrum access. To efficiently collect data through the available licensed spectrum, this brief examines the joint management of energy and spectrum. An EH-powered spectrum sensing and management scheme for Heterogeneous Spectrum Harvesting Sensor Networks (HSHSNs) is presented in this brief. The [...] More on www.springer.com/978-3-319-53370-2

Softcover
2017, IX, 79 p. 25 illus. (SpringerBriefs in Electrical and Computer Engineering)
► 53,49 €
ISBN 978-3-319-53370-2
Erscheinungstermin: March 30, 2017

Advanced Sensing Techniques for Cognitive Radio

This SpringerBrief investigates advanced sensing techniques to detect and estimate the primary receiver for cognitive radio systems. Along with a comprehensive overview of existing spectrum sensing techniques, this brief focuses on the design of new signal processing techniques, including the region-based sensing, jamming-based probing, and relay-based probing. The proposed sensing techniques aim to detect the nearby primary receiver and estimate the cross-channel gain between the cognitive transmitter and primary receiver. The performance of the proposed algorithms is evaluated by simulations in terms of several performance parameters, including detection probability, interference [...] More on www.springer.com/978-3-319-42783-6

Softcover
2017, X, 76 p. 39 illus., 26 illus. in color. (SpringerBriefs in Electrical and Computer Engineering)
► 53,49 €
ISBN 978-3-319-42783-6
Gewöhnlich versandfertig in 3-5 Werktagen.

Control Synthesis of Switched Systems

This book offers its readers a detailed overview of the synthesis of switched systems, with a focus on switching stabilization and intelligent control. The problems investigated are not only previously unsolved theoretically but also of practical importance in many applications: voltage conversion, naval piloting and navigation and robotics, for example. The book considers general switched-system models and provides...
more efficient design methods to bring together theory and application more closely than was possible using classical methods. It also discusses several different classes of switched systems. For general switched linear systems and switched nonlinear systems comprising[...]

More on www.springer.com/978-3-319-44828-2

Hardcover
2017. XI, 164 p. 49 illus., 46 illus. in color. (Studies in Systems, Decision and Control, Band 80)

► 93,08 €
ISBN 978-3-319-44828-2

Gewöhnlich versandfertig in 3-5 Werktagen.

H. Zhu, M. Chen, Y. Zhao, F. Niu

Stability Assessment for Underground Excavations and Key Construction Techniques

This book examines how the state of underground structures can be determined with the assistance of force, deformation and energy. It then analyzes mechanized shield methods, the New Austrian tunneling method (NATM) and conventional methods from this new perspective. The book gathers a wealth of cases reflecting the experiences of practitioners and administrators alike. Based on statistical and engineering studies of these cases, as well as lab and field experiments, it develops a stability assessment approach incorporating a stable equilibrium, which enables engineers to keep the structure and surrounding rocks safe as long as the stable equilibrium and deformation compliance are[...]

More on www.springer.com/978-981-10-3010-9

Hardcover
2017. XVII, 157 p. 107 illus. (Springer Tracts in Civil Engineering)

► 123,04 €
ISBN 987-981-10-3010-9

Gewöhnlich versandfertig in 3-5 Werktagen.

B. Zohuri

Dimensional Analysis Beyond the Pi Theorem

Dimensional Analysis and Physical Similarity are well understood subjects, and the general concepts of dynamical similarity are explained in this book. Our exposition is essentially different from those available in the literature, although it follows the general ideas known as Pi Theorem. There are many excellent books that one can refer to; however, dimensional analysis goes beyond Pi theorem, which is also known as Buckingham’s Pi Theorem. Many techniques via self-similar solutions can bound solutions to problems that seem intractable. A time-developing phenomenon is called self-similar if the spatial distributions of its properties at different points in time can be obtained from[...]

More on www.springer.com/978-3-319-45725-3

Hardcover
2017. XIX, 266 p. 78 illus., 36 illus. in color.

► 123,04 €
ISBN 987-3-319-45725-3

Gewöhnlich versandfertig in 3-5 Werktagen.

F. dell’Isola, M. Sofonea, D. Steigmann (Eds.)

Mathematical Modelling in Solid Mechanics

This book presents new research results in multidisciplinary fields of mathematical and numerical modelling in mechanics. The chapters treat the top-ics: mathematical modelling in solid, fluid and contact mechanics, nonconvex variational analysis with emphasis to nonlinear solid and structural mechanics, numerical modelling of problems with non-smooth constitutive laws, approximation of variational and hemivariational inequalities, numerical analysis of discrete schemes, numerical methods and the corresponding algorithms, applications to mechanical engineering, numerical aspects of non-smooth mechanics, with emphasis on developing accurate and reliable computational tools/mechanics of[...]

More on www.springer.com/978-981-10-2527-3

Softcover
2017. XVIII, 280 p. 86 illus., 43 illus. in color. (Advanced Structured Materials, Band 69)

► 53,49 €
ISBN 987-981-10-2527-3

Gewöhnlich versandfertig in 3-5 Werktagen.

S. Laurent, C. Henoumont, D. Stanicki, S. Boutry, E. Lipani, S. Belaid, R.N. Muller, L. Vander Elst

MRI Contrast Agents
From Molecules to Particles

This book describes the multiple aspects of (i) preparation of the magnetic core, (ii) the stabilization with different coatings, (iii) the physico-chemical characterization and (iv) the vectorization to obtain specific nanosystems. Several bio-applications are also presented in this book. In the early days of Magnetic Resonance Imaging (MRI), paramagnetic ions were proposed as contrast agents to enhance the diagnostic quality of MR images. Since then, academic and industrial efforts have been devoted to the development of new and more efficient molecular, supramolecular and nanoparticular systems. Old concepts and theories, like paramagnetic relaxation, were revisited and exploited[...]

More on www.springer.com/978-981-10-2527-3

Softcover
2017. VII, 125 p. 63 illus., 44 illus. in color. (Nanotheranostics)

► 53,49 €
ISBN 987-981-10-2527-3

Gewöhnlich versandfertig in 3-5 Werktagen.

Stability Assessment for Underground Excavations and Key Construction Techniques

This book examines how the state of underground structures can be determined with the assistance of force, deformation and energy. It then analyzes mechanized shield methods, the New Austrian tunneling method (NATM) and conventional methods from this new perspective. The book gathers a wealth of cases reflecting the experiences of practitioners and administrators alike. Based on statistical and engineering studies of these cases, as well as lab and field experiments, it develops a stability assessment approach incorporating a stable equilibrium, which enables engineers to keep the structure and surrounding rocks safe as long as the stable equilibrium and deformation compliance are[...]

More on www.springer.com/978-3-319-44828-2

Hardcover
2017. XI, 164 p. 49 illus., 46 illus. in color. (Studies in Systems, Decision and Control, Band 80)

► 93,08 €
ISBN 978-3-319-44828-2

Gewöhnlich versandfertig in 3-5 Werktagen.

H. Zhu, M. Chen, Y. Zhao, F. Niu

Stability Assessment for Underground Excavations and Key Construction Techniques

This book examines how the state of underground structures can be determined with the assistance of force, deformation and energy. It then analyzes mechanized shield methods, the New Austrian tunneling method (NATM) and conventional methods from this new perspective. The book gathers a wealth of cases reflecting the experiences of practitioners and administrators alike. Based on statistical and engineering studies of these cases, as well as lab and field experiments, it develops a stability assessment approach incorporating a stable equilibrium, which enables engineers to keep the structure and surrounding rocks safe as long as the stable equilibrium and deformation compliance are[...]

More on www.springer.com/978-3-319-44828-2

Hardcover
2017. XI, 164 p. 49 illus., 46 illus. in color. (Studies in Systems, Decision and Control, Band 80)

► 93,08 €
ISBN 978-3-319-44828-2

Gewöhnlich versandfertig in 3-5 Werktagen.

H. Zhu, M. Chen, Y. Zhao, F. Niu

Stability Assessment for Underground Excavations and Key Construction Techniques

This book examines how the state of underground structures can be determined with the assistance of force, deformation and energy. It then analyzes mechanized shield methods, the New Austrian tunneling method (NATM) and conventional methods from this new perspective. The book gathers a wealth of cases reflecting the experiences of practitioners and administrators alike. Based on statistical and engineering studies of these cases, as well as lab and field experiments, it develops a stability assessment approach incorporating a stable equilibrium, which enables engineers to keep the structure and surrounding rocks safe as long as the stable equilibrium and deformation compliance are[...]

More on www.springer.com/978-3-319-44828-2

Hardcover
2017. XI, 164 p. 49 illus., 46 illus. in color. (Studies in Systems, Decision and Control, Band 80)

► 93,08 €
ISBN 978-3-319-44828-2

Gewöhnlich versandfertig in 3-5 Werktagen.

H. Zhu, M. Chen, Y. Zhao, F. Niu

Stability Assessment for Underground Excavations and Key Construction Techniques

This book examines how the state of underground structures can be determined with the assistance of force, deformation and energy. It then analyzes mechanized shield methods, the New Austrian tunneling method (NATM) and conventional methods from this new perspective. The book gathers a wealth of cases reflecting the experiences of practitioners and administrators alike. Based on statistical and engineering studies of these cases, as well as lab and field experiments, it develops a stability assessment approach incorporating a stable equilibrium, which enables engineers to keep the structure and surrounding rocks safe as long as the stable equilibrium and deformation compliance are[...]

More on www.springer.com/978-3-319-44828-2

Hardcover
2017. XI, 164 p. 49 illus., 46 illus. in color. (Studies in Systems, Decision and Control, Band 80)

► 93,08 €
ISBN 978-3-319-44828-2

Gewöhnlich versandfertig in 3-5 Werktagen.
Machining, Joining and Modifications of Advanced Materials

This book presents the latest advances in mechanical and materials engineering applied to the machining, joining and modification of modern engineering materials. The contributions cover the classical fields of casting, forming and injection moulding as representative manufacturing methods, whereas additive manufacturing methods (rapid prototyping and laser sintering) are treated as more innovative and recent technologies that are paving the way for the manufacturing of shapes and features that traditional methods are unable to deliver. The book also explores water jet cutting as an innovative cutting technology that avoids the heat build-up typical of classical mechanical cutting. It[...]

More on www.springer.com/978-981-10-1081-1

Hardcover
2016. IX, 269 p. 173 illus., 138 illus. in color. (Advanced Structured Materials, Band 61)

160,49 €
ISBN 978-981-10-1081-1

Gewöhnlich versandfertig in 3-5 Werktagen.