

Heidelberg Toolbox Manual

This book constitutes the revised selected papers of the 10th International Symposium on Formal Aspects of Component Software, FACS 2013, held in Nanchang, China, in October 2013. The 19 full papers and three invited talks presented were carefully reviewed and selected from 51 submissions. The papers are concerned with how formal methods can be used to make component-based development fit for the new architectures of today and the systems that are now pervading the socio-economic worlds.

The open access two-volume set LNCS 12224 and 12225 constitutes the refereed proceedings of the 32st International Conference on Computer Aided Verification, CAV 2020, held in Los Angeles, CA, USA, in July 2020.* The 43 full papers presented together with 18 tool papers and 4 case studies, were carefully reviewed and selected from 240 submissions. The papers were organized in the following topical sections: Part I: AI verification; blockchain and Security; Concurrency; hardware verification and decision procedures; and hybrid and dynamic systems. Part II: model checking; software verification; stochastic systems; and synthesis. *The conference was held virtually due to the COVID-19 pandemic.

This second edition is an intensively revised and updated version of the book MATLAB® and Design Recipes for Earth Sciences. It aims to introduce students to the typical course followed by a data analysis project in earth sciences. A project usually involves searching relevant literature, reviewing and ranking published books and journal articles, extracting relevant information from the literature in the form of text, data, or graphs, searching and processing the relevant original data using MATLAB, and compiling and presenting the results as posters, abstracts, and oral presentations using graphics design software. The text of this book includes numerous examples on the use of internet resources, on the visualization of data with MATLAB, and on preparing scientific presentations. As with the book MATLAB Recipes for Earth Sciences—4rd Edition (2015), which demonstrates the use of statistical and numerical methods on earth science data, this book uses state-of-the-art software packages, including MATLAB and the Adobe Creative Suite, to process and present geoscientific information collected during the course of an earth science project. The book's supplementary electronic material (available online through the publisher's website) includes color versions of all figures, recipes with all the MATLAB commands featured in the book, the example data, exported MATLAB graphics, and screenshots of the most important steps involved in processing the graphics.

This book is a concise and authoritative reference work and dictionary in the field of corporate social responsibility, sustainability, business ethics and corporate governance. It provides reliable definitions to more than 600 terms and concepts for researchers and professionals alike. By its definitions the dictionary helps users to understand the meanings of commonly used terms in CSR, and the roles and functions of CSR-related international organizations. Furthermore, it helps to identify keynotes on international guidelines, codes and principles relevant to CSR. The role of CSR in the business world has developed from a fig leaf marketing front into an important and indispensable aspect of corporate behavior over the past years. Sustainable strategies are valued, desired and deployed more and more by relevant players in business, politics, and societies all over the world. Both research and corporate practice therefore see CSR as a guiding principle for business success.

This book constitutes the proceedings of the 14th International Conference on Software Engineering and Formal Methods, SEFM 2016, held as part of STAF 2016, in Vienna, Austria, in July 2016. The 20 full and 5 short papers presented in this volume were carefully reviewed and

selected from 88 submissions. They were organized in topical sections named: concurrency and non-interference; program analysis; model checking; verification; interaction and adaptation; and development methods.

Efficient transfer between science and society is crucial for their future development. The rapid progress of information technology and computer systems offers a large potential and new perspectives for solving complex problems. Mathematical modelling and simulation have become important tools not only in scientific investigations but also in analysing, planning and controlling technological and economic processes. Mathematics, imbedded in an interdisciplinary concept, has become a key technology. The book covers the results of a variety of major projects in industrial mathematics following an initiative of the German Federal Ministry of Education and Research. All projects are collaborations of industrial companies and university-based researchers, and range from automotive industry to computer technology and medical visualisation. In general, the projects presented in this volume prove that new mathematical ideas and methods can be decisive for the solution of industrial and economic problems.

This two-volume-set (LNCS 9573 and 9574) constitutes the refereed proceedings of the 11th International Conference of Parallel Processing and Applied Mathematics, PPAM 2015, held in Krakow, Poland, in September 2015. The 111 revised full papers presented in both volumes were carefully reviewed and selected from 196 submissions. The focus of PPAM 2015 was on models, algorithms, and software tools which facilitate efficient and convenient utilization of modern parallel and distributed computing architectures, as well as on large-scale applications, including big data problems.

Connectivity has arrived in the vehicle - whether it is in-car internet or car-to-car communication. For the chassis too, the connected car is increasingly becoming a driver of innovation. Predictive and intelligent chassis systems and automated driving are just some of the topics being addressed. In addition to enhancing driving comfort and safety, interconnecting the powertrain with the chassis can also provide new functions, not only in cars but also in commercial vehicles. What is more, modularization, electrification of the powertrain, intelligent development methods and efforts to reduce fuel consumption are also driving innovations in chassis systems.

Annotation The three volume set LNCS 4491/4492/4493 constitutes the refereed proceedings of the 4th International Symposium on Neural Networks, ISNN 2007, held in Nanjing, China in June 2007. The 262 revised long papers and 192 revised short papers presented were carefully reviewed and selected from a total of 1.975 submissions. The papers are organized in topical sections on neural fuzzy control, neural networks for control applications, adaptive dynamic programming and reinforcement learning, neural networks for nonlinear systems modeling, robotics, stability analysis of neural networks, learning and approximation, data mining and feature extraction, chaos and synchronization, neural fuzzy systems, training and learning algorithms for neural networks, neural network structures, neural networks for pattern recognition, SOMs, ICA/PCA, biomedical applications, feedforward neural networks, recurrent neural networks, neural networks for optimization, support vector machines, fault diagnosis/detection, communications and signal processing, image/video processing, and applications of neural networks.

Differently oriented specialists and students involved in image processing and analysis need to have a firm grasp of concepts and methods used in this now widely utilized area. This book aims at being a single-source reference providing such foundations in the form of theoretical yet clear and easy to follow explanations of underlying generic concepts. Medical Image Processing, Reconstruction and Analysis – Concepts and Methods explains the general principles and methods of image processing and analysis, focusing namely on applications used in medical imaging. The content of this book is divided into three parts: Part I – Images as Multidimensional Signals provides the introduction to basic

image processing theory, explaining it for both analogue and digital image representations. Part II – Imaging Systems as Data Sources offers a non-traditional view on imaging modalities, explaining their principles influencing properties of the obtained images that are to be subsequently processed by methods described in this book. Newly, principles of novel modalities, as spectral CT, functional MRI, ultrafast planar-wave ultrasonography and optical coherence tomography are included. Part III – Image Processing and Analysis focuses on tomographic image reconstruction, image fusion and methods of image enhancement and restoration; further it explains concepts of low-level image analysis as texture analysis, image segmentation and morphological transforms. A new chapter deals with selected areas of higher-level analysis, as principal and independent component analysis and particularly the novel analytic approach based on deep learning. Briefly, also the medical image-processing environment is treated, including processes for image archiving and communication. Features Presents a theoretically exact yet understandable explanation of image processing and analysis concepts and methods Offers practical interpretations of all theoretical conclusions, as derived in the consistent explanation Provides a concise treatment of a wide variety of medical imaging modalities including novel ones, with respect to properties of provided image data

This volume of Advances in Intelligent and Soft Computing contains accepted papers presented at SOCO 2016, CISIS 2016 and ICEUTE 2016, all conferences held in the beautiful and historic city of San Sebastián (Spain), in October 2016. Soft computing represents a collection or set of computational techniques in machine learning, computer science and some engineering disciplines, which investigate, simulate, and analyze very complex issues and phenomena. After a through peer-review process, the 11th SOCO 2016 International Program Committee selected 45 papers. In this relevant edition a special emphasis was put on the organization of special sessions. Two special session was organized related to relevant topics as: Optimization, Modeling and Control Systems by Soft Computing and Soft Computing Methods in Manufacturing and Management Systems. The aim of the 9th CISIS 2016 conference is to offer a meeting opportunity for academic and industry-related researchers belonging to the various, vast communities of Computational Intelligence, Information Security, and Data Mining. The need for intelligent, flexible behaviour by large, complex systems, especially in mission-critical domains, is intended to be the catalyst and the aggregation stimulus for the overall event. After a through peer-review process, the CISIS 2016 International Program Committee selected 20 papers. In the case of 7th ICEUTE 2016, the International Program Committee selected 14 papers.

This book is not a textbook, but rather a coherent collection of papers from the field of partial differential equations. Nevertheless we believe that it may very well serve as a good introduction into some topics of this classical field of analysis which, despite of its long history, is highly modern and well prospering. Richard Courant wrote in 1950: "It has always been a temptation for mathematicians to present the crystallized product of their thought as a deductive general theory and to relegate the individual mathematical phenomenon into the role of an example. The reader who submits to the dogmatic form will be easily indoctrinated. Enlightenment, however, must come from an understanding of motives; live mathematical development springs from specific natural problems which can be easily understood, but whose solutions are difficult and demand new methods or more general significance. " We think that many, if not all, papers of this book are written in this spirit and will give the reader access to an important branch of analysis by exhibiting interesting problems worth to be studied. Most of the collected articles have an extensive introductory part describing the history of the presented problems as well as the state of the art and offer a well chosen guide to the literature. This way the papers became lengthier than customary these days, but the level of presentation is such that an advanced graduate student should find the various articles both readable and stimulating.

– Web and Network Intelligence Each track was coordinated by an Organizing Committee composed of, at least, two researchers in the field,

from different institutions.

Electric Power Systems: Advanced Forecasting Techniques and Optimal Generation Scheduling helps readers develop their skills in modeling, simulating, and optimizing electric power systems. Carefully balancing theory and practice, it presents novel, cutting-edge developments in forecasting and scheduling. The focus is on understanding and solving pivotal problems in the management of electric power generation systems. *Methods for Coping with Uncertainty and Risk in Electric Power Generation* outlining real-world problems, the book begins with an overview of electric power generation systems. Since the ability to cope with uncertainty and risk is crucial for power generating companies, the second part of the book examines the latest methods and models for self-scheduling, load forecasting, short-term electricity price forecasting, and wind power forecasting. *Toward Optimal Coordination between Hydro, Thermal, and Wind Power* Using case studies, the third part of the book investigates how to achieve the most favorable use of available energy sources. Chapters in this section discuss price-based scheduling for generating companies, optimal scheduling of a hydro producer, hydro-thermal coordination, unit commitment with wind generators, and optimal optimization of multigeneration systems. Written in a pedagogical style that will appeal to graduate students, the book also expands on research results that are useful for engineers and researchers. It presents the latest techniques in increasingly important areas of power system operations and planning.

It is a pleasure to present the proceedings of the 22nd European Conference on Object-Oriented Programming (ECOOP 2008) held in Paphos, Cyprus. The conference continues to serve a broad object-oriented community with a technical program spanning theory and practice and a healthy mix of industrial and academic participants. This year a strong workshop and tutorial program complemented the main technical track. We had 13 workshops and 8 tutorials, as well as the co-located Dynamic Language Symposium (DLS). Finally, the program was rounded out with a keynote by Rachid Guerraoui and a banquet speech by James Noble. As in previous years, two Dahl-Nygaard awards were selected by AITO, and for the first time, the ECOOP Program Committee gave a best paper award.

The proceedings include 27 papers selected from 138 submissions. The papers were reviewed in a single-blind process with three to five reviews per paper. Preliminary versions of the reviews were made available to the authors a week before the PC meeting to allow for short (500 words or less) author responses. The responses were discussed at the PC meeting and were instrumental in reaching decisions. The PC discussions followed Oscar Nierstrasz' Champion pattern. PC papers had five reviews and were held at a higher standard.

This volume analyses the positive effects that tourism generates on resident's quality of life, and how this influences tourists' quality of life as they enjoy an enriching experience in the destination they visit. It provides significant theoretical and empirical contributions, as well as, case studies related to quality of life in hospitality and tourism marketing and management. This volume is the result of the effort that many researchers from all over the world have done to spread some new light on this outstanding research line and add knowledge on the relationship between tourism and quality of life of both residents and tourists. This last is highlighted as a fundamental factor to take into account for the development of new tourism practices. This volume is a true reference for researchers, students and professionals working in tourism marketing and management.

The Handbook is written for academics, researchers, practitioners and advanced graduate students. It has been designed to be read by those new or starting out in the field of spatial analysis as well as by those who are already familiar with the field. The chapters have been written in such a way that readers who are new to the field will gain important overview and insight. At the

same time, those readers who are already practitioners in the field will gain through the advanced and/or updated tools and new materials and state-of-the-art developments included. This volume provides an accounting of the diversity of current and emergent approaches, not available elsewhere despite the many excellent journals and te- books that exist. Most of the chapters are original, some few are reprints from the Journal of Geographical Systems, Geographical Analysis, The Review of Regional Studies and Letters of Spatial and Resource Sciences. We let our contributors - velop, from their particular perspective and insights, their own strategies for m- ping the part of terrain for which they were responsible. As the chapters were submitted, we became the first consumers of the project we had initiated. We gained from depth, breadth and distinctiveness of our contributors' insights and, in particular, the presence of links between them.

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. This volume includes contributions on model based functional safety and fault-tolerant E/E architectures, advanced control making use of external information (from a cloud) as well and thermal management as a central part for energy optimization and finally some aspects on fuel cells. The second volume (ISBN) includes chapters on ECO driving and ECO routing covering different approaches for optimal speed profiles for a given route (mostly interconnecting with cloud data). The papers in this volume represent the proceedings of the 7th Industrial Conference on Data Mining. They are organized into topical sections on aspects of classification and prediction, clustering, web mining, data mining in medicine, applications of data mining, time series and frequent pattern mining, and association rule mining. Readers gain new insights into theories underlying data mining and discover state-of-the-technology applications.

This book constitutes the thoroughly refereed post-conference proceedings of the Joint Workshop on Theory of Security and Applications (formely known as ARSPA-WITS), TOSCA 2011, held in Saarbrücken, Germany, in March/April 2011, in association with ETAPS 2011. The 9 revised full papers presented together with 3 invited talks were carefully reviewed and selected from 24 submissions. The papers feature topics including various methods in computer security, including the formal specification, analysis and design of security protocols and their applications, the formal definition of various aspects of security such as access control mechanisms, mobile code security and denial-of-service attacks, and the modeling of information flow and its application. The author has maintained two open-source MATLAB Toolbox for more than 10 years: one for robotics and one for vision. The key strength of the Toolboxes provide a set of tools that allow the user to work with real problems, not trivial examples. For the student the book makes the algorithms accessible, the Toolbox code can be read to gain understanding, and the examples illustrate how it can be used —instant gratification in just a couple of lines of MATLAB code. The code can also be the starting point for new work, for researchers or students, by writing programs based on Toolbox functions, or modifying the Toolbox code itself.

The purpose of this book is to expand on the tutorial material provided with the toolboxes, add many more examples, and to weave this into a narrative that covers robotics and computer vision separately and together. The author shows how complex problems can be decomposed and solved using just a few simple lines of code, and hopefully to inspire up and coming researchers. The topics covered are guided by the real problems observed over many years as a practitioner of both robotics and computer vision. It is written in a light but informative style, it is easy to read and absorb, and includes a lot of Matlab examples and figures. The book is a real walk through the fundamentals of robot kinematics, dynamics and joint level control, then camera models, image processing, feature extraction and epipolar geometry, and bring it all together in a visual servo system. Additional material is provided at <http://www.petercorke.com/RVC>

This book constitutes the refereed proceedings of the 8th International Workshop on Hybrid Systems: Computation and Control, HSCC 2005, held in Zurich, Switzerland in March 2005. The 40 revised full papers presented together with 2 invited papers and the abstract of an invited talk were carefully reviewed and selected from 91 submissions. The papers focus on modeling, analysis, and implementation of dynamic and reactive systems involving both discrete and continuous behaviors. Among the topics addressed are tools for analysis and verification, control and optimization, modeling, engineering applications, and emerging directions in programming language support and implementation.

The sixteen-volume set comprising the LNCS volumes 11205-11220 constitutes the refereed proceedings of the 15th European Conference on Computer Vision, ECCV 2008, held in Munich, Germany, in September 2008. The 776 revised papers presented were carefully reviewed and selected from 2439 submissions. The papers are organized in topical sections on learning for vision; computational photography; human analysis; human sensing; stereo and reconstruction; optimization; matching and recognition; video attention; and poster sessions.

Presents a collection of papers from the SVM 2002 workshop.

This book constitutes the refereed proceedings of the 17th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, TACAS 2011, held in Saarbrücken, Germany, March 26—April 3, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 32 revised full papers presented were carefully reviewed and selected from 112 submissions. The papers are organized in topical sections on memory models and consistency, invariants and termination, timed and probabilistic systems, interpolations and SAT-solvers, learning, model checking, games and automata, verification, and probabilistic systems.

This introduction to the discrete wavelet transform and its applications is based on a novel approach to discrete wavelets called lifting. After an elementary introduction, connections of filter theory are presented, and wavelet packet transforms are defined. The time-frequency plane is used for interpretation of signals, problems with finite length signals are detailed, and MATLAB is used for examples and implementation of transforms.

This book constitutes the refereed post-conference proceedings of the 4th International Symposium on Algorithmic Aspects of Cloud Computing, ALGO CLOUD 2018, held in Helsinki, Finland, in August 2018. The 11 revised full papers were carefully reviewed and selected from 29 submissions. The aim of the symposium is to present research activities and results on topics related to algorithmic, design, and development aspects of modern cloud-based systems.

This research monograph summarizes solutions to reconfigurable fault-tolerant control problems for nonlinear dynamical systems that are based on the fault-hiding principle. It emphasizes but is not limited to complete actuator and sensor failures. In the first part, the monograph starts with a broad introduction of the control reconfiguration problems and objectives as well as summaries and explanations of solutions for linear dynamical systems. The solution is always a reconfiguration block, which consists of linear virtual actuators in the case of actuator faults and linear virtual sensors in the case of sensor faults. The main advantage of the fault-hiding concept is the reusability of the nominal controller, which remains in the loop as an active system while the virtual actuator and sensor adapt the control input and the measured output to the fault scenario. The second and third parts extend virtual actuators and virtual sensors towards the classes of Hammerstein-Wiener systems and piecewise affine systems. The main analyses concern stability recovery, setpoint tracking recovery, and performance recovery as reconfiguration objectives. The fourth part concludes the monograph with descriptions of practical implementations and case studies. The book is primarily intended for active researchers and practicing engineers in the field of fault-tolerant control. Due to many running examples it is also suitable for interested graduate students.

This book constitutes the thoroughly refereed post-conference proceedings of the First International Joint Conference on Knowledge Discovery, Knowledge Engineering, and Knowledge Management, IC3K 2009, held in Funchal, Madeira, Portugal, in October 2009. This book includes revised and extended versions of a strict selection of the best papers presented at the conference; 27 revised full papers together with 3 invited lectures were carefully reviewed and selected from 369 submissions. According to the three covered conferences KDIR 2009, KEOD 2009, and KMIS 2009, the papers are organized in topical sections on knowledge discovery and information retrieval, knowledge engineering and ontology development, and on knowledge management and information sharing.

WSC2008Chair's Welcome Message Dear Colleague, The World Soft Computing (WSC) conference is an annual international online conference on applied and theoretical soft computing technology. This WSC 2008 is the thirteenth conference in this series and it has been a great success. We received a lot of excellent paper submissions which were peer-reviewed by an international team of experts. Only 60 papers out of 111 submissions were selected for online publication. This assured a high quality standard for this online conference. The corresponding online statistics are a

proof of the great world-wide interest in the WSC 2008 conference. The conference website had a total of 33,367 different human user accesses from 43 countries with around 100 visitors every day, 151 people signed up to WSC to discuss their scientific disciplines in our chat rooms and the forum. Also audio and slide presentations allowed a detailed discussion of the papers. The submissions and discussions showed that there is a wide range of soft computing applications to date. The topics covered by the conference range from applied to theoretical aspects of fuzzy, neuro-fuzzy and rough sets over to neural networks to single and multi-objective optimisation. Contributions about particle swarm optimisation, gene expression programming, clustering, classification, support vector machines, quantum evolution and agents systems have also been received. One whole session was devoted to soft computing techniques in computer graphics, imaging, vision and signal processing.

This book constitutes the refereed proceedings of the Second International Symposium on Dependable Software Engineering: Theories, Tools, and Applications, SETTA 2016, held in Beijing, China, in November 2016. The 17 full papers presented together with 3 short papers were carefully reviewed and selected from 58 submissions. The aim of the symposium is to bring together international researchers and practitioners in the field of software technology. Its focus is on formal methods and advanced software technologies, especially for engineering complex, large-scale artifacts like cyber-physical systems, networks of things, enterprise systems, or cloud-based services.

This book constitutes the refereed proceedings of the 14th International Conference on Applied Cryptography and Network Security, ACNS 2016, held in Guildford, UK, in June 2016. The 35 revised full papers included in this volume and presented together with 2 invited talks, were carefully reviewed and selected from 183 submissions. ACNS is an annual conference focusing on innovative research and current developments that advance the areas of applied cryptography, cyber security and privacy.

CSISE 2011 is an integrated conference concentrating its focus upon Computer Science, Intelligent System and Environment. In the proceeding, you can learn much more knowledge about Computer Science, Intelligent System and Environment of researchers all around the world. The international conference will provide a forum for engineers, scientist, teachers and all researchers to discuss their latest research achievements and their future research plan. The main role of the proceeding is to be used as an exchange pillar for researchers who are working in the mentioned field. In order to meet high standard of Springer's Advances in Intelligent and Soft Computing, the organization committee has made their efforts to do the following things. Firstly, poor quality paper has been refused after reviewing course by anonymous referee experts. Secondly, periodically review meetings have been held around the reviewers about five times for exchanging reviewing suggestions. Finally, the conference organization had several preliminary sessions before

the conference. Through efforts of different people and departments, the conference will be successful and fruitful. We hope that you can get much more knowledges from our CSISE2011, and we also hope that you can give us good suggestions to improve our work in the future.

This book constitutes the refereed proceedings of the Second International Conference on Formal Methods in Computer-Aided Design, FMCAD '98, held in Palo Alto, California, USA, in November 1998. The 27 revised full papers presented were carefully reviewed and selected from a total of 55 submissions. Also included are four tools papers and four invited contributions. The papers present the state of the art in formal verification methods for digital circuits and systems, including processors, custom VLSI circuits, microcode, and reactive software. From the methodological point of view, binary decision diagrams, model checking, symbolic reasoning, symbolic simulation, and abstraction methods are covered.

This book constitutes the proceedings of the 15th International Workshop on Formal Methods for Industrial Critical Systems, FMICS 2010 held in Antwerp, Belgium, in September 2010 - co-located with ASE 2010, the 25th IEEE/ACM International Conference on Automated Software Engineering, The 14 papers presented were carefully reviewed and selected from 33 submissions. The aim of the FMICS workshop series is to provide a forum for researchers who are interested in the development and application of formal methods in industry. It also strives to promote research and development for the improvement of formal methods and tools for industrial applications.

This two volume set LNCS 5163 and LNCS 5164 constitutes the refereed proceedings of the 18th International Conference on Artificial Neural Networks, ICANN 2008, held in Prague Czech Republic, in September 2008. The 200 revised full papers presented were carefully reviewed and selected from more than 300 submissions. The first volume contains papers on mathematical theory of neurocomputing, learning algorithms, kernel methods, statistical learning and ensemble techniques, support vector machines, reinforcement learning, evolutionary computing, hybrid systems, self-organization, control and robotics, signal and time series processing and image processing.

MATLAB® is used for a wide range of applications in geosciences, such as image processing in remote sensing, the generation and processing of digital elevation models and the analysis of time series. This book introduces methods of data analysis in geosciences using MATLAB, such as basic statistics for univariate, bivariate and multivariate datasets, time-series analysis, signal processing, the analysis of spatial and directional data and image analysis. The revised and updated Fourth Edition includes sixteen new sections and most chapters have greatly been expanded so that they now include a step by step discussion of all methods before demonstrating the methods with MATLAB functions. New sections include: Array Manipulation; Control Flow; Creating Graphical User Interfaces; Hypothesis Testing; Kolmogorov-

Smirnov Test; Mann-Whitney Test; Ansari-Bradley Test; Detecting Abrupt Transitions in Time Series; Exporting 3D Graphics to Create Interactive Documents; Importing, Processing and Exporting LANDSAT Images; Importing and Georeferencing TERRA ASTER Images; Processing and Exporting EO-1 Hyperion Images; Image Enhancement; Correction and Rectification; Shape-Based Object Detection in Images; Discriminant Analysis; and Multiple Linear Regression. The text includes numerous examples demonstrating how MATLAB can be used on data sets from earth sciences. The book's supplementary electronic material (available online through Springer Link) includes recipes that include all the MATLAB commands featured in the book and the example data.

This book introduces readers to novel, efficient and user-friendly software tools for power systems studies, to issues related to distributed and dispersed power generation, and to the correlation between renewable power generation and electricity demand. Discussing new methodologies for addressing grid stability and control problems, it also examines issues concerning the safety and protection of transmission and distribution networks, energy storage and power quality, and the application of embedded systems to these networks. Lastly, the book sheds light on the implications of these new methodologies and developments for the economics of the power industry. As such, it offers readers a comprehensive overview of state-of-the-art research on modern electricity transmission and distribution networks.

This book constitutes the refereed proceedings of the 12th International Symposium on Practical Aspects of Declarative Languages, PADL 2010, held in Madrid, Spain, in January 2010, colocated with POPL 2010, the Symposium on Principles of Programming Languages. The 22 revised full papers presented together with 2 invited talks were carefully reviewed and selected from 58 submissions. The volume features original work emphasizing novel applications and implementation techniques for all forms of declarative concepts, including functions, relations, logic, and constraints. The papers address all current aspects of declarative programming; they are organized in topical sections on non-monotonic reasoning - answer set programming, types, parallelism and distribution, code quality assurance, domain specific languages, programming aids, constraints, and tabling - agents.

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