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**Expert Systems**-Joseph C. Giarratano 1994

**Principles of Expert Systems**-Peter Lucas 1991

**Fundamentals of Expert Systems Technology**-Samuel J. Biondo 1990 This volume presents concise and comprehensive coverage of the principles and concepts that are fundamental to the design of expert systems software and hardware and the development of knowledge-based systems. The volume includes an overview of the symbolic and object-oriented programming languages used to create knowledge representation languages structures, a description of declarative and procedural knowledge
representation schemes, a discussion of search algorithms and various numerical and non-numericla techniques for dealing with uncertainty, and an introduction to reasoning with one or more inference engines. The book also provides an overview of the architecture and functions of blackboard systems, a review of the state of the art in explanation, and a discussion of user interface requirements and integrated systems.

**Expert Systems**-Joseph C. Giarratano 1994 In this book, the authors present rule-based programming in CLIPS (a rule-based programming language developed at NASA in part by Gary Riley). This book covers the construction of expert systems using rule-based programming methodologies. In this new edition the CLIPS software has been completely updated from version 4.2 to 6.0 and new CLIPS features have been included. The prerequisites are a structured programming and a data structures courses.

**Advancement of Intelligent Production**-E. Usui 2016-07-29 As we move towards the 21st century, industries are compelled to turn from "high productivity and high precision" to "more intelligent and more human-oriented technology". This volume presents the existing state of the art of production/precision engineering and illuminates areas in which future work may proceed.

**Handbook of VLSI Chip Design and Expert Systems**-A. F. Schwarz 2014-05-10 Handbook of VLSI Chip Design and Expert Systems provides information pertinent to the fundamental aspects of expert systems, which provides a knowledge-based approach to problem solving. This book discusses the use of expert systems in every possible subtask of VLSI chip design as well as in the interrelations between the subtasks. Organized into nine chapters, this book begins with an overview of design automation, which can be
identified as Computer-Aided Design of Circuits and Systems (CADCAS). This text then presents the progress in artificial intelligence, with emphasis on expert systems. Other chapters consider the impact of design automation, which exploits the basic capabilities of computers to perform complex calculations and to handle huge amounts of data with a high speed and accuracy. This book discusses as well the characterization of microprocessors. The final chapter deals with interactive I/O devices. This book is a valuable resource for system design experts, circuit analysts and designers, logic designers, device engineers, technologists, and application-specific designers.

**Database and Expert Systems Applications**
Djamal Benslimane
2017-09-07 This two volume set LNCS 10438 and LNCS 10439 constitutes the refereed proceedings of the 28th International Conference on Database and Expert Systems Applications, DEXA 2017, held in Lyon, France, August 2017. The 37 revised full papers presented together with 40 short papers were carefully reviewed and selected from 166 submissions. The papers discuss a range of topics including: Semantic Web and Semantics; Graph Matching; Data Modeling, Data Abstraction, and Uncertainty; Preferences and Query Optimization; Data Integration and RDF Matching; Security and Privacy; Web Search; Data Clustering; Top-K and Skyline Queries; Data Mining and Big Data; Service Computing; Continuous and Temporal Data, and Continuous Query Language; Text Processing and Semantic Search; Indexing and Concurrency Control Methods; Data Warehouse and Data Stream Warehouse; Data Mining and Machine Learning; Recommender Systems and Query Recommendation; Graph Algorithms; Semantic Clustering and Data Classification.

**MATLAB Machine Learning Recipes**
Michael Paluszek
2019-01-31 Harness the power of MATLAB to resolve a
wide range of machine learning challenges. This book provides a series of examples of technologies critical to machine learning. Each example solves a real-world problem. All code in MATLAB Machine Learning Recipes: A Problem-Solution Approach is executable. The toolbox that the code uses provides a complete set of functions needed to implement all aspects of machine learning. Authors Michael Paluszek and Stephanie Thomas show how all of these technologies allow the reader to build sophisticated applications to solve problems with pattern recognition, autonomous driving, expert systems, and much more. What you'll learn: How to write code for machine learning, adaptive control and estimation using MATLAB How these three areas complement each other How these three areas are needed for robust machine learning applications How to use MATLAB graphics and visualization tools for machine learning How to code real world examples in MATLAB for major applications of machine learning in big data

primary audiences are engineers, data scientists and students wanting a comprehensive and code cookbook rich in examples on machine learning using MATLAB.

Industrial and Engineering Applications or Artificial Intelligence and Expert Systems-Takushi Tanaka 1997-01-30 This work represents a broad spectrum of new ideas in the field of applied artificial intelligence and expert systems, and serves to disseminate information regarding intelligent methodologies and their implementation in solving various problems in industry and engineering. Many innovative artificial intelligence (AI) systems have emerged as the result of engineering machines to think like humans and perform intelligent functions. However, only recently have intelligent systems been applied to solve real life problems.

Re-Coding Homes Through
Flexible Interiors: Emerging Research and Opportunities - Saglar Onay, Nilüfer 2019-07-05
Cities are not only places that house buildings; they are also spaces where cultural and social relations are built and developed. These properties must be taken into consideration when constructing and renovating new housing. Different methodologies can be used in order to create new flexible solutions for mass housing units’ interior spaces with the aim of improving their adaptability by using a user-centered approach. Re-Coding Homes Through Flexible Interiors: Emerging Research and Opportunities is an optimal resource that investigates how interior design models can transform existing spaces into more flexible and functional housing units while also increasing the functional value and spatial quality of living spaces in social housing. The book specifically discusses how genetic algorithms, a generative design approach, are used to solve nonlinear design problems. It also provides results that can be referenced based on actual domain data, which can be used as references to other architectural and interior design approaches. Featuring research on topics such as housing design and mass housing, this book is ideally designed for architects, engineers, interior designers, furniture designers, construction companies, architecture firms, practitioners, academicians, students, and researchers.

This book integrates fuzzy rule-languages with genetic algorithms, genetic programming, and classifier systems with the goal of obtaining fuzzy rule-based expert systems with learning capabilities. The main topics are first introduced by solving small problems, then a prototype implementation of the algorithm is explained, and last but not least the theoretical foundations are
given. The second edition takes into account the rapid progress in the application of fuzzy genetic algorithms with a survey of recent developments in the field. The chapter on genetic programming has been revised. An exact uniform initialization algorithm replaces the heuristic presented in the first edition. A new method of abstraction, compound derivations, is introduced.

Intelligent Spatial Decision Support Systems - Yee Leung

2012-12-06 In the past half century, we have experienced two major waves of methodological development in the study of human behavior in space and time. The first wave was the well known "quantitative revolution" which propelled geography from a mainly descriptive discipline to a scientific discipline using formalism such as probability, statistics, and a large-number of mathematical methods for analyzing spatial structures and processes under certainty and uncertainty. The second wave is the recent advancement of geographical information systems which equips geographers with automation in the storage, retrieval, analysis, and display of data. Both developments have significant impacts on geographical studies in general and solutions to real life spatio-temporal problems in particular. They have found applications in urban and regional planning, automated mapping and facilities management, transportation planning and management, as well as environmental planning and management, to name but a few examples. Both developments have one thing in common. They one way or the other use computer to process and analyze data. However, not until recently, there has been very little interaction between the two. Quantitative models have largely been developed independent of the underlying data models and structures representing the spatial phenomena or processes under study. Display of analysis results has been primitive in terms of the utilization of computer graphic technologies. Formal models, in addition to their
technical difficulties, have poor capability in communication with users. Geographical information systems, on the other hand, have originally been developed with a slight intention to entertain powerful analytical models.

**Energy Management Systems**-Edmund Handschin 2012-12-06 Network control is a young discipline and yet already a considerable number of textbooks have been published on the topic. The aim of this book is to give a comprehensive description of Energy Management Systems (EMS) from the operator's point of view, with regard to their hardware and to their software aspects. The scope of the book is restricted to network control of electrical transmission systems and emphasis is placed on systematic description of the different operational planning aspects. The book provides a framework within which EMS may be realised, considering both the present state of the art and future developments in this multidisciplinary field.

A carefully edited glossary contains the most important terms used in the field of energy management systems.

**Principles of Expert Systems**-Amar Gupta 1988

**Batch Fermentation**-Ali Cinar 2003-04-01 Illustrating techniques in model development, signal processing, data reconciliation, process monitoring, quality assurance, intelligent real-time process supervision, and fault detection and diagnosis, Batch Fermentation offers valuable simulation and control strategies for batch fermentation applications in the food, pharmaceutical, and chemical industries. The book provides approaches for determining optimal reference trajectories and operating conditions; estimating final product quality; modifying, adjusting, and enhancing batch process operations; and designing integrated real-time intelligent knowledge-based systems for process
monitoring and fault diagnosis.

**Concise Encyclopedia of Computer Science**-Edwin D. Reilly 2004-09-03 The Concise Encyclopedia of Computer Science has been adapted from the full Fourth Edition to meet the needs of students, teachers and professional computer users in science and industry. As an ideal desktop reference, it contains shorter versions of 60% of the articles found in the Fourth Edition, putting computer knowledge at your fingertips. Organised to work for you, it has several features that make it an invaluable and accessible reference. These include: Cross references to closely related articles to ensure that you don’t miss relevant information Appendices covering abbreviations and acronyms, notation and units, and a timeline of significant milestones in computing have been included to ensure that you get the most from the book. A comprehensive index containing article titles, names of persons cited, references to sub-categories and important words in general usage, guarantees that you can easily find the information you need. Classification of articles around the following nine main themes allows you to follow a self study regime in a particular area: Hardware Computer Systems Information and Data Software Mathematics of Computing Theory of Computation Methodologies Applications Computing Milieux. Presenting a wide ranging perspective on the key concepts and developments that define the discipline, the Concise Encyclopedia of Computer Science is a valuable reference for all computer users.

**Expert System Applications**-Leonard Bolc 2012-12-06 While expert systems technology originated in the United States, its development has become an international concern. Since the start of the DENDRAL project at Stanford University over 15 years ago, with its objective of problem-solving via the automation of actual human expert knowledge,
significant expert systems projects have been completed in countries ranging from Japan to France, Spain to China. This book presents a sample of five such projects, along with four substantial reports of mature studies from North American researchers. Two important issues of expert system design permeate the papers in this volume. The first concerns the incorporation of substantial numeric knowledge into a system. This has become a significant focus of work as researchers have sought to apply expert systems technology to complex, real-world domains already subject to statistical or algebraic description (and handled well at some level in numeric terms). A second prominent issue is that of representing control knowledge in a manner which is both explicit, and thus available for inspection, and compatible with the semantics of the problem domain.

Innovations in Bio-Inspired Computing and Applications-Ajith Abraham

2019-05-21 This book highlights recent research on bio-inspired computing and its various innovative applications in Information and Communication Technologies. It presents 50 high-quality papers from the 9th International Conference on Innovations in Bio-Inspired Computing and Applications (IBICA 2018) and 7th World Congress on Information and Communication Technologies (WICT 2018), which was held at Toc H Institute of Science and Technology (TIST) on December 17-19, 2018. IBICA-WICT 2018 was a premier conference and brought together researchers, engineers and practitioners whose work involved bio-inspired computing, computational intelligence and their applications in information security, real-world contexts etc. Including contributions by authors from 22 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

The Handbook of Applied
Expert Systems-Jay Liebowitz 2019-07-23 The Handbook of Applied Expert Systems is a landmark work dedicated solely to this rapidly advancing area of study. Edited by Jay Liebowitz, a professor, author, and consultant known around the world for his work in the field, this authoritative source covers the latest expert system technologies, applications, methodologies, and practices. The book features contributions from more than 40 of the world's foremost expert systems authorities in industry, government, and academia. The Handbook is organized into two major sections. The first section explains expert systems technologies while the second section focuses on applied examples in a wide variety of industries. Key topics covered include fuzzy systems, genetic algorithm development, machine learning, knowledge representation, and much more.

Systematic Introduction to Expert Systems-Frank Puppe 2012-12-06 At present one of the main obstacles to a broader application of expert systems is the lack of a theory to tell us which problem-solving methods are available for a given problem class. Such a theory could lead to significant progress in the following central aims of the expert system technique: - Evaluating the technical feasibility of expert system projects: This depends on whether there is a suitable problem-solving method, and if possible a corresponding tool, for the given problem class. - Simplifying knowledge acquisition and maintenance: The problem-solving methods provide direct assistance as interpretation models in knowledge acquisition. Also, they make possible the development of problem-specific expert system tools with graphical knowledge acquisition components, which can be used even by experts without programming experience. - Making use of expert systems as a knowledge medium: The structured knowledge in expert systems can be used not only for problem solving but also for knowledge
communication and tutorial purposes. With such a theory in mind, this book provides a systematic introduction to expert systems. It describes the basic knowledge representations and the present situation with regard to the identification, realization, and integration of problem-solving methods for the main problem classes of expert systems: classification (diagnostics), construction, and simulation.


**Artificial Intelligence** - Marco Antonio Aceves-Fernandez 2018-06-27

Artificial intelligence (AI) is taking an increasingly important role in our society. From cars, smartphones, airplanes, consumer applications, and even medical equipment, the impact of AI is changing the world around us. The ability of machines to demonstrate advanced cognitive skills in taking decisions, learn and perceive the environment, predict certain behavior, and process written or spoken languages, among other skills, makes this discipline of paramount importance in today's world. Although AI is changing the world for the better in many applications, it also comes with its challenges. This book encompasses many applications as well as new techniques, challenges, and opportunities in this fascinating area.

**Maintenance Scheduling in Restructured Power Systems** - M. Shahidehpour 2012-12-06

The overall goal of this book is to introduce algorithms for improving the economic posture of a utility company in a restructured power system by promoting cost-effective maintenance schedules. Today, cutting operations and maintenance (O&M) costs and preserving service reliability) are among the top priorities for managers of utility companies. Preventive maintenance is perhaps the single largest
controllable cost of a utility operation. It is perceived that a careful planning and a good coordination among self-interested entities in a restructured power system are essential to achieving an optimal trade-off between the cost of maintenance and the service reliability. Traditional maintenance programs in vertically integrated utilities relied heavily on time-directed maintenance and manufacturer recommendations. This book offers a logical alternative to traditional electric utility maintenance practices and a basis for maintenance decisions. The book is organized as follows. Chapter I reviews various issues related to the power system operation and presents the role of restructuring in maintenance scheduling. In Chapter II, fundamental topics related to linear and nonlinear systems are reviewed. The duality in linear programming is discussed and integer programming is reviewed. Benders decomposition, Lagrangian relaxation, and Dantzig-Wolfe decomposition are presented. Several examples are given to demonstrate the applications of different methods. The formulation of reactive power optimization is discussed which will be used again in Chapter VII.

**Concise Encyclopedia of Software Engineering**
Derrick Morris 2013-10-22
This Concise Encyclopedia of Software Engineering is intended to provide compact coverage of the knowledge relevant to the practicing software engineer. The content has been chosen to provide an introduction to the theory and techniques relevant to the software of a broad class of computer applications. It is supported by examples of particular applications and their enabling technologies. This Encyclopedia will be of value to new practitioners who need a concise overview and established practitioners who need to read about the "penumbra" surrounding their own specialities. It will also be useful to professionals from other disciplines who need to gain some understanding of the various aspects of software engineering which
underpin complex information and control systems, and the thinking behind them.

**Soft Computing for Biomedical Applications and Related Topics** - Vladik Kreinovich 2020-06-29
This book presents innovative intelligent techniques, with an emphasis on their biomedical applications. Although many medical doctors are willing to share their knowledge – e.g. by incorporating it in computer-based advisory systems that can benefit other doctors – this knowledge is often expressed using imprecise (fuzzy) words from natural language such as “small,” which are difficult for computers to process. Accordingly, we need fuzzy techniques to handle such words. It is also desirable to extract general recommendations from the records of medical doctors’ decisions – by using machine learning techniques such as neural networks. The book describes state-of-the-art fuzzy, neural, and other techniques, especially those that are now being used, or potentially could be used, in biomedical applications. Accordingly, it will benefit all researchers and students interested in the latest developments, as well as practitioners who want to learn about new techniques.

Exergy, Energy System Analysis, and Optimization theme is a component of the Encyclopedia of Energy Sciences, Engineering and Technology Resources which is part of the global Encyclopedia of Life Support Systems (EOLSS), an integrated compendium of twenty one Encyclopedias. These three volumes are organized into five different topics which represent the main scientific areas of the theme: 1. Exergy and Thermodynamic Analysis; 2. Thermoeconomic Analysis; 3. Modeling, Simulation and Optimization in Energy Systems; 4. Artificial Intelligence and Expert Systems in Energy Systems.
Analysis; 5. Sustainability Considerations in the Modeling of Energy Systems. Fundamentals and applications of characteristic methods are presented in these volumes. These three volumes are aimed at the following five major target audiences: University and College Students, Educators, Professional Practitioners, Research Personnel and Policy Analysts, Managers, and Decision Makers and NGOs.

**Expert Systems in Production Engineering**
Georg Menges 2013-03-12

**Database and Expert Systems Applications**
Abdelkader Hameurlain 2011-08-19
This book constitutes the refereed proceedings of the 22 International Conference on Database and Expert Systems Applications, DEXA 2011, held in Toulouse, France, August 29 - September 2, 2011. The 52 revised full papers and 40 short papers presented were carefully reviewed and selected from 207 submissions. The papers are organized in topical sections on query processing; database semantics; skyline queries; security and privacy; spatial and temporal data; semantic web search; storage and search; web search; data integration, transactions and optimization; and web applications.

**Music and the Cognitive Sciences 1990**
Ian Cross 2004-08-02
This issue comprises the twenty-five papers presented at the Second Music and the Cognitive Sciences
conference held at Cambridge University in 1990.

**Artificial Intelligence in Chemical Engineering**

Thomas E. Quantrille

2012-12-02 Artificial intelligence (AI) is the part of computer science concerned with designing intelligent computer systems (systems that exhibit characteristics we associate with intelligence in human behavior). This book is the first published textbook of AI in chemical engineering, and provides broad and in-depth coverage of AI programming, AI principles, expert systems, and neural networks in chemical engineering. This book introduces the computational means and methodologies that are used to enable computers to perform intelligent engineering tasks. A key goal is to move beyond the principles of AI into its applications in chemical engineering. After reading this book, a chemical engineer will have a firm grounding in AI, know what chemical engineering applications of AI exist today, and understand the current challenges facing AI in engineering. Allows the reader to learn AI quickly using inexpensive personal computers. Contains a large number of illustrative examples, simple exercises, and complex practice problems and solutions. Includes a computer diskette for an illustrated case study. Demonstrates an expert system for separation synthesis (EXSEP) Presents a detailed review of published literature on expert systems and neural networks in chemical engineering.

**Encyclopedia of Microcomputers**

Allen Kent

1992-01-06 "The Encyclopedia of Microcomputers serves as the ideal companion reference to the popular Encyclopedia of Computer Science and Technology. Now in its 10th year of publication, this timely reference work details the broad spectrum of microcomputer technology, including microcomputer history; explains and illustrates the use of microcomputers throughout academe, business, government, and society in general; and assesses the..."
future impact of this rapidly changing technology."

Knowledge Engineering and Computer Modelling in CAD-Alison Smith 2013-10-22
Knowledge Engineering and Computer Modelling in CAD covers the proceedings of CAD86, The Seventh International Conference on the Computer as a Design Tool. The book presents 49 papers that are organized into 14 parts according to their respective themes. The main themes of the conference are modeling and expert systems. Materials covering database, control, and geometric modeling are also presented. The coverage of the text includes expert systems in process planning; selections and evaluation of cost-effective CAD systems; and designing complex artifacts with the assistance of a microcomputer-based system. The book will be of great use to researchers and practitioners whose work involves the utilization of CAD.


Human Factors in Simple and Complex Systems-Robert W. Proctor 2018-01-02
Recently, there have been a number of advances in technology, including in mobile devices, globalization of companies, display technologies and healthcare, all of which require significant input and evaluation from human factors specialists. Accordingly, this textbook has been completely updated, with some chapters folded into other chapters and new chapters added where needed. The text continues to fill the need for a textbook that bridges the gap between the conceptual and empirical foundations of the field.

Telecom Operations Management Solutions with NetExpert-Kornel Terplan 1998-06-09
The communications environment is rapidly changing. The barriers of traditional phone
and data technologies are going to break down, and users can expect a true multimedia environment with existing services transferred and new services implemented. New suppliers, such as cable companies, will compete with interexchange carriers, RBOCs, and local phone companies for the market share. The differentiator is the price/performance ratio of the service under consideration. Today's migrated and new services lack powerful management solutions. Telecom Operations Management Solutions with NetExpert examines the most advanced products available to manage new technologies as well as addresses services, such as: Advanced telephony Wireless networks Commercial broadband Mass-market broadband Competitive access services Intercarrier communications Infrastructure services This resource also demonstrates how expert systems solve the problem of handling the large volume of data streams from numerous network components. Practical solutions support each example of an application - offering first-hand operational experience. The book provides practical examples to deploy management solutions based on NetExpert framework from Objective Systems Integrator. The framework consists of the principal modules, such as a gateway to managed devices and services as well as the workstation for operators. This framework is extended by point rulesets to manage individual devices by domain rulesets to manage device groups by enterprise rulesets to manage complete telco services The solution sets support all layers of telecommunication management networks, such as element, network, service, and business layers. As a result, these solution sets are extremely important to both incumbent and new telco service providers. Numerous cases cover customized solutions for managing wireless networks, sonet rings, ATM, old and new phone services, broadband services, and special access services of ISPs. Telecom Operations Management Solutions with NetExpert describes never-before-
published information about solution sets based on an expert-system-based framework.

**Database and Expert Systems Applications**-Sourav S. Bhowmick
2009-08-25 This book constitutes the refereed proceedings of the 20th International Conference on Database and Expert Systems Applications, DEXA 2009, held in Linz, Austria, in August/September 2009. The 35 revised full papers and 35 short papers presented were carefully reviewed and selected from 202 submissions. The papers are organized in topical sections on XML and databases; Web, semantics and ontologies; temporal, spatial, and high dimensional databases; database and information system architecture, performance and security; query processing and optimisation; data and information integration and quality; data and information streams; data mining algorithms; data and information modelling; information retrieval and database systems; and database and information system architecture and performance.

**Expert Systems Lab Course**-Peter Schnupp
2012-12-06 Based on a number of sample systems of varying complexity, this book illustrates the practical aspects of developing expert systems and knowledge-based applications software. The programming language used is Prolog (Clocksin-Mellish standard). The examples deal with such topics as techniques for heuristic optimization, the implementation of "frames", the construction of explanatory components, etc. The complete, functional code for the sample systems is provided in the appendix and can be used as a basis for further development. This book is not only suitable for self-study, seminars or lectures, but also as a valuable reference and guide for software developers in both commercial and academic environments.
Artificial Intelligence And Automation - Nikolas G Bourbakis 1998-05-05
Contents:
A New Way to Acquire Knowledge (H-Y Wang)
An SPN Knowledge Representation Scheme (J Gattiker & N Bourbakis)
On the Deep Structures of Word Problems and Their Construction (F Gomez)
Resolving Conflicts in Inheritance Reasoning with Statistical Approach (C W Lee)
Integrating High and Low Level Computer Vision for Scene Understanding (R Malik & S So)
The Evolution of Commercial AI Tools: The First Decade (F Hayes-Roth)
Reengineering: The AI Generation — Billions on the Table (J S Minor Jr)
An Intelligent Tool for Discovering Data Dependencies in Relational DBS (P Gavaskar & F Golshani)
A Case-Based Reasoning (CBR) Tool to Assist Traffic Flow (B Das & S Bayles)
A Study of Financial Expert System Based on Flops (T Kaneko & K Takenaka)
An Associative Data Parallel Compilation Model for Tight Integration of High Performance Knowledge Retrieval and Computation (A K Bansal)
Software Automation: From Silly to Intelligent (J-F Xu et al.)
Software Engineering Using Artificial Intelligence: The Knowledge Based Software Assistant (D White)
Knowledge Based Derivation of Programs from Specifications (T Weight et al.)
Automatic Functional Model Generation for Parallel Fault Design Error Simulations (S-E Chang & S A Szygenda)
Visual Reverse Engineering Using SPNs for Automated Diagnosis and Functional Simulation of Digital Circuits (J Gattiker & S Mertoguno)
The Impact of AI in VLSI Design Automation (M Mortazavi & N Bourbakis)
The Automated Acquisition of Subcategorizations of Verbs, Nouns and Adjectives from Sample Sentences (F Gomez)
General Method for Planning and Rendezvous Problems (K I Trovato)
Learning to Improve Path Planning Performance (P C Chen)
Incremental Adaptation as a Method to Improve Reactive Behavior (A J Hendriks & D M Lyons)
An SPN-Neural Planning Methodology for Coordination of Multiple Robotic Arms with
Constrained Placement (N Bourbakis & A Tascillo)
Readership: Computer scientists, artificial intelligence practitioners and robotics users. keywords:

**Knowledge-based Programming for Music Research**-John W. Schaffer 1997-01-01 In Knowledge-Based Programming for Music Research, Schaffer and McGee explore expert systems for applications in artificial intelligence (AI). The text concerns (1) basic principles for knowledge-based programming, (2) concepts and strategies for programming these systems, (3) a "universal data" model for music analysis, and (4) examples that concern specific aspects of design and application. The authors also investigate Prolog (programming in logic), one of the most widely used computer languages for AI, and base some of their applications on the recent implication-based theories of Eugene Narmour. Of the applications for programming a knowledge-based system, music analysis has the most potential. Beyond identifying isolated elements, it is possible to create programs that extend to chord structures and other, more complex structures. This kind of programming allows the authors to embed the rules of composition in the application and then extend the analysis throughout the musical work. It also allows them to arrive at the underlying principles for a given composition. As a tool for music analysis, such programming has profound implications for further growth. The text is designed for musicians at various levels and could also be used in courses on computer-music programming. Parts of the book have been successfully used in courses on computer programming for music research, with which the authors have direct experience. The text includes extensive examples of code for use in individual Prolog applications and a comprehensive bibliography.

**Intelligent Systems: Principles, Paradigms, and**
Pragmatics - Robert J. Schalkoff 2011-08-24 Artificial Intelligence has changed significantly in recent years and many new resources and approaches are now available to explore and implement this important technology. Intelligent Systems: Principles, Paradigms, and Pragmatics takes a modern, 21st-century approach to the concepts of Artificial Intelligence and includes the latest developments, developmental tools, programming, and approaches related to AI. The author is careful to make the important distinction between theory and practice, and focuses on a broad core of technologies, providing students with an accessible and comprehensive introduction to key AI topics.