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Artificial Intelligence Artificial Intelligence Knowing our World: An Artificial Intelligence Perspective Artificial Intelligence: Structures and Strategies for Complex Problem Solving, 5/e Artificial Intelligence Artificial Intelligence and the Design of Expert Systems Computation and Intelligence Cognitive Science Artificial Intelligence Means-ends analysis and the solution of mechanics problems Mathematical Model Building in the Solution of Mechanics Problems: Human Protocols and the Mecho Trace AI Algorithms, Data Structures, and Idioms in Prolog, Lisp, and Java Artificial Intelligence Problems and Their Solutions Dictionary of Artificial Intelligence Artificial Intelligence in the 21st Century Artificial Intelligence Introduction to Artificial Intelligence Managing and Understanding Artificial Intelligence Solutions Contemporary Artificial Intelligence Emerging Solutions for Future Manufacturing Systems Artificial Intelligence and Soft Computing NEURAL NETWORKS, FUZZY SYSTEMS AND EVOLUTIONARY ALGORITHMS : SYNTHESIS AND APPLICATIONS NEURAL NETWORKS, FUZZY LOGIC AND GENETIC ALGORITHM Artificial Intelligence and Applied Mathematics in Engineering Problems Intelligent Algorithms in Software Engineering MACHINE LEARNING Artificial Intelligence and Software Engineering Artificial Intelligence and Problem Solving Artificial Intelligence Illuminated Fundamentals of the New Artificial Intelligence Artificial Intelligence in the 21st Century Intelligent Supervisory Control Advances in Computational Intelligence Computational Intelligence for Decision Support Artificial Intelligence and Machine Learning for Business for Non-Engineers Computational Logic and Human Thinking Liability for Crimes Involving Artificial Intelligence Systems Deterministic Artificial Intelligence Design of Logic-based Intelligent Systems Artificial Intelligence and Expert Systems

Introduction to Artificial Intelligence Dec 11 2021 This accessible and engaging textbook presents a concise introduction to the exciting field of artificial intelligence (AI). The broad-ranging discussion covers the key subdisciplines within the field, describing practical algorithms and concrete applications in the areas of agents, logic, search, reasoning under uncertainty, machine learning, neural networks, and reinforcement learning. Fully revised and updated, this much-anticipated second edition also includes new material on deep learning. Topics and features: presents an application-focused and hands-on approach to learning, with supplementary teaching resources provided at an associated website; contains numerous study exercises and solutions, highlighted examples, definitions, theorems, and illustrative cartoons; includes chapters on predicate logic, PROLOG, heuristic search, probabilistic reasoning, machine learning and data mining, neural networks and reinforcement learning; reports on developments in deep learning, including applications of neural networks to generate creative content such as text, music and art (NEW); examines performance evaluation of clustering algorithms, and presents two practical examples explaining Bayes' theorem and its relevance in everyday life (NEW); discusses search algorithms, analyzing the cycle check, explaining route planning for car navigation systems, and introducing Monte Carlo Tree Search (NEW); includes a section in the introduction on AI and society, discussing the implications of AI on topics such as employment and transportation (NEW). Ideal for foundation courses or modules

on AI, this easy-to-read textbook offers an excellent overview of the field for students of computer science and other technical disciplines, requiring no more than a high-school level of knowledge of mathematics to understand the material.

Artificial Intelligence in the 21st Century Sep 27 2020 This third edition provides a comprehensive, colorful, up-to-date, and accessible presentation of AI without sacrificing theoretical foundations. It includes numerous examples, applications, full color images, and human interest boxes to enhance student interest. New chapters on deep learning, AI security, and AI programming are included. Advanced topics cover neural nets, genetic algorithms, natural language processing, planning, and complex board games. A companion disc is provided with resources, applications, and figures from the book. Numerous instructors' resources are available upon adoption. Features: • Includes new chapters on deep learning, AI security, and AI programming • Provides a comprehensive, colorful, up to date, and accessible presentation of AI without sacrificing theoretical foundations • Uses numerous examples, applications, full color images, and human interest boxes to enhance student interest • Introduces important AI concepts e.g., robotics, use in video games, neural nets, machine learning, and more thorough practical applications • Features over 300 figures and color images with worked problems detailing AI methods and solutions to selected exercises • Includes companion files with resources, simulations, and figures from the book • Provides numerous instructors' resources, including: solutions to exercises, Microsoft PP slides, etc. The companion files are available online by emailing the publisher with proof of purchase at info@merclearning.com.

Design of Logic-based Intelligent Systems Jan 20 2020 Principles for constructing intelligent systems Design of Logic-based Intelligent Systems develops principles and methods for constructing intelligent systems for complex tasks that are readily done by humans but are difficult for machines. Current Artificial Intelligence (AI) approaches rely on various constructs and methods (production rules, neural nets, support vector machines, fuzzy logic, Bayesian networks, etc.). In contrast, this book uses an extension of propositional logic that treats all aspects of intelligent systems in a unified and mathematically compatible manner. Topics include: * Levels of thinking and logic * Special cases: expert systems and intelligent agents * Formulating and solving logic systems * Reasoning under uncertainty * Learning logic formulas from data * Nonmonotonic and incomplete reasoning * Question-and-answer processes * Intelligent systems that construct intelligent systems Design of Logic-based Intelligent Systems is both a handbook for the AI practitioner and a textbook for advanced undergraduate and graduate courses on intelligent systems. Included are more than forty algorithms, and numerous examples and exercises. The purchaser of the book may obtain an accompanying software package (Leibniz System) free of charge via the internet at leibnizsystem.com.

Computational Logic and Human Thinking Apr 22 2020 The practical benefits of computational logic need not be limited to mathematics and computing. As this book shows, ordinary people in their everyday lives can profit from the recent advances that have been developed for artificial intelligence. The book draws upon related developments in various fields from philosophy to psychology and law. It pays special attention to the integration of logic with decision theory, and the use of logic to improve the clarity and coherence of communication in natural languages such as English. This book is essential reading for teachers and researchers who may be out of touch with the latest developments in computational logic. It will also be useful in any undergraduate course that teaches practical thinking, problem solving or communication skills. Its informal presentation makes the book accessible to readers from any background, but optional, more formal, chapters are also included for those who are more technically oriented.

Artificial Intelligence Illuminated Nov 29 2020

Artificial Intelligence Illuminated presents an overview of the background and history of artificial intelligence, emphasizing its importance in today's society and potential for the future. The book covers a range of AI techniques, algorithms, and methodologies, including game playing, intelligent agents, machine learning, genetic algorithms, and Artificial Life. Material is presented in a lively and accessible manner and the author focuses on explaining how AI techniques relate to and are derived from natural systems, such as the human brain and evolution, and explaining how the artificial equivalents are used in the real world. Each chapter includes student exercises and review questions, and a detailed glossary at the end of the book defines important terms and concepts highlighted throughout the text.

Emerging Solutions for Future Manufacturing Systems Sep 08 2021 Industries and particularly the manufacturing sector have been facing difficult challenges in a context of socio-economic turbulence characterized by complexity as well as the speed of change in causal interconnections in the socio-economic environment. In order to respond to these challenges companies are forced to seek new technological and organizational solutions. In this context two main characteristics emerge as key properties of a modern automation system – agility and distribution. Agility because systems need not only to be flexible in order to adjust to a number of a-priori defined scenarios, but rather must cope with unpredictability. Distribution in the sense that automation and business processes are becoming distributed and supported by collaborative networks. Emerging Solutions for Future Manufacturing Systems includes the papers selected for the BASYS'04 conference, which was held in Vienna, Austria in September 2004 and sponsored by the International Federation for Information Processing (IFIP).

Artificial Intelligence and Problem Solving Dec 31 2020 This book lends insight into solving some well-known AI problems using the most efficient problem-solving methods by humans and computers. The book discusses the importance of developing critical-thinking methods and skills, and develops a consistent approach toward each problem. This book assembles in one place a set of interesting and challenging AI–type problems that students regularly encounter in computer science, mathematics, and AI courses. These problems are not new, and students from all backgrounds can benefit from the kind of deductive thinking that goes into solving them. The book is especially useful as a companion to any course in computer science or mathematics where there are interesting problems to solve. Features: •Addresses AI and problem-solving from different perspectives •Covers classic AI problems such as Sudoku, Map Coloring, Twelve Coins, Red Donkey, Cryptarithms, Monte Carlo Methods, Rubik's Cube, Missionaries/Cannibals, Knight's Tour, Monty Hall, and more •Includes a companion disc with source code, solutions, figures, and more •Offers playability sites where students can exercise the process of developing their solutions •Describes problem-solving methods that might be applied to a variety of situations eBook Customers: Companion files are available for downloading with order number/proof of purchase by writing to the publisher at info@merclearning.com.

Artificial Intelligence and the Design of Expert Systems Nov 22 2022 Provides a thorough discussion of AI's theoretical foundations and advanced applications, including expert system design and knowledge-based programming. It is a wealth of advanced AI topics and applications that should appeal to a broad audience.

NEURAL NETWORKS, FUZZY LOGIC AND GENETIC ALGORITHM Jun 05 2021 This book provides comprehensive introduction to a consortium of technologies underlying soft computing, an evolving branch of computational intelligence. The constituent technologies discussed comprise neural networks, fuzzy logic, genetic algorithms, and a number of hybrid systems which include classes such as neuro-fuzzy, fuzzy-genetic, and neuro-genetic systems. The hybridization of the technologies is demonstrated

on architectures such as Fuzzy-Back-propagation Networks (NN-FL), Simplified Fuzzy ARTMAP (NN-FL), and Fuzzy Associative Memories. The book also gives an exhaustive discussion of FL-GA hybridization. Every architecture has been discussed in detail through illustrative examples and applications. The algorithms have been presented in pseudo-code with a step-by-step illustration of the same in problems. The applications, demonstrative of the potential of the architectures, have been chosen from diverse disciplines of science and engineering. This book with a wealth of information that is clearly presented and illustrated by many examples and applications is designed for use as a text for courses in soft computing at both the senior undergraduate and first-year post-graduate engineering levels. It should also be of interest to researchers and technologists desirous of applying soft computing technologies to their respective fields of work.

MACHINE LEARNING Mar 02 2021 The present book is primarily intended for undergraduate and postgraduate students of computer science and engineering, information technology, and electrical and electronics engineering. It bridges the gaps in knowledge of the seemingly difficult areas of machine learning and nature inspired computing. The text is written in a highly interactive manner, which satisfies the learning curiosity of any reader. Content of the text has been diligently organized to offer seamless learning experience. The text begins with introduction to machine learning, which is followed by explanation of different aspects of machine learning. Various supervised, unsupervised, reinforced and nature inspired learning techniques are included in the text book with numerous examples and case studies. Different aspects of new machine learning and nature inspired learning algorithms are explained in-depth. The well-explained algorithms and pseudo codes for each topic make this book useful for students. The book also throws light on areas like prediction and classification systems. Key Features • Day to day examples and pictorial representations for deeper understanding of the subject • Helps readers easily create programs/applications • Research oriented approach • More case studies and worked-out examples for each machine learning algorithm than any other book

Cognitive Science Sep 20 2022 The interdisciplinary field of cognitive science brings together elements of cognitive psychology, mathematics, perception, linguistics, and artificial intelligence. Given this breadth, textbooks have had difficulty providing balanced coverage-most resort to disjointed edited treatises that prove difficult to use. Cognitive Science provides a unified and comprehensive look at the field, from foundations to applications. Luger explores the logical and philosophical bases of cognitive science with multiple models of intelligence, including neural networks and connectionism. Practical programming examples are included along with an introduction to PROLOG.

Artificial Intelligence Mar 26 2023 This edition of 'Artificial Intelligence' includes increased coverage of the stochastic approaches to AI and stochastic methodology. Various sections have also been extended to recognize the importance of agent-based problem solving and embodiment in AI technology.

Intelligent Supervisory Control Aug 27 2020 In this book, a methodology integrating qualitative reasoning and bond graphs is developed to construct intelligent supervisory control systems. Qualitative reasoning is a powerful model-based reasoning method while bond graphs are a formal modelling language for dynamic systems. Their integration and qualitative reasoning on bond graphs results in a problem-solving approach to artificial intelligence, in which qualitative reasoning is used as the general reasoning strategy and bond graphs are employed as the knowledge representation.A systematic modelling procedure based on qualitative bond graphs is presented. A controller design method is developed to derive control algorithms from qualitative bond graph models. An auto-tuning scheme is proposed to adjust the controllers in order to meet performance criteria and adapt to system changes. A fault

diagnosis mechanism is built to localise system faults, and an additional measurement suggestion method is developed for the diagnosis result refinement. An automatic planner is proposed to generate the operation sequences for system start-up, shut-down, and emergency measures to help human operators operate systems safely. All of these applications are combined together via a management mechanism to construct a supervisory control system.

Artificial Intelligence: Structures and Strategies for Complex Problem Solving, 5/e Jan 24 2023

Computational Intelligence for Decision Support Jun 24 2020 Intelligent decision support relies on techniques from a variety of disciplines, including artificial intelligence and database management systems. Most of the existing literature neglects the relationship between these disciplines. By integrating AI and DBMS, Computational Intelligence for Decision Support produces what other texts don't: an explanation of how to use AI and DBMS together to achieve high-level decision making. Threading relevant disciplines from both science and industry, the author approaches computational intelligence as the science developed for decision support. The use of computational intelligence for reasoning and DBMS for retrieval brings about a more active role for computational intelligence in decision support, and merges computational intelligence and DBMS. The introductory chapter on technical aspects makes the material accessible, with or without a decision support background. The examples illustrate the large number of applications and an annotated bibliography allows you to easily delve into subjects of greater interest. The integrated perspective creates a book that is, all at once, technical, comprehensible, and usable. Now, more than ever, it is important for science and business workers to creatively combine their knowledge to generate effective, fruitful decision support. Computational Intelligence for Decision Support makes this task manageable.

Liability for Crimes Involving Artificial Intelligence Systems Mar 22 2020 The book develops a general legal theory concerning the liability for offenses involving artificial intelligence systems. The involvement of the artificial intelligence systems in these offenses may be as perpetrators, accomplices or mere instruments. The general legal theory proposed in this book is based on the current criminal law in most modern legal systems. In most modern countries, unmanned vehicles, sophisticated surgical systems, industrial computing systems, trading algorithms and other artificial intelligence systems are commonly used for both industrial and personal purposes. The question of legal liability arises when something goes wrong, e.g. the unmanned vehicle is involved in a car accident, the surgical system is involved in a surgical error or the trading algorithm is involved in fraud, etc. Who is to be held liable for these offenses: the manufacturer, the programmer, the user, or, perhaps, the artificial intelligence system itself? The concept of liability for crimes involving artificial intelligence systems has not yet been widely researched. Advanced technologies are forcing society to face new challenges, both technical and legal. The idea of liability in the specific context of artificial intelligence systems is one such challenge that should be thoroughly explored.

Computation and Intelligence Oct 21 2022 This work presents readings in artificial intelligence that should be of relevance to current students and practitioners. It is divided into five parts - each reflecting the stages of development of AI - which include "Foundations", "Knowledge Representation" and "Weak Method Problem Solving".

Artificial Intelligence Apr 27 2023 In this accessible, comprehensive text, George Luger captures the essence of artificial intelligence--solving the complex problems that arise wherever computer technology is applied. Ideal for an undergraduate course in AI, the 6th Edition first presents the fundamental concepts of the discipline then goes into detail with the practical information necessary to implement the algorithms and strategies discussed. Students learn how to use a number of different software tools and techniques to address the many challenges faced by today's computer scientists. Artificial

Intelligence: Structures and Strategies for Complex Problem Solving is ideal for a one- or two-semester undergraduate course on AI.

Artificial Intelligence Aug 19 2022 Artificial Intelligence presents a practical guide to AI, including agents, machine learning and problem-solving simple and complex domains.

Fundamentals of the New Artificial Intelligence Oct 29 2020 The book covers the most essential and widely employed material in each area, particularly the material important for real-world applications. Our goal is not to cover every latest progress in the fields, nor to discuss every detail of various techniques that have been developed. New sections/subsections added in this edition are: Simulated Annealing (Section 3.7), Boltzmann Machines (Section 3.8) and Extended Fuzzy if-then Rules Tables (Sub-section 5.5.3). Also, numerous changes and typographical corrections have been made throughout the manuscript. The Preface to the first edition follows. General scope of the book Artificial intelligence (AI) as a field has undergone rapid growth in diversification and practicality. For the past few decades, the repertoire of AI techniques has evolved and expanded. Scores of newer fields have been added to the traditional symbolic AI. Symbolic AI covers areas such as knowledge-based systems, logical reasoning, symbolic machine learning, search techniques, and natural language processing. The newer fields include neural networks, genetic algorithms or evolutionary computing, fuzzy systems, rough set theory, and chaotic systems.

NEURAL NETWORKS, FUZZY SYSTEMS AND EVOLUTIONARY ALGORITHMS : SYNTHESIS AND APPLICATIONS Jul 06 2021 The second edition of this book provides a comprehensive introduction to a consortium of technologies underlying soft computing, an evolving branch of computational intelligence, which in recent years, has turned synonymous to it. The constituent technologies discussed comprise neural network (NN), fuzzy system (FS), evolutionary algorithm (EA), and a number of hybrid systems, which include classes such as neuro-fuzzy, evolutionary-fuzzy, and neuro-evolutionary systems. The hybridization of the technologies is demonstrated on architectures such as fuzzy backpropagation network (NN-FS hybrid), genetic algorithm-based backpropagation network (NN-EA hybrid), simplified fuzzy ARTMAP (NN-FS hybrid), fuzzy associative memory (NN-FS hybrid), fuzzy logic controlled genetic algorithm (EA-FS hybrid) and evolutionary extreme learning machine (NN-EA hybrid) Every architecture has been discussed in detail through illustrative examples and applications. The algorithms have been presented in pseudo-code with a step-by-step illustration of the same in problems. The applications, demonstrative of the potential of the architectures, have been chosen from diverse disciplines of science and engineering. This book, with a wealth of information that is clearly presented and illustrated by many examples and applications, is designed for use as a text for the courses in soft computing at both the senior undergraduate and first-year postgraduate levels of computer science and engineering. It should also be of interest to researchers and technologists desirous of applying soft computing technologies to their respective fields of work.

Advances in Computational Intelligence Jul 26 2020 This two-volume set LNCS 6691 and 6692 constitutes the refereed proceedings of the 11th International Work-Conference on Artificial Neural Networks, IWANN 2011, held in Torremolinos-Málaga, Spain, in June 2011. The 154 revised papers were carefully reviewed and selected from 202 submissions for presentation in two volumes. The first volume includes 69 papers organized in topical sections on mathematical and theoretical methods in computational intelligence; learning and adaptation; bio-inspired systems and neuro-engineering; hybrid intelligent systems; applications of computational intelligence; new applications of brain-computer interfaces; optimization algorithms in graphic processing units; computing languages with bio-inspired devices and multi-agent systems; computational intelligence in multimedia processing; and biologically plausible spiking neural

processing.

Artificial Intelligence Problems and Their Solutions Apr 15 2022 This book lends insight into solving some well-known AI problems using the most efficient methods by humans and computers. The book discusses the importance of developing critical-thinking methods and skills, and develops a consistent approach toward each problem: 1) a precise description of a well-known AI problem coupled with an effective graphical representation; 2) discussion of possible approaches to solving each problem; 3) identifying and presenting the best known human solution to each problem; 4) evaluation and discussion of the Human Window aspects for the best solution; 5) a playability site where students can exercise the process of developing their solutions, as well as "experiencing" the best solution; 6) code or pseudo-code implementing the solution algorithm, and 7) academic references for each problem. Features: Addresses AI problems well known to computer science and mathematics students from a number of perspectives Covers classic AI problems such as Twelve Coins, Red Donkey, Cryptarithms, Rubik's Cube, Missionaries/Cannibals, Knight's Tour, Monty Hall, and more Includes a companion CD-ROM with source code, solutions, figures, and more Includes playability sites where students can exercise the process of developing their solutions Describes problem-solving methods which may be applied to many problem situations

Artificial Intelligence and Applied Mathematics in Engineering Problems May 04 2021 This book features research presented at the 1st International Conference on Artificial Intelligence and Applied Mathematics in Engineering, held on 20–22 April 2019 at Antalya, Manavgat (Turkey). In today's world, various engineering areas are essential components of technological innovations and effective real-world solutions for a better future. In this context, the book focuses on problems in engineering and discusses research using artificial intelligence and applied mathematics. Intended for scientists, experts, M.Sc. and Ph.D. students, postdocs and anyone interested in the subjects covered, the book can also be used as a reference resource for courses related to artificial intelligence and applied mathematics.

Artificial Intelligence and Expert Systems Dec 19 2019 This book is designed to identify some of the current applications and techniques of artificial intelligence as an aid to solving problems and accomplishing tasks. It provides a general introduction to the various branches of AI which include formal logic, reasoning, knowledge engineering, expert systems, neural networks, and fuzzy logic, etc. The book has been structured into five parts with an emphasis on expert systems: problems and state space search, knowledge engineering, neural networks, fuzzy logic, and Prolog. Features: Introduces the various branches of AI which include formal logic, reasoning, knowledge engineering, expert systems, neural networks, and fuzzy logic, etc. Includes a separate chapter on Prolog to introduce basic programming techniques in AI

Artificial Intelligence Jan 12 2022 Artificial Intelligence: A Modern Approach offers the most comprehensive, up-to-date introduction to the theory and practice of artificial intelligence. Number one in its field, this textbook is ideal for one or two-semester, undergraduate or graduate-level courses in Artificial Intelligence.

Mathematical Model Building in the Solution of Mechanics Problems: Human Protocols and the Mecho Trace Jun 17 2022

Deterministic Artificial Intelligence Feb 19 2020 Kirchhoff's laws give a mathematical description of electromechanics. Similarly, translational motion mechanics obey Newton's laws, while rotational motion mechanics comply with Euler's moment equations, a set of three nonlinear, coupled differential equations. Nonlinearities complicate the mathematical treatment of the seemingly simple action of rotating, and these complications lead to a robust lineage of research culminating here with a text on the ability to make rigid bodies in rotation become self-aware, and even learn. This book is meant for basic scientifically inclined readers commencing

with a first chapter on the basics of stochastic artificial intelligence to bridge readers to very advanced topics of deterministic artificial intelligence, espoused in the book with applications to both electromechanics (e.g. the forced van der Pol equation) and also motion mechanics (i.e. Euler's moment equations). The reader will learn how to bestow self-awareness and express optimal learning methods for the self-aware object (e.g. robot) that require no tuning and no interaction with humans for autonomous operation. The topics learned from reading this text will prepare students and faculty to investigate interesting problems of mechanics. It is the fondest hope of the editor and authors that readers enjoy the book.

Artificial Intelligence Dec 23 2022 This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Artificial Intelligence: Structures and Strategies for Complex Problem Solving is ideal for a one- or two-semester undergraduate course on AI. In this accessible, comprehensive text, George Luger captures the essence of artificial intelligence–solving the complex problems that arise wherever computer technology is applied. Ideal for an undergraduate course in AI, the Sixth Edition presents the fundamental concepts of the discipline first then goes into detail with the practical information necessary to implement the algorithms and strategies discussed. Readers learn how to use a number of different software tools and techniques to address the many challenges faced by today's computer scientists.

Artificial Intelligence and Software Engineering Feb 01 2021 First published in 1998. Routledge is an imprint of Taylor & Francis, an informa company.

Knowing our World: An Artificial Intelligence Perspective Feb 25 2023 Knowing our World: An Artificial Intelligence Perspective considers the methodologies of science, computation, and artificial intelligence to explore how we humans come to understand and operate in our world. While humankind's history of articulating ideas and building machines that can replicate the activity of the human brain is impressive, Professor Luger focuses on understanding the skills that enable these goals. Based on insights afforded by the challenges of AI design and program building, Knowing our World proposes a foundation for the science of epistemology. Taking an interdisciplinary perspective, the book demonstrates that AI technology offers many representational structures and reasoning strategies that support clarification of these epistemic foundations. This monograph is organized in three Parts; the first three chapters introduce the reader to the foundations of computing and the philosophical background that supports the AI tradition. These three chapters describe the origins of AI, programming as iterative refinement, and the representations and very high-level language tools that support AI application building. The book's second Part introduces three of the four paradigms that represent research and development in AI over the past seventy years: the symbol-based, connectionist, and complex adaptive systems. Luger presents several introductory programs in each area and demonstrates their use. The final three chapters present the primary theme of the book: bringing together the rationalist, empiricist, and pragmatist philosophical traditions in the context of a Bayesian world view. Luger describes Bayes' theorem with a simple proof to demonstrate epistemic insights. He describes research in model building and refinement and several philosophical issues that constrain the future growth of AI. The book concludes with his proposal of the epistemic stance of an active, pragmatic, model-revising realism.

Artificial Intelligence and Soft Computing Aug 07 2021 With all the material available in the field of artificial intelligence (AI) and soft computing-texts, monographs, and journal articles-there remains a serious gap in the literature. Until now, there has been no comprehensive resource accessible to a broad audience yet containing a depth and breadth of information that enables the reader to fully understand and readily apply AI and soft computing

concepts. Artificial Intelligence and Soft Computing fills this gap. It presents both the traditional and the modern aspects of AI and soft computing in a clear, insightful, and highly comprehensive style. It provides an in-depth analysis of mathematical models and algorithms and demonstrates their applications in real world problems. Beginning with the behavioral perspective of "human cognition," the text covers the tools and techniques required for its intelligent realization on machines. The author addresses the classical aspects-search, symbolic logic, planning, and machine learning-in detail and includes the latest research in these areas. He introduces the modern aspects of soft computing from first principles and discusses them in a manner that enables a beginner to grasp the subject. He also covers a number of other leading aspects of AI research, including nonmonotonic and spatio-temporal reasoning, knowledge acquisition, and much more. Artificial Intelligence and Soft Computing: Behavioral and Cognitive Modeling of the Human Brain is unique for its diverse content, clear presentation, and overall completeness. It provides a practical, detailed introduction that will prove valuable to computer science practitioners and students as well as to researchers migrating to the subject from other disciplines.

Contemporary Artificial Intelligence Oct 09 2021 The notion of artificial intelligence (AI) often sparks thoughts of characters from science fiction, such as the Terminator and HAL 9000. While these two artificial entities do not exist, the algorithms of AI have been able to address many real issues, from performing medical diagnoses to navigating difficult terrain to monitoring possible failures of spacecrafts. Exploring these algorithms and applications, Contemporary Artificial Intelligence presents strong AI methods and algorithms for solving challenging problems involving systems that behave intelligently in specialized domains such as medical and software diagnostics, financial decision making, speech and text recognition, genetic analysis, and more. One of the first AI texts accessible to students, the book focuses on the most useful problem-solving strategies that have emerged from AI. In a student-friendly way, the authors cover logic-based methods; probability-based methods; emergent intelligence, including evolutionary computation and swarm intelligence; data-derived logical and probabilistic learning models; and natural language understanding. Through reading this book, students discover the importance of AI techniques in computer science.

Intelligent Algorithms in Software Engineering Apr 03 2021 This book gathers the refereed proceedings of the Intelligent Algorithms in Software Engineering Section of the 9th Computer Science On-line Conference 2020 (CSOC 2020), held on-line in April 2020. Software engineering research and its applications to intelligent algorithms have now assumed an essential role in computer science research. In this book, modern research methods, together with applications of machine and statistical learning in software engineering research, are presented.

AI Algorithms, Data Structures, and Idioms in Prolog, Lisp, and Java May 16 2022

Dictionary of Artificial Intelligence Mar 14 2022

Managing and Understanding Artificial Intelligence Solutions Nov 10 2021 KI ist ein weltweiter Megatrend. Bedeutung, Leistung und Komplexität von KI-Lösungen nehmen rasant zu und daher wächst auch der Bedarf, einen Überblick über die relevanten KI-Lösungen zu behalten und die damit verbundenen Prioritäten und Risiken zu managen. Das vorgestellte AI Methods, Capabilities and Criticality Grid (AI-MC2-Grid) stellt eine Methode und ein Werkzeug dar, um diesen Überblick zu gewinnen und die KI-Lösungen zu verwalten. Nutzer des AI-MC2-Grid können Manager, Entwickler und Anwender von KI-Lösungen sein, aber auch Investoren, Politiker und Regelsetzer, die den Markt verstehen und bestimmte KI-Lösungen verwalten wollen.Das AI-MC2-Grid besteht aus drei Dimensionen: KI-Methoden, KI-Fähigkeiten und die Kritikalität einer KI-Lösung. Jede diskutierte KI-Lösung kann in diese drei Dimensionen

eingeordnet werden, so dass ähnliche KI-Lösungen verglichen werden können. Alternativ können komplexe KI-Lösungen anhand ihrer Komponenten analysiert werden. KI-Methoden entsprechen dabei typischen KI-Algorithmen, während KI-Fähigkeiten typischen Prozessschritten zum Aufbau intelligenter Workflows beschreiben. Sind die relevanten KI-Methoden und KI-Fähigkeiten einer bestimmten KI-Lösung gefunden, können Leistung, Folgen und mögliche Risiken und Alternativen diskutiert werden. Basierend auf der Klassifizierung stellt das Schadenspotenzial von Künstlicher Intelligenz eine bestimmte Stufe der Kritikalität dar. In diesem Zuge steigen mit zunehmender Kritikalität auch die Anforderungen an Tests, Kalibrierung, Inspektion, Kontrolle und Zertifizierung. Das AI-MC2-Grid eine leistungsfähige Methode und ein Werkzeug, um alle Arten von kommenden Normen und Standards von KI-Lösungen zu definieren und zu verwalten.Aus diesem guten Grund steht das AI-MC2-Grid im Mittelpunkt der Deutschen Normungsroadmap für Künstlichen Intelligenz, die als Werkzeug zur Unterstützung der Entwicklung und des Managements zukünftiger KI-Standards und -Normen

Artificial Intelligence and Machine Learning for Business for Non-Engineers May 24 2020 The next big area within the information and communication technology field is Artificial Intelligence (AI). The industry is moving to automate networks, cloud-based systems (e.g., Salesforce), databases (e.g., Oracle), AWS machine learning (e.g., Amazon Lex), and creating infrastructure that has the ability to adapt in real-time to changes and learn what to anticipate in the future. It is an area of technology that is coming faster and penetrating more areas of business than any other in our history. AI will be used from the C-suite to the distribution warehouse floor. Replete with case studies, this book provides a working knowledge of AI's current and future capabilities and the impact it will have on every business. It covers everything from healthcare to warehousing, banking, finance and education. It is essential reading for anyone involved in industry.

Means-ends analysis and the solution of mechanics problems Jul 18 2022

Artificial Intelligence in the 21st Century Feb 13 2022 This new edition provides a comprehensive, colorful, up-to-date, and accessible presentation of AI without sacrificing theoretical foundations. It includes numerous examples, applications, full color images, and human interest boxes to enhance student interest. New chapters on robotics and machine learning are now included. Advanced topics cover neural nets, genetic algorithms, natural language processing, planning, and complex board games. A companion DVD is provided with resources, applications, and figures from the book. Numerous instructors' resources are available upon adoption. eBook Customers: Companion files are available for downloading with order number/proof of purchase by writing to the publisher at info@merclearning.com. FEATURES: • Includes new chapters on robotics and machine learning and new sections on speech understanding and metaphor in NLP • Provides a comprehensive, colorful, up to date, and accessible presentation of AI without sacrificing theoretical foundations • Uses numerous examples, applications, full color images, and human interest boxes to enhance student interest • Introduces important AI concepts e.g., robotics, use in video games, neural nets, machine learning, and more thorough practical applications • Features over 300 figures and color images with worked problems detailing AI methods and solutions to selected exercises • Includes DVD with resources, simulations, and figures from the book • Provides numerous instructors' resources, including: solutions to exercises, Microsoft PP slides, etc.

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- Artificial Intelligence And Machine Learning For Business For Non Engineers
- Computational Logic And Human Thinking
- Liability For Crimes Involving Artificial Intelligence Systems
- Deterministic Artificial Intelligence
- Design Of Logic based Intelligent Systems
- Artificial Intelligence And Expert Systems