Artificial Intelligence By Saroj Kaushik

This book presents high-quality, original contributions (both theoretical and experimental) on Information Security, Machine Learning, Data Mining and Internet of Things (IoT). It gathers papers presented at ICETIT 2019, the 1st International Conference on Emerging Trends in Information Technology, which was held in Delhi, India, in June 2019. This conference series represents a targeted response to the growing need for research that reports on and assesses the practical implications of IoT and network technologies, AI and machine learning, data analytics and cloud computing, security and privacy, and next generation computing technologies.

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.

There has been a movement over the years to make machines intelligent. With the advent of modern technology, AI has become the core part of day-to-day life. But it is accentuated to have a book that keeps abreast of all the state-of-the-art

concepts (pertaining to AI) in simplified, explicit and elegant way, expounding on ample examples so that the beginners are able to comprehend the subject with ease. The book on Artificial Intelligence, dexterously divided into 21 chapters, fully satisfies all these pressing needs. It is intended to put each and every concept related to intelligent system in front of the readers in the most simplified way so that while understanding the basic concepts, they will develop thought process that can contribute to the building of advanced intelligent systems. Various cardinal landmarks pertaining to the subject such as problem solving, search techniques, intelligent agents, constraint satisfaction problems, knowledge representation, planning, machine learning, natural language processing, pattern recognition, game playing, hybrid and fuzzy systems, neural network-based learning and future work and trends in AI are now under the single umbrella of this book, thereby showing a nice blend of theoretical and practical aspects. With all the latest information incorporated and several pedagogical attributes included, this textbook is an invaluable learning tool for the undergraduate and postgraduate students of computer science and engineering, and information technology. KEY FEATURES • Highlights a clear and concise presentation through adequate study material • Follows a systematic approach to explicate fundamentals as well as recent advances in the area • Presents ample

relevant problems in the form of multiple choice questions, concept review questions, critical thinking exercise and project work • Incorporates various case studies for major topics as well as numerous industrial examples

This work is based on the experience and notes of the authors while teaching mathematics courses to engineering students at the Indian Institute of Technology, New Delhi. It covers syllabi of two core courses in mathematics for engineering students.

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.

This book constitutes the refereed proceedings of the First International Conference on Advances in Computing and Data Sciences, ICACDS 2016, held in Ghaziabad, India, in November 2016. The 64 full papers were carefully reviewed and selected from 502 submissions. The papers are organized in topical sections on Advanced Computing; Communications; Informatics; Internet of Things; Data Sciences.

"During the last decades Computational Intelligence has emerged and showed its contributions in various broad research communities (computer science,

engineering, finance, economic, decision making, etc.). This was done by proposing approaches and algorithms based either on turnkey techniques belonging to the large panoply of solutions offered by computational intelligence such as data mining, genetic algorithms, bio-inspired methods, Bayesian networks, machine learning, fuzzy logic, artificial neural networks, etc. or inspired by computational intelligence techniques to develop new ad-hoc algorithms for the problem under consideration. This volume is a comprehensive collection of extended contributions from the 4th International Conference on Computer Science and Its Applications (CIIA'2013) organized into four main tracks: Track 1: Computational Intelligence, Track 2: Security & Network Technologies, Track 3: Information Technology and Track 4: Computer Systems and Applications. This book presents recent advances in the use and exploitation of computational intelligence in several real world hard problems covering these tracks such as image processing, Arab text processing, sensor and mobile networks, physical design of advanced databases, model matching, etc. that require advanced approaches and algorithms borrowed from computational intelligence for solving them.

This Book Presents A Systematic Exposition Of Formal Logic, Evolution Of Logic Programming And The Features Of Prolog Programming Language. It Covers Both Propositional And

Predicate Logic And Explains Various Approaches Towards Validity, Inconsistency Of Logic Formulae And Problem Solving.After Explaining The Basic Concepts And Rules In Logic, The Book Present Logic Programming And Introduces Prolog. The Various Features Of Prolog Are Suitably Highlighted And Programming Techniques Are Explained In Detail With Illustrative Examples.The Book Further Explains Control Primitives And Meta Level Programming. The Text Includes A Large Number Of Solved Examples To Illustrate The Concepts And Techniques. Review Exercises Are Given At The End Of Each Chapter.The Book Would Serve As An Excellent Text For Undergraduate And Postgraduate Computer Science And Engineering Students Pursuing Courses On Artificial Intelligence And Expert Systems.

This series will include monographs and collections of studies devoted to the investigation and exploration of knowledge, information, and data processing systems of all kinds, no matter whether human, (other) animal, or machine. Its scope is intended to span the full range of interests from classical problems in the philosophy of mind and philosophical psychology through issues in cognitive psychology and sociobiology (concerning the mental capabilities of other species) to ideas related to artificial intelligence and to computer science. While primary emphasis will be placed upon theoretical, conceptual, and epistemological aspects of these problems and domains, empirical, experimental, and methodological studies will also appear from time to time. The present volume offers a broad and imaginative approach to the study of the mind, which emphasizes several themes, namely: the importance of functional organization apart from the specific material by means of which it may be implemented; the use of modeling to simulate these functional processes and subject them to certain kinds of tests; the use of mentalistic language to describe and predict the behavior of artifacts; and the subsumption of

processes of adaptation, learning, and intelligence by means of explanatory principles. The author has produced a rich and complex, lucid and readable discussion that clarifies and illuminates many of the most difficult problems arising within this difficult domain.
In the 11 contributions, theorists historically associated with each position identify the basic tenets of their position.Have the classical methods and ideas of AI outlived their usefulness? Foundations of Artificial Intelligence critically evaluates the fundamental assumptions underpinning the dominant approaches to AI. In the 11 contributions, theorists historically associated with each position identify the basic tenets of their position. They discuss the underlying principles, describe the natural types of problems and tasks in which their approach succeeds, explain where its power comes from, and what its scope and limits are. Theorists generally skeptical of these positions evaluate the effectiveness of the method or approach and explain why it works - to the extent they believe it does - and why it eventually fails.ContentsFoundations of AI: The Big Issues, D. Kirsh - Logic and Artificial Intelligence, N. J. Nilsson - Rigor Mortis: A Response to Nilsson's 'Logic and Artificial Intelligence, ' L. Birnbaum - Open Information Systems Semantics for Distributed Artificial Intelligence, C. Hewitt - Social Conceptions of Knowledge and Action: DAI Foundations and Open Systems Semantics, L. Gasser - Intelligence without Representation, R. A. Brooks - Today the Earwig, Tomorrow Man? D. Kirsh - On the Thresholds of Knowledge, D. B. Lenat, E. A. Feigenbaum - The Owl and the Electric Encyclopedia, B. C. Smith - A Preliminary Analysis of the Soar Architecture as a Basis for General Intelligence, P. S. Rosenbloom, J. E. Laird, A. Newell, R. McCarl - Approaches to the Study of Intelligence, D. A. Norman
"If we had computers that knew everything there was to knowabout things—using data they

gathered without any help fromus—we would be able to track and count everything, and greatlyreduce waste, loss, and cost. We would know when things neededreplacing, repairing or recalling, and whether they were fresh orpast their best. The Internet of Things has the potential to changethe world, just as the Internet did. Maybe even more so." —Kevin Ashton, originator of the term, Internet of Things An examination of the concept and unimagined potentialunleashed by the Internet of Things (IoT) with IPv6 andMIPv6 What is the Internet of Things? How can it help my organization?What is the cost of deploying such a system? What are the securityimplications? Building the Internet of Things with IPv6 andMIPv6: The Evolving World of M2M Communications answers thesequestions and many more. This essential book explains the concept and potential that theIoT presents, from mobile applications that allow home appliancesto be programmed remotely, to solutions in manufacturing and energyconservation. It features a tutorial for implementing the IoT usingIPv6 and Mobile IPv6 and offers complete chapter coverage thatexplains: What is the Internet of Things? Internet of Things definitions and frameworks Internet of Things application examples Fundamental IoT mechanisms and key technologies Evolving IoT standards Layer 1/2 connectivity: wireless technologies for the IoT Layer 3 connectivity: IPv6 technologies for the IoT IPv6 over low power WPAN (6lowpan) Easily accessible, applicable, and not overly technical,Building the Internet of Things with IPv6 and MIPv6 is animportant resource for Internet and ISP providers,telecommunications companies, wireless providers, logisticsprofessionals, and engineers in equipment development, as well asgraduate students in computer science and computer engineeringcourses.
Sentiment analysis and opinion mining is the field of study that analyzes people's opinions,

sentiments, evaluations, attitudes, and emotions from written language. It is one of the most active research areas in natural language processing and is also widely studied in data mining, Web mining, and text mining. In fact, this research has spread outside of computer science to the management sciences and social sciences due to its importance to business and society as a whole. The growing importance of sentiment analysis coincides with the growth of social media such as reviews, forum discussions, blogs, micro-blogs, Twitter, and social networks. For the first time in human history, we now have a huge volume of opinionated data recorded in digital form for analysis.Sentiment analysis systems are being applied in almost every business and social domain because opinions are central to almost all human activities and are key influencers of our behaviors. Our beliefs and perceptions of reality, and the choices we make, are largely conditioned on how others see and evaluate the world. For this reason, when we need to make a decision we often seek out the opinions of others. This is true not only for individuals but also for organizations.This book is a comprehensive introductory and survey text. It covers all important topics and the latest developments in the field with over 400 references. It is suitable for students, researchers and practitioners who are interested in social media analysis in general and sentiment analysis in particular. Lecturers can readily use it in class for courses on natural language processing, social media analysis, text mining, and data mining. Lecture slides are also available online.Table of Contents: Preface / Sentiment Analysis: A Fascinating Problem / The Problem of Sentiment Analysis / Document Sentiment Classification / Sentence Subjectivity and Sentiment Classification / Aspect-Based Sentiment Analysis / Sentiment Lexicon Generation / Opinion Summarization / Analysis of Comparative Opinions / Opinion Search and Retrieval / Opinion Spam Detection / Quality of Reviews /

Concluding Remarks / Bibliography / Author Biography

There are many books available in the market on the proposed topic but none of them can be termed as comprehensive. Besides, students face many problems in understanding the language of this books. Keeping these points in mind, Artificial Intelligence was prepared, which should be simple enough to comprehend and comprehensive enough to encompass all the topics of different institutions and universities.

For the students of B.E./B.Tech Computer Science Engineering and Information Technology (CSE/IT)

This comprehensive and well-written book presents the fundamentals of object-oriented software engineering and discusses the recent technological developments in the field. It focuses on object-oriented software engineering in the context of an overall effort to present object-oriented concepts, techniques and models that can be applied in software estimation, analysis, design, testing and quality improvement. It applies unified modelling language notations to a series of examples with a real-life case study. The example-oriented approach followed in this book will help the readers in understanding and applying the concepts of object-oriented software engineering quickly and easily in various application domains. This book is designed for the undergraduate and postgraduate students of computer science and engineering, computer applications, and information technology. KEY FEATURES : Provides the

foundation and important concepts of object-oriented paradigm. Presents traditional and object-oriented software development life cycle models with a special focus on Rational Unified Process model. Addresses important issues of improving software quality and measuring various object-oriented constructs using object-oriented metrics. Presents numerous diagrams to illustrate object-oriented software engineering models and concepts. Includes a large number of solved examples, chapter-end review questions and multiple choice questions along with their answers.

An absolute must for any medical students preparing for an orthopaedic examination and also for post graduate entrance examination

This book is a collection of high-quality research work on cutting-edge technologies and the most-happening areas of computational intelligence and data engineering. It includes selected papers from the International Conference on Computational Intelligence and Data Engineering (ICCIDE 2020). It covers various topics, including collective intelligence, intelligent transportation systems, fuzzy systems, Bayesian network, ant colony optimization, data privacy and security, data mining, data warehousing, big data analytics, cloud computing, natural language processing, swarm intelligence and speech processing.

This volume contains the edited versions of the technical presentations of the

third international gathering of researchers interested in the applications of artificial neural networks, genetic algorithms, and fuzzy logic. The papers in this volume are grouped into five categories: artificial neural network architectures, pattern recognition, neuro-control, neuro-manufacturing, and neuro-engineering systems. Contents include: Theoretical Foundation for CMAC Technique, Embeddable Reconfigurable Neuroprocessors, Heave Compensation Via Neural Networks, Benchmarking Framework for Neuro Algorithms, Handwriting Recognition Using an Art Based Network, Neural Vector Quantization for Image Compression, Training Fuzzy Controller, Genetic Three-Dimensional Packer, and Geophysical Target Identification in Environmental Investigations.
The Department of Electronics and Communication Engineering of KIET Group of Institutions, Delhi-NCR organized the 4th International Conference ICCE-2020 during November 28-29, 2020. Information compiled in this book is based on the 114 research papers of excellent quality covering different domains of Electronics and Communication Engineering, Computer Science Engineering, Information Technology, Electrical Engineering, Electronics and Instrumentation Engineering. The subject areas treated in the book are: Satellite, Radar and Microwave Techniques, Secure, Smart, and Reliable Networks, Next Generation Networks, Devices & Circuits, Signal & Image Processing, New Emerging Technologies,

having the central focus on Recent Trends in Communication & Electronics (ICCE-2020). In addition, a few themes based on Special Sessions have also been conducted in ICCE-2020. The objective of the book resulting from the 4th International Conference on Recent Trends in Communication & Electronics (ICCE-2020) is to provide a resource for the study and research work for an interested audience comprising of researchers, students, audience, and practitioners in the areas of Communications & Computing Systems.
In this richly illustrated book, deep neural network learning algorithms are explained informally first, followed by detailed mathematical analyses. Written in an informal style, with a comprehensive glossary, tutorial appendices, and further readings, this is an ideal introduction to the algorithmic engines of modern artificial intelligence.
Supply Chain Management, 7e introduces high-level strategy and concepts while giving students the practical tools necessary to solve supply chain problems. Using a strategic framework, students are guided through all the key drivers of supply chain perf
This volume constitutes the first of three parts of the refereed proceedings of the First International Conference on Computer Science and Information Technology, CCSIT 2010, held in Bangalore, India, in January 2011. The 59 revised full papers presented in

this volume were carefully reviewed and selected. The papers are organized in topical sections on distributed and parallel systems and algorithms; DSP, image processing, pattern recognition, and multimedia; software engineering; database and data Mining; as well as soft computing, such as AI, neural networks, fuzzy systems, etc.

The book covers the most recent developments in machine learning, signal analysis, and their applications. It covers the topics of machine intelligence such as: deep learning, soft computing approaches, support vector machines (SVMs), least square SVMs (LSSVMs) and their variants; and covers the topics of signal analysis such as: biomedical signals including electroencephalogram (EEG), magnetoencephalography (MEG), electrocardiogram (ECG) and electromyogram (EMG) as well as other signals such as speech signals, communication signals, vibration signals, image, and video. Further, it analyzes normal and abnormal categories of real-world signals, for example normal and epileptic EEG signals using numerous classification techniques. The book is envisioned for researchers and graduate students in Computer Science and Engineering, Electrical Engineering, Applied Mathematics, and Biomedical Signal Processing.

This book constitutes the refereed proceedings of the 22nd Australasian Joint Conference on Artificial Intelligence, AI 2009, held in Melbourne, Australia, in December 2009. The 68 revised full papers presented were carefully reviewed and selected from 174 submissions. The papers are organized in topical sections on

agents; AI applications; computer vision and image processing; data mining and statistical learning; evolutionary computing; game playing; knowledge representation and reasoning; natural language and speech processing; soft computing; and user modelling.

This book features selected papers presented at the Fourth International Conference on Nanoelectronics, Circuits and Communication Systems (NCCS 2018). Covering topics such as MEMS and nanoelectronics, wireless communications, optical communications, instrumentation, signal processing, the Internet of Things, image processing, bioengineering, green energy, hybrid vehicles, environmental science, weather forecasting, cloud computing, renewable energy, RFID, CMOS sensors, actuators, transducers, telemetry systems, embedded systems, and sensor network applications in mines, it offers a valuable resource for young scholars, researchers, and academics alike.

The practical e-guide that gives you the skills to succeed as a project manager. Discover how to improve your project management skills by defining a project brief, identifying stakeholders, and building a strong team. You'll also learn useful tips for initiating projects, setting deadlines, and managing your budgets. Essential Managers gives you a practical "how-to" approach with step-by-step instructions, tips, checklists, and "ask yourself" features showing you how to focus your energy, manage change, and make an impact. DK's Essential Managers series contains the knowledge you need

to be a more effective manager and hone your management style. Whether you're new to project management or simply looking to sharpen your existing skills, this is the e-guide for you.

This book deals with the role of international standards for corporate governance in the context of corporate social responsibility. Based on the fundamentals of moral theory, the book examines governance and CSR in general, addressing questions such as: Is "good governance" not affected by moral concerns? How do the principles and practices of CSR standards adhere to or conflict with insights from business ethics and moral theory? To what extent do the standards and governance models provide normative guidance? Do the standards and governance guidelines provide an adequate means of benchmarking and auditing? Are these standards a help or a hindrance to stakeholder engagement and transparency? The book provides insightful and thought-provoking answers to these and many other important questions concerning CSR standards, and offers a valuable resource for practitioners, academics and students at business schools and other institutions.

This two-volume set (LNAI 11683 and LNAI 11684) constitutes the refereed proceedings of the 11th International Conference on Computational Collective Intelligence, ICCCI 2019, held in Hendaye France, in September 2019.The 117 full papers presented were carefully reviewed and selected from 200 submissions. The papers are grouped in topical sections on: computational collective intelligence and

natural language processing; machine learning in real-world data; distributed collective intelligence for smart manufacturing; collective intelligence for science and technology; intelligent management information systems; intelligent sustainable smart cities; new trends and challenges in education: the university 4.0; intelligent processing of multimedia in web systems; and big data streaming, applications and security. This book is a complete guide to the C4.5 system as implemented in C for the UNIX environment. It contains a comprehensive guide to the system's use, the source code (about 8,800 lines), and implementation notes. Search is an important component of problem solving in artificial intelligence (AI) and, more generally, in computer science, engineering and operations research. Combinatorial optimization, decision analysis, game playing, learning, planning, pattern recognition, robotics and theorem proving are some of the areas in which search algbrithms playa key role. Less than a decade ago the conventional wisdom in artificial intelligence was that the best search algorithms had already been invented and the likelihood of finding new results in this area was very small. Since then many new insights and results have been obtained. For example, new algorithms for state space, AND/OR graph, and game tree search were discovered. Articles on new theoretical developments and experimental results on backtracking, heuristic search and constraint propaga tion were

published. The relationships among various search and combinatorial algorithms in AI, Operations Research, and other fields were clarified. This volume brings together some of this recent work in a manner designed to be accessible to students and professionals interested in these new insights and developments. Offers a practical and theoretical coverage of investments market. This book places emphasis on asset allocation, and offers a treatment of futures, options, and other derivative security markets.

This is a comprehensive textbook on fundamentals of methodologies and practices in soft computing domain for students of undergraduate and postgraduate engineering and allied courses who have opted for this course. Experts on the subject have deftly explained the concepts with help of examples and pseudo algorithms for various methods. Since computational intelligence and machine intelligence are backbone and foundation for smart systems, soft computing provides basis for building such systems. This book will equip readers to provide soft computing techniques with low cost and reasonably good solutions to hard problems.

This book presents high-quality, original contributions (both theoretical and experimental) on software engineering, cloud computing, computer networks & internet technologies, artificial intelligence, information security, and database

and distributed computing. It gathers papers presented at ICRIC 2019, the 2nd International Conference on Recent Innovations in Computing, which was held in Jammu, India, in March 2019. This conference series represents a targeted response to the growing need for research that reports on and assesses the practical implications of IoT and network technologies, AI and machine learning, cloud-based e-Learning and big data, security and privacy, image processing and computer vision, and next-generation computing technologies.
Designed as an introductory level textbook on Artificial Neural Networks at the postgraduate and senior undergraduate levels in any branch of engineering, this self-contained and well-organized book highlights the need for new models of computing based on the fundamental principles of neural networks. Professor Yegnanarayana compresses, into the covers of a single volume, his several years of rich experience, in teaching and research in the areas of speech processing, image processing, artificial intelligence and neural networks. He gives a masterly analysis of such topics as Basics of artificial neural networks, Functional units of artificial neural networks for pattern recognition tasks, Feedforward and Feedback neural networks, and Archi-tectures for complex pattern recognition tasks. Throughout, the emphasis is on the pattern processing feature of the neural networks. Besides, the presentation of real-world

applications provides a practical thrust to the discussion.
Copyright: 7f201cd7f94bc37bf4b9d323081483f4