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Handbook of Research on Lifestyle Sustainability and Management Solutions Using AI, Big Data Analytics, and Visualization - Iyer, Sailesh  
Suryanarayan 2021-12-24

The sudden outbreak of the COVID-19 pandemic has curbed human lifestyle by imposing restrictions on regular daily movements that had

been taken for granted. Due to the pandemic, the welfare segment has received more attention, and every possible effort is being made to prioritize the services at the top. This can be made possible while using the latest tools, technologies, and resources that impact the human culture and welfare of well-being.

Novel methods and devices that make the welfare services more efficient, adaptive, transparent, and cost-effective need to be explored. The Handbook of Research on Lifestyle Sustainability and Management Solutions Using AI, Big Data Analytics, and Visualization offers extensive research on lifestyle management and services that contribute towards indication, detection, conduction, protection, and technological enhancement including machine learning, deep learning, artificial intelligence, big data analytics, and visualization. It also provides mechanisms that can improve lifestyle monitoring and help in increasing the immunity of the human body. Covering topics such as big data, robot therapy, and wearable technology, it is ideal for students, researchers, technologists, IT specialists, computer engineers, systems engineers, data scientists, doctors, hospital administrators, engineers, academicians, and technology providers.

Trends in Deep Learning Methodologies -

Vincenzo Piuri 2020-11-12

Trends in Deep Learning Methodologies: Algorithms, Applications, and Systems covers deep learning approaches such as neural networks, deep belief networks, recurrent neural networks, convolutional neural networks, deep auto-encoder, and deep generative networks, which have emerged as powerful computational models. Chapters elaborate on these models which have shown significant success in dealing with massive data for a large number of applications, given their capacity to extract complex hidden features and learn efficient representation in unsupervised settings. Chapters investigate deep learning-based algorithms in a variety of application, including biomedical and health informatics, computer vision, image processing, and more. In recent years, many powerful algorithms have been developed for matching patterns in data and making predictions about future events. The major advantage of deep learning is to process

big data analytics for better analysis and self-adaptive algorithms to handle more data. Deep learning methods can deal with multiple levels of representation in which the system learns to abstract higher level representations of raw data. Earlier, it was a common requirement to have a domain expert to develop a specific model for each specific application, however, recent advancements in representation learning algorithms allow researchers across various subject domains to automatically learn the patterns and representation of the given data for the development of specific models. Provides insights into the theory, algorithms, implementation and the application of deep learning techniques Covers a wide range of applications of deep learning across smart healthcare and smart engineering Investigates the development of new models and how they can be exploited to find appropriate solutions

**Artificial Intelligence And Intelligence Systems** - Mr. Thumu Muni Balaji 2023-02-20

The goal of imbuing artificial intelligence into robots has been actively pursued throughout the course of the last several decades. As a direct consequence of the proliferation of modern technology, artificial intelligence (AI) has become a crucial component of day-to-day life. This change was brought about by a combination of factors. The book "Artificial Intelligence and Intelligent Systems" offers a thorough examination of the primary ideas and procedures associated with artificial intelligence. This book explores recent developments in artificial intelligence (AI) and their applications in a variety of different areas. In order to promote a more in-depth knowledge of artificial intelligence (AI), many types of intelligent systems, including expert systems, genetic algorithms, fuzzy systems, artificial neural networks, and swarm intelligent systems, are dissected in detail and shown with examples. The most recent advances in AI are used to solve real-world challenges, which are emphasized

throughout the book. The term "artificial intelligence (AI) encompasses both the scientific research and the technological development that are required to produce intelligent devices, most notably intelligent computer programmes. The entire word is known as artificial intelligence, but its abbreviation is AI. When a piece of machinery has the ability to think for itself, we say that it demonstrates artificial intelligence. The level of intellect, speech, and vision possessed by humans serves as a benchmark for the development of artificial intelligence.

**Fundamentals Of Deep Learning: Theory And Applications** - Dr. Pokkuluri Kiran Sree  
2023-03-29

Deep learning, often known as DL, is an approach to machine learning that is increasingly seen as the way of the future. Because of its impressive power of learning high-level abstract characteristics from enormous amounts of data, DL garners a lot of interest and also has a lot of success in pattern

recognition, computer vision, data mining, and knowledge discovery. This is why DL is so successful in these areas. This book will not only seek to give a basic roadmap or direction to the existing deep learning approaches, but it will also highlight the problems and imagine fresh views that can lead to additional advancements in this subject. One of the most talked about topics in data science today is deep learning. Deep learning is a subfield of machine learning that makes use of sophisticated algorithms that take their cues from the way our own neural networks are wired and operate. The goal of this book is to provide a thorough introduction to deep learning, including an examination of its underlying algorithms, a presentation of its most recent theoretical advancements, a discussion of the most popular deep learning platforms and data sets, and an account of the significant advances made by a wide range of deep learning methodologies in areas such as text, video, image, speech, and audio processing.

## **Deep Learning and its Applications** - Dr. S. Manikandan 2022-12-30

Deep Learning and its Applications book chapter is intended to provide various deep insight about Deep learning in various applications. According to current Industry 4.0 standards, Deep learning on the emerging research area to give various services to IT and ITeS. In this book chapter various real time applications are taken for evaluating deep learning approach. Deep Learning is the subset of machine learning which has further learned results of artificial intelligent applications. Artificial Intelligent is the current scenario for making effective decisions. Here the applications are medical image processing, moving objects, image analysis, classification, clustering, prediction, and restoration used to identify various results. Based on each chapter different problems are taken for evaluation and apply different deep learning principles to find accuracy, precision, and score functions. Supervised and

Unsupervised learning techniques, TensorFlow, Yolo classifier and Colabs are used to simulate the applications. In this book chapters are very useful for researchers, students, and faculty community to learn about Deep Learning in current trends.

*Applications of Artificial Intelligence for Smart Technology* - Swarnalatha, P. 2020-10-30  
As global communities are attempting to transform into more efficient and technologically-advanced metropolises, artificial intelligence (AI) has taken a firm grasp on various professional fields. Technology used in these industries is transforming by introducing intelligent techniques including machine learning, cognitive computing, and computer vision. This has raised significant attention among researchers and practitioners on the specific impact that these smart technologies have and what challenges remain. Applications of Artificial Intelligence for Smart Technology is a pivotal reference source that provides vital

research on the implementation of advanced technological techniques in professional industries through the use of AI. While highlighting topics such as pattern recognition, computational imaging, and machine learning, this publication explores challenges that various fields currently face when applying these technologies and examines the future uses of AI. This book is ideally designed for researchers, developers, managers, academicians, analysts, students, and practitioners seeking current research on the involvement of AI in professional practices.

*Advanced computer Architecture* - Dr.Vijendra Pratap Singh 2023-03-01

Dr.Vijendra Pratap Singh,Dr.Atili Venkata Ramana, Mr.Neeraj Kumar ,Dr.Boddepalli Rajani  
*Dynamics of Swarm Intelligence Health Analysis for the Next Generation* - Suresh Kumar,

Arumugam 2023-07-10

In today's world, smart healthcare supports the out-of-hospital concept, which transforms and

offers higher care standards. This is accomplished with individual requirements with the help of public opinion. Moreover, smart healthcare systems are generally designed to sense individual health status data, which can be forwarded to clinical professionals for interpretation. Swarm intelligence analysis is a valuable tool for categorizing public opinion into different sentiments. Dynamics of Swarm Intelligence Health Analysis for the Next Generation discusses the role of behavioral activity in the evolution of traditional medical systems to intelligent systems. It further focuses on the economic, social, and environmental impacts of swarm intelligence smart healthcare systems. Covering topics such as healthcare data analytics, clustering algorithms, and the internet of medical things, this premier reference source is an excellent resource for healthcare professionals, hospital administrators, IT managers, policymakers, educators and students of higher education, researchers, and

academicians.

**Use of IoT - Internet of things** - DR. ARPIT JAIN 2022-05-31

The developing peculiarity of the Internet of Things (IoT), which is that any thing equipped for being associated with the Internet will be, presents a remarkable chance for organizations. Utilizing a broad writing audit, the flow research analyzes the critical change in showcasing techniques that need to happen to focus on the millennial age of as they embrace IoT. Most examination characterizes the Millennial age as those brought into the world from the mid 1980s to the mid 2000s. As people in this age become older, there are two social ramifications: 1) their acknowledgment of innovation proposes they will rush to embrace IoT, and 2) their developing buying power and purchaser conduct make them an optimal objective for advertisers. Recent college grads who take on IoT offer their information all the more eagerly to advertisers and firms, which makes it simpler for advertisers

to exactly gather information and target clients more. Furthermore, IoT gadgets will empower different stages for content promoting that are fundamentally unique in relation to and more successful than a 30 second TV plug or an advanced pennant notice. Advertising messages will

*Process Mining Techniques for Pattern Recognition* - Vikash Yadav 2022

This book focuses on the theory, practice, and concepts of process mining techniques in detail, especially pattern recognition in diverse society, science, medicine, engineering, and business. The book deliberates several perspectives on process mining techniques in the broader context of data science and big data approaches. *Process Mining Techniques for Pattern Recognition: Concepts, Theory, and Practice* provides an introduction to process mining techniques and pattern recognition. After that, it delivers the fundamentals of process modelling and mining essential to comprehend the book.

The text emphasizes discovery as an important process mining task and includes case studies as well as real-life examples to guide users in successfully applying process mining techniques for pattern recognition in practice. Intended to be an introduction to process mining and pattern recognition for students, academics, and practitioners, this book is perfect for those who want to learn the basics, and also gain an understanding of the concepts on a deeper level.

### **BASIC CONCEPTS OF AI AND ROBOTICS -**

Dr. M. Purushotham 2023-01-19

An accessible book that explains the fundamentals of Artificial Intelligence (AI). In most cases, a difficult, lengthy, and highly technical textbook isn't the best approach to explain the fundamentals of artificial intelligence. This book is suitable for you if you comprehend the fundamentals of robotics and wish to create or improve the intelligence of your robots. Readers with an interest in artificial intelligence and robotics will find plenty of value

in this book. This book covers topics like Introduction to Robotics Fundamentals of Robotics, Robot Kinematics, Robot Programming languages & systems, three levels of robot programming, problems peculiar to robot programming languages, state of the art, Need for AI in Robotics. Thinking and acting humanly, intelligent agents, structure of agents, AI and game playing, static evaluation move generator, game playing strategies, Robot Classification, Robot Specification, notation, kinematic representations and transformations, dynamics techniques; trajectory planning and control, DDD concept, Intelligent robots, Robot anatomy- Definition, law of robotics, History and Terminology of Robotics-Accuracy and repeatability of Robotics-Simple problems- Specifications of Robot-Speed of Robot, Robot joints and links-Robot classifications- Architecture of robotic systems.

### **Cognitive Big Data Intelligence with a Metaheuristic Approach - Sushruta Mishra**



2021-11-09

Cognitive Big Data Intelligence with a Metaheuristic Approach presents an exact and compact organization of content relating to the latest metaheuristics methodologies based on new challenging big data application domains and cognitive computing. The combined model of cognitive big data intelligence with metaheuristics methods can be used to analyze emerging patterns, spot business opportunities, and take care of critical process-centric issues in real-time. Various real-time case studies and implemented works are discussed in this book for better understanding and additional clarity. This book presents an essential platform for the use of cognitive technology in the field of Data Science. It covers metaheuristic methodologies that can be successful in a wide variety of problem settings in big data frameworks. Provides a unique opportunity to present the work on the state-of-the-art of metaheuristics approach in the area of big data processing

developing automated and intelligent models Explains different, feasible applications and case studies where cognitive computing can be successfully implemented in big data analytics using metaheuristics algorithms Provides a snapshot of the latest advances in the contribution of metaheuristics frameworks in cognitive big data applications to solve optimization problems

*Dark Web Pattern Recognition and Crime Analysis Using Machine Intelligence* - Rawat, Romil 2022-05-13

Data stealing is a major concern on the internet as hackers and criminals have begun using simple tricks to hack social networks and violate privacy. Cyber-attack methods are progressively modern, and obstructing the attack is increasingly troublesome, regardless of whether countermeasures are taken. The Dark Web especially presents challenges to information privacy and security due to anonymous behaviors and the unavailability of data. To

better understand and prevent cyberattacks, it is vital to have a forecast of cyberattacks, proper safety measures, and viable use of cyber-intelligence that empowers these activities. Dark Web Pattern Recognition and Crime Analysis Using Machine Intelligence discusses cyberattacks, security, and safety measures to protect data and presents the shortcomings faced by researchers and practitioners due to the unavailability of information about the Dark Web. Attacker techniques in these Dark Web environments are highlighted, along with intrusion detection practices and crawling of hidden content. Covering a range of topics such as malware and fog computing, this reference work is ideal for researchers, academicians, practitioners, industry professionals, computer scientists, scholars, instructors, and students. Mastering Disruptive Technologies - Dr. R. K. Dhanaraj 2021-04-30  
About the Book: The book is divided into 4 modules which consist of 21 chapters, that

narrates briefly about the top five recent emerging trends such as: Cloud Computing, Internet of Things (IoT), Blockchain, Artificial Intelligence, and Machine Learning. At the end of each module, authors have provided two Appendices. One is Job oriented short-type questions with answers, and the second one provide us different MCQs with their keys. Salient Features of the Book: □ Detailed Coverage on Topics like: Introduction to Cloud Computing, Cloud Architecture, Cloud Applications, Cloud Platforms, Open-Source Cloud Simulation Tools, and Mobile Cloud Computing. □ Expanded Coverage on Topics like: Introduction to IoT, Architecture, Core Modules, Communication models and protocols, IoT Environment, IoT Testing, IoT and Cloud Computing. □ Focused Coverage on Topics like: Introduction to Blockchain Technology, Security and Privacy component of Blockchain Technology, Consensus Algorithms, Blockchain Development Platform, and Various Applications.

□ Dedicated Coverage on Topics like: Introduction to Artificial Intelligence and Machine Learning Techniques, Types of Machine Learning, Clustering Algorithms, K-Nearest Neighbor Algorithm, Artificial Neural Network, Deep Learning, and Applications of Machine Learning. □ Pictorial Two-Minute Drill to Summarize the Whole Concept. □ Inclusion of 300 Job Oriented Short Type Questions with Answers for the aspirants to have the Thoroughness, Practice and Multiplicity. □ Around 178 Job Oriented MCQs with their keys. □ Catch Words and Questions on Self-Assessment at Chapter-wise Termination. About the Authors: Dr. Rajesh Kumar Dhanaraj is an Associate Professor in the School of Computing Science and Engineering at Galgotias University, Greater Noida, Uttar Pradesh, India. He holds a Ph.D. degree in Information and Communication Engineering from Anna University Chennai, India. He has published more than 20 authored and edited books on various emerging

technologies and more than 35 articles in various peer-reviewed journals and international conferences and contributed chapters to the books. His research interests include Machine Learning, Cyber-Physical Systems and Wireless Sensor Networks. He is an expert advisory panel member of Texas Instruments Inc. USA. Mr. Soumya Ranjan Jena is currently working as an Assistant Professor in the Department of CSE, School of Computing at Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science & Technology, Avadi, Chennai, Tamil Nadu, India. He has teaching and research experience from various reputed institutions in India like Galgotias University, Greater Noida, Uttar Pradesh, AKS University, Satna, Madhya Pradesh, K L Deemed to be University, Guntur, Andhra Pradesh, GITA (Autonomous), Bhubaneswar, Odisha. He has been awarded M.Tech in Information Technology from Utkal University, Odisha, B.Tech in Computer Science & Engineering from BPUT, Odisha, and Cisco

Certified Network Associate (CCNA) from Central Tool Room and Training Centre (CTTC), Bhubaneswar, Odisha. He has got the immense experience to teach to graduate as well as post-graduate students and author of two books i.e. “Theory of Computation and Application” and “Design and Analysis of Algorithms”. He has published more than 25 research papers on Cloud Computing, IoT in various international journals and conferences which are indexed by Scopus, Web of Science, and also published six patents out of which one is granted in Australia. Mr. Ashok Kumar Yadav is currently working as Dean Academics and Assistant Professor at Rajkiya Engineering College, Azamgarh, Uttar Pradesh. He has worked as an Assistant Professor (on Ad-hoc) in the Department of Computer Science, University of Delhi. He has also worked with Cluster Innovation Center, University of Delhi, New Delhi. He qualified for UGC-JRF. Presently, he is pursuing his Ph.D. in Computer Science from JNU, New Delhi. He has

received M.Tech in Computer Science and Technology from JNU, New Delhi. He has presented and published papers at international conferences and journals on blockchain technology and machine learning. He has delivered various expert lectures on reputed institutes. Ms. Vani Rajasekar completed B. Tech (Information Technology), M. Tech (Information and Cyber warfare) in Department of Information Technology, Kongu Engineering College, Erode, Tamil Nadu, India. She is pursuing her Ph.D. (Information and Communication Engineering) in the area of Biometrics and Network security. Presently she is working as an Assistant professor in the Department of Computer Science and Engineering, Kongu Engineering College Erode, Tamil Nadu, India for the past 5 years. Her areas of interest include Cryptography, Biometrics, Network Security, and Wireless Networks. She has authored around 20 research papers and book chapters published in various international

journals and conferences which were indexed in Scopus, Web of Science, and SCI.

### **Artificial Intelligence and Industry 4.0 -**

About Ella Hassanien 2022-08-14

Artificial Intelligence and Industry 4.0 explores recent advancements in blockchain technology and artificial intelligence (AI) as well as their crucial impacts on realizing Industry 4.0 goals. The book explores AI applications in industry including Internet of Things (IoT) and Industrial Internet of Things (IIoT) technology. Chapters explore how AI (machine learning, smart cities, healthcare, Society 5.0, etc.) have numerous potential applications in the Industry 4.0 era. This book is a useful resource for researchers and graduate students in computer science researching and developing AI and the IIoT. Explores artificial intelligence applications within the industrial manufacturing and communications sectors Presents a wide range of machine learning, computer vision, and digital twin applications across the IoT sector Explores

how deep learning and cognitive computing tools enable processing vast data sets, precise and comprehensive forecast of risks, and delivering recommended actions

### *Best Textbook of Artificial Intelligence - Na*

Vikraman 2020-05-29

This book has been written for the BE/B.Tech students of All University with latest syllabus for ECE, EEE, CSE & IT, Bio Medical Department Students of Artificial Intelligence. It is also useful for B.Sc - Computer Science Students, BCA and all Computer Architecture syllabus students. The basic aim of this book is to provide a basic knowledge in Artificial Intelligence for engineering students of degree, diploma & AMIE courses and a useful reference for these preparing for competitive examinations. All the concepts are explained in a simple, clear and complete manner to achieve progressive learning Two marks questions and answers, Short & Long answer questions are provided at the end of each chapters. This book is divided

into Four Modules. Each chapter is well supported with the necessary illustration practical examples and solved problems.

**Artificial Intelligence and Sustainable Computing** - Manjaree Pandit 2022-11-15

This book presents high-quality research papers presented at 3rd International Conference on Sustainable and Innovative Solutions for Current Challenges in Engineering and Technology (ICSISCET 2021) held at Madhav Institute of Technology & Science (MITS), Gwalior, India, from November 13-14, 2021. The book extensively covers recent research in artificial intelligence (AI) that knits together nature-inspired algorithms, evolutionary computing, fuzzy systems, computational intelligence, machine learning, deep learning, etc., which is very useful while dealing with real problems due to their model-free structure, learning ability, and flexible approach. These techniques mimic human thinking and decision-making abilities to produce systems that are intelligent, efficient,

cost-effective, and fast. The book provides a friendly and informative treatment of the topics which makes this book an ideal reference for both beginners and experienced researchers.

**Handbook of Sustainable Development Through Green Engineering and Technology** - Vikram Bali 2022

Green engineering involves the designing, innovation, and commercialization of products and processes which promote sustainability without eliminating both efficiency and economic viability. This handbook focuses on sustainable development through green engineering and technology. It is intended to address the applications and issues involved in their practical implementation. A new range of renewable-energy technologies, modified to provide green engineering, will be described in this handbook. It will explore all green technologies required to provide green engineering for the future. These include, but are not limited to, green smart buildings, fuel-

efficient transportation, paperless offices, and many more energy-efficient measures. Handbook of Sustainable Development through Green Engineering and Technology acts as a comprehensive reference book to use when identifying development for programs and sustainable initiatives within the current legislative framework. It aims to be of great interest to researchers, faculty members, and students across the globe.

Principles and Methods of Explainable Artificial Intelligence in Healthcare - Albuquerque, Victor Hugo C. de 2022-05-20

Explainable artificial intelligence is proficient in operating and analyzing the unconstrained environment in fields like robotic medicine, robotic treatment, and robotic surgery, which rely on computational vision for analyzing complex situations. Explainable artificial intelligence is a well-structured customizable technology that makes it possible to generate promising unbiased outcomes. The model's

adaptability facilitates the management of heterogeneous healthcare data and the visualization of biological structures through virtual reality. Explainable artificial intelligence has newfound applications in the healthcare industry, such as clinical trial matching, continuous healthcare monitoring, probabilistic evolutions, and evidence-based mechanisms. Principles and Methods of Explainable Artificial Intelligence in Healthcare discusses explainable artificial intelligence and its applications in healthcare, providing a broad overview of state-of-the-art approaches for accurate analysis and diagnosis. The book also encompasses computational vision processing techniques that handle complex data like physiological information, electronic healthcare records, and medical imaging data that assist in earlier prediction. Covering topics such as neural networks and disease detection, this reference work is ideal for industry professionals, practitioners, academicians, researchers,

scholars, instructors, and students.

Deep Learning - Rajiv Chopra

A good book is like a teacher who sits behind the reader and guides him/her accordingly. Deep Learning has been an area of current research. After toiling through the various concepts of Deep Learning, the book slithers around all principles of deep learning. This book highlights in deep the concepts of deep learning so that new projects and researchers can be done. The book serves, both as textbook and as a reference book. Some of the highlights of the book are: Simple Language, Recent Concepts of Machine and Deep Learning explained, MCQ's, Conceptual Short Questions & Answers, Case Studies, Case Tools (like TensorFlow, H2O etc).

**Artificial Intelligence, Machine Learning, and Mental Health in Pandemics** - Shikha Jain 2022-05-06

Artificial Intelligence, Machine Learning, and Mental Health in Pandemics: A Computational Approach provides a comprehensive guide for

public health authorities, researchers and health professionals in psychological health. The book takes a unique approach by exploring how Artificial Intelligence (AI) and Machine Learning (ML) based solutions can assist with monitoring, detection and intervention for mental health at an early stage. Chapters include computational approaches, computational models, machine learning based anxiety and depression detection and artificial intelligence detection of mental health. With the increase in number of natural disasters and the ongoing pandemic, people are experiencing uncertainty, leading to fear, anxiety and depression, hence this is a timely resource on the latest updates in the field. Examines the datasets and algorithms that can be used to detect mental disorders Covers machine learning solutions that can help determine the precautionary measures of psychological health problems Highlights innovative AI solutions and bi-statistics computation that can strengthen day-to-day



medical procedures and decision-making  
**Emerging Technologies Transforming the**

**Future.** - Dr.K.ParishVenkataKumar M.Tech  
(CSE), Ph.D. (CSE), (PDF) 2023-06-01

Dear Readers, We live in a remarkable era of rapid technological advancement, where innovation is reshaping our world at an unprecedented pace. From artificial intelligence to renewable energy, emerging technologies are driving transformative changes across various sectors, promising to revolutionize the way we live, work, and interact. Artificial intelligence (AI) is a prime example of a groundbreaking technology that is already making a significant impact. Machine learning algorithms and deep neural networks are enabling computers to learn, reason, and make decisions like never before. AI is being employed in fields as diverse as healthcare, finance, transportation, and entertainment, revolutionizing processes, improving efficiency, and unlocking new possibilities. The Internet of Things (IoT) is

another revolutionary concept that is steadily permeating our daily lives. By connecting everyday objects to the internet and allowing them to communicate and share data, IoT is creating a seamlessly interconnected environment. Smart homes, autonomous vehicles, and industrial automation are just a few examples of how IoT is reshaping industries and enhancing our quality of life. Advancements in biotechnology and genetic engineering hold the promise of tackling some of the most pressing challenges in healthcare, agriculture, and environmental conservation. Gene editing technologies like CRISPR-Cas9 have the potential to cure genetic diseases, increase crop yields, and preserve endangered species. The ability to manipulate DNA is opening up new frontiers in scientific discovery and paving the way for a more sustainable and healthier future. Renewable energy technologies are revolutionizing the global energy landscape. Solar, wind, and hydroelectric power are

becoming increasingly affordable and efficient, driving the transition towards a clean energy economy. With each passing day, we are moving closer to achieving energy independence, mitigating climate change, and ensuring a sustainable future for generations to come. Blockchain technology, initially popularized by cryptocurrencies like Bitcoin, is now being recognized for its potential in transforming various industries. Its decentralized and transparent nature offers new possibilities for secure and efficient transactions, data management, and supply chain optimization. Blockchain is poised to disrupt finance, healthcare, logistics, and other sectors, driving efficiency, reducing fraud, and fostering trust. These emerging technologies are not just isolated advancements; they are interconnected and synergistic. The convergence of AI, IoT, biotechnology, renewable energy, and blockchain holds the potential for even more profound transformations. Combined, they can

create smart cities with optimized energy consumption, personalized medicine tailored to individual genomes, and sustainable ecosystems that benefit both human society and the planet. However, as we embrace the promises of emerging technologies, we must also acknowledge the challenges they present. Ethical considerations, privacy concerns, and the potential for job displacement are all aspects that require careful consideration. As society navigates these transformative waters, policymakers, researchers, and citizens alike must work together to ensure responsible and equitable deployment of emerging technologies. The future is being shaped by the incredible potential of emerging technologies. As we witness their integration into our daily lives, it is imperative that we approach their development and deployment with responsibility, foresight, and empathy. By doing so, we can harness their power to create a better, more sustainable, and inclusive future for all. Sincerely, Dr K Parish

Venkata Kumar Mr.Prasad Devarasetty  
Dr.Muralidhar Vejendla Dr N Raghvendra Sai  
Dr.K Gurnadha Gupta Dr P Dileep Kumar Reddy  
Internet of Things, Artificial Intelligence and  
Blockchain Technology - R.Lakshmana Kumar  
2021-09-02

This book explores the concepts and techniques of IoT, AI, and blockchain. Also discussed is the possibility of applying blockchain for providing security in various domains. The specific highlight of this book is focused on the application of integrated technologies in enhancing data models, better insights and discovery, intelligent predictions, smarter finance, smart retail, global verification, transparent governance, and innovative audit systems. The book allows both practitioners and researchers to share their opinions and recent research in the convergence of these technologies among academicians and industry people. The contributors present their technical evaluation and compare it with existing

technologies. Theoretical explanation and experimental case studies related to real-time scenarios are also included. This book pertains to IT professionals, researchers and academicians working on fourth revolution technologies.

Machine Learning - Shraban Kumar Apat  
2022-08-05

Machine learning has got one of the most significant points inside advancement associations that are searching for creative approaches to use information advantages to help the business increase another degree of comprehension. Why include machine learning into the mix? With the appropriate machine learning models, associations can constantly anticipate changes in the business with the goal that they are best ready to foresee what's straightaway. As data is constantly added, the machine learning models guarantee that the arrangement is continually refreshed. The worth is direct: If you utilize the most suitable and

continually changing information sources with machine learning, you have the chance to foresee what's to come; Machine learning is a type of AI that empowers a framework to gain from data as opposed to through unequivocal programming. Not with standing, machine learning is certainly not a basic procedure.

Machine Learning and AI Techniques in Interactive Medical Image Analysis - Panigrahi, Lipismita 2022-09-16

The healthcare industry is predominantly moving towards affordable, accessible, and quality health care. All organizations are striving to build communication compatibility among the wide range of devices that have operated independently. Recent developments in electronic devices have boosted the research in the medical imaging field. It incorporates several medical imaging techniques and achieves an important goal for health improvement all over the world. Despite the significant advances in high-resolution medical

instruments, physicians cannot always obtain the full amount of information directly from the equipment outputs, and a large amount of data cannot be easily exploited without a computer. Machine Learning and AI Techniques in Interactive Medical Image Analysis discusses how clinical efficiency can be improved by investigating the different types of intelligent techniques and systems to get more reliable and accurate diagnostic conclusions. This book further introduces segmentation techniques to locate suspicious areas in medical images and increase the segmentation accuracy. Covering topics such as computer-aided detection, intelligent techniques, and machine learning, this premier reference source is a dynamic resource for IT specialists, computer scientists, diagnosticians, imaging specialists, medical professionals, hospital administrators, medical students, medical technicians, librarians, researchers, and academicians.

**Modern Technologies for Big Data**

## **Classification and Clustering** - Hari Seetha 2017-06-19

Presents the latest scholarly research on handling large data sets with conventional data mining and provides information about the new technologies developed for the management of large data. Featuring coverage on a broad range of topics such as text and web data analytics, risk analysis, and opinion mining, this publication is designed for professionals, researchers, and students.

## **Predicting Pregnancy Complications Through Artificial Intelligence and Machine Learning** - Kumar, D. Satish 2023-09-25

Artificial intelligence models are being used to make labor and delivery safer for mothers and newborns. Sensors are exploited to gauge health parameters, and machine learning techniques are investigated to predict the health conditions of patients to assist medical practitioners. This is a critical area of study as maternal and infant health are indispensable for a healthy society.

Predicting Pregnancy Complications Through Artificial Intelligence and Machine Learning considers the recent advances, challenges, and best practices of artificial intelligence and machine learning in relation to pregnancy complications. Covering key topics such as pregnancy complications, wearable sensors, and healthcare technologies, this premier reference source is ideal for nurses, doctors, computer scientists, medical professionals, industry professionals, researchers, academicians, scholars, instructors, and students.

## **Introduction To Machine Learning** - Dr. S. RANGA SWAMY 2021-04-26

Machine learning was built from an engineering perspective, while machine learning was born out of a computer science approach. In the one side the operations may be looked at as two different areas, but they have grown in tandem over the past years and around the same period. Other than the univariate methodology (the conventional way of doing things), there has

been a great rise in non-uniform approaches. , algorithmic and graphical simulations are being used for statistical and quantitative trading in all kinds of markets. Also, the functional applicability of Bayesian approaches has been significantly improved by the development of a variety of estimated inference algorithms such as variational Bayes and expectation propagation. Related to the effect of recent kernels, broader versions have had a huge impact on both algorithms and implementations. This textbook provides a detailed exploration of recent innovations in these fields thus describing the basic elements in these fields and thus offering a concise introduction to these fields. The book is accompanied by a great deal of supplementary content, example problems as well as the full collection of figures included in the book.

*Handbook of Research on AI and Machine Learning Applications in Customer Support and Analytics* - Hossain, Md Shamim 2023-05-02

In the modern data-driven era, artificial intelligence (AI) and machine learning (ML) technologies that allow a computer to mimic intelligent human behavior are essential for organizations to achieve business excellence and assist organizations in extracting useful information from raw data. AI and ML have existed for decades, but in the age of big data, this sort of analysis is in higher demand than ever, especially for customer support and analytics. The Handbook of Research on AI and Machine Learning Applications in Customer Support and Analytics investigates the applications of AI and ML and how they can be implemented to enhance customer support and analytics at various levels of organizations. This book is ideal for marketing professionals, managers, business owners, researchers, practitioners, academicians, instructors, university libraries, and students, and covers topics such as artificial intelligence, machine learning, supervised learning, deep learning,

customer sentiment analysis, data mining, neural networks, and business analytics.

Machine Learning for Healthcare - Rashmi Agrawal 2020-12-08

Machine Learning for Healthcare: Handling and Managing Data provides in-depth information about handling and managing healthcare data through machine learning methods. This book expresses the long-standing challenges in healthcare informatics and provides rational explanations of how to deal with them. Machine Learning for Healthcare: Handling and Managing Data provides techniques on how to apply machine learning within your organization and evaluate the efficacy, suitability, and efficiency of machine learning applications. These are illustrated in a case study which examines how chronic disease is being redefined through patient-led data learning and the Internet of Things. This text offers a guided tour of machine learning algorithms, architecture design, and applications of learning in

healthcare. Readers will discover the ethical implications of machine learning in healthcare and the future of machine learning in population and patient health optimization. This book can also help assist in the creation of a machine learning model, performance evaluation, and the operationalization of its outcomes within organizations. It may appeal to computer science/information technology professionals and researchers working in the area of machine learning, and is especially applicable to the healthcare sector. The features of this book include: A unique and complete focus on applications of machine learning in the healthcare sector. An examination of how data analysis can be done using healthcare data and bioinformatics. An investigation of how healthcare companies can leverage the tapestry of big data to discover new business values. An exploration of the concepts of machine learning, along with recent research developments in healthcare sectors.

**9789386173423** - Rajiv Chopra

This book attempts to provide a unified overview of the broad field of Machine Learning and its Practical implementation. This book is a survey of the state of art. It breaks this massive subject into comprehensible parts piece by piece. The objective is to focus on basic principles of machine learning with some leading edge topics. This book addresses a full spectrum of machine learning programming. The emphasis is to solve lot many programming examples using step-by step practical implementation of machine learning algorithms. To facilitate easy understanding of machine learning, this book has been written in such a simple style that a student thinks as if a teacher is sitting behind him and guiding him. This book is written as per the new syllabus of different Universities of India. It also Cover the syllabus of B.Tech.(CSE/IT), MCA, BCA of Delhi University, Delhi. GGSIPU, MDU, RGTU, Nagpur University, UTU, APJ Abdul Kalam University so on. The

book is intended for both academic and professional audience.

**Artificial Intelligence Books For Beginners** -

Dr Bhawana Pillai, Prof. Priyank Nayak, Prof Vijendra Palash, Prof Priyanka Parihar  
Artificial intelligence is a field of computer science that focuses on the development of intelligent machines capable of performing tasks that would typically require human intelligence. Remember that AI is a vast and evolving field, and this is just a brief introduction to some key concepts. There are numerous resources available, including online and This books, that can provide more in-depth knowledge for beginners interested in artificial intelligence.

**Artificial Intelligence and Machine Learning in 2D/3D Medical Image Processing** - Rohit

Raja 2020-12-22

Digital images have several benefits, such as faster and inexpensive processing cost, easy storage and communication, immediate quality assessment, multiple copying while preserving



quality, swift and economical reproduction, and adaptable manipulation. Digital medical images play a vital role in everyday life. Medical imaging is the process of producing visible images of inner structures of the body for scientific and medical study and treatment as well as a view of the function of interior tissues. This process pursues disorder identification and management. Medical imaging in 2D and 3D includes many techniques and operations such as image gaining, storage, presentation, and communication. The 2D and 3D images can be processed in multiple dimensions. Depending on the requirement of a specific problem, one must identify various features of 2D or 3D images while applying suitable algorithms. These image processing techniques began in the 1960s and were used in such fields as space, clinical purposes, the arts, and television image improvement. In the 1970s, with the development of computer systems, the cost of image processing was reduced and processes

became faster. In the 2000s, image processing became quicker, inexpensive, and simpler. In the 2020s, image processing has become a more accurate, more efficient, and self-learning technology. This book highlights the framework of the robust and novel methods for medical image processing techniques in 2D and 3D. The chapters explore existing and emerging image challenges and opportunities in the medical field using various medical image processing techniques. The book discusses real-time applications for artificial intelligence and machine learning in medical image processing. The authors also discuss implementation strategies and future research directions for the design and application requirements of these systems. This book will benefit researchers in the medical image processing field as well as those looking to promote the mutual understanding of researchers within different disciplines that incorporate AI and machine learning. FEATURES Highlights the framework

of robust and novel methods for medical image processing techniques Discusses implementation strategies and future research directions for the design and application requirements of medical imaging Examines real-time application needs Explores existing and emerging image challenges and opportunities in the medical field  
*Using Computational Intelligence for the Dark Web and Illicit Behavior Detection* - Rawat, Romil 2022-05-06

The Dark Web is a known hub that hosts myriad illegal activities behind the veil of anonymity for its users. For years now, law enforcement has been struggling to track these illicit activities and put them to an end. However, the depth and anonymity of the Dark Web has made these efforts difficult, and as cyber criminals have more advanced technologies available to them, the struggle appears to only have the potential to worsen. Law enforcement and government organizations also have emerging technologies on their side, however. It is essential for these

organizations to stay up to date on these emerging technologies, such as computational intelligence, in order to put a stop to the illicit activities and behaviors presented in the Dark Web. *Using Computational Intelligence for the Dark Web and Illicit Behavior Detection* presents the emerging technologies and applications of computational intelligence for the law enforcement of the Dark Web. It features analysis into cybercrime data, examples of the application of computational intelligence in the Dark Web, and provides future opportunities for growth in this field. Covering topics such as cyber threat detection, crime prediction, and keyword extraction, this premier reference source is an essential resource for government organizations, law enforcement agencies, non-profit organizations, politicians, computer scientists, researchers, students, and academicians.

*Federated Learning* - Qiang Yang 2019-12-19  
How is it possible to allow multiple data owners

to collaboratively train and use a shared prediction model while keeping all the local training data private? Traditional machine learning approaches need to combine all data at one location, typically a data center, which may very well violate the laws on user privacy and data confidentiality. Today, many parts of the world demand that technology companies treat user data carefully according to user-privacy laws. The European Union's General Data Protection Regulation (GDPR) is a prime example. In this book, we describe how federated machine learning addresses this problem with novel solutions combining distributed machine learning, cryptography and security, and incentive mechanism design based on economic principles and game theory. We explain different types of privacy-preserving machine learning solutions and their technological backgrounds, and highlight some representative practical use cases. We show how federated learning can become the foundation of

next-generation machine learning that caters to technological and societal needs for responsible AI development and application.

### **Machine Learning: A Probabilistic**

**Perspective** - Sweta 2023-03-21

Machine learning (ML) is a subfield of AI that allows computers to "learn" from the data and improve over time without being explicitly programmed. Algorithms that use machine learning may analyze data for patterns and use that knowledge to generate predictions. To sum up, machine learning algorithms & models acquire knowledge from previous data. Traditional programming entails a computer engineer crafting a set of rules that tell a computer how to take raw data and produce a certain result. Most commands follow an IF-THEN format: the computer acts only if the specified condition holds. The opposite is true with machine learning, which is the automated process that allows computers to solve issues with little or no human intervention and to

respond following what they have learned from previous experiences. The terms "artificial intelligence" & "machine learning" are often used interchangeably, although they refer to two distinct processes. Machine learning is a branch of artificial intelligence that allows intelligent systems to autonomously learn new things from data, while artificial intelligence as a whole refers to robots that can make choices, acquire new skills, and solve problems. You may train machine learning algorithms to conduct computations, process data, and recognize patterns without explicitly programming them to do so by providing them with samples of labeled data.

AI APPLICATIONS - Dr. Ram Prasad Reddy Sadi  
2022-05-02

AI APPLICATIONS WRITTEN BY Dr. Ram Prasad Reddy Sadi, Dr. Yeligeri Raju, Mr. G. Saravanan, Dr. G Rajesh Chandra

Deep Learning through Sparse and Low-Rank Modeling - Zhangyang Wang 2019-04-11

Deep Learning through Sparse Representation and Low-Rank Modeling bridges classical sparse and low rank models—those that emphasize problem-specific Interpretability—with recent deep network models that have enabled a larger learning capacity and better utilization of Big Data. It shows how the toolkit of deep learning is closely tied with the sparse/low rank methods and algorithms, providing a rich variety of theoretical and analytic tools to guide the design and interpretation of deep learning models. The development of the theory and models is supported by a wide variety of applications in computer vision, machine learning, signal processing, and data mining. This book will be highly useful for researchers, graduate students and practitioners working in the fields of computer vision, machine learning, signal processing, optimization and statistics. Combines classical sparse and low-rank models and algorithms with the latest advances in deep learning networks Shows how the structure and

algorithms of sparse and low-rank methods improves the performance and interpretability of Deep Learning models Provides tactics on how to build and apply customized deep learning models for various applications

**Industry 4.0, AI, and Data Science** - Vikram Bali 2021

"The aim of this book is to provide insight into Data Science and Artificial Learning Techniques based on Industry 4.0, conveys how Machine Learning & Data Science are becoming an essential part of industrial and academic research. Varying from healthcare to social networking and everywhere hybrid models for Data Science, AI, and Machine Learning are being used. The book describes different theoretical and practical aspects and highlights how new systems are being developed. Along with focusing on the research trends, challenges and future of AI in Data Science, the book explores the potential for integration of advanced AI algorithms, addresses the

challenges of Data Science for Industry 4.0, covers different security issues, includes qualitative and quantitative research, and offers case studies with working models. This book also provides an overview of AI and Data Science algorithms for readers who do not have a strong mathematical background. Undergraduates, postgraduates, academicians, researchers, and industry professionals will benefit from this book and use it as a guide"--

*High Performance Vision Intelligence* - Aparajita Nanda 2020-09-26

This book focuses on the challenges and the recent findings in vision intelligence incorporating high performance computing applications. The contents provide in-depth discussions on a range of emerging multidisciplinary topics like computer vision, image processing, artificial intelligence, machine learning, cloud computing, IoT, and big data. The book also includes illustrations of algorithms, architecture, applications, software

systems, and data analytics within the scope of the discussed topics. This book will help

students, researchers, and technology professionals discover latest trends in the fields of computer vision and artificial intelligence.