

## Applications Of Artificial Intelligence For Decision Making

This volume contains the 5 invited papers and 72 selected papers that were presented at the Fifth International Conference on Industrial and Engineering Applications of Artificial Intelligence. This is the first IEA/AIE conference to take place outside the USA: more than 120 papers were received from 23 countries, clearly indicating the international character of the conference series. Each paper was reviewed by at least three referees. The papers are grouped into parts on: CAM, reasoning and modelling, pattern recognition, software engineering and AI/ES, CAD, vision, verification and validation, neural networks, machine learning, fuzzy logic and control, robotics, design and architecture, configuration, finance, knowledge-based systems, knowledge representation, knowledge acquisition and language processing, reasoning and decision support, intelligent interfaces/DB and tutoring, fault diagnosis, planning and scheduling, and data/sensor fusion.

This book offers a practical guide to artificial intelligence (AI) techniques that are used in business. The book does not focus on AI models and algorithms, but instead provides an overview of the most popular and frequently used models in business. This allows the book to easily explain AI paradigms and concepts for business students and executives. Artificial Intelligence for Business is divided into six chapters. Chapter 1 begins with a brief introduction to AI and describes its relationship with machine learning, data science and big data analytics. Chapter 2 presents core machine learning workflow and the most effective machine learning techniques. Chapter 3 deals with deep learning, a popular technique for developing AI applications. Chapter 4 introduces recommendation engines for business and covers how to use them to be more competitive. Chapter 5 features natural language processing (NLP) for sentiment analysis focused on emotions. With the help of sentiment analysis, businesses can understand their customers better to improve their experience, which will help the businesses change their market position. Chapter 6 states potential business prospects of AI and the benefits that companies can realize by implementing AI in their processes.

Explore the theory and practical applications of artificial intelligence (AI) and machine learning in healthcare. This book offers a guided tour of machine learning algorithms, architecture design, and applications of learning in healthcare and big data challenges. You'll discover the ethical implications of healthcare data analytics and the future of AI in population and patient health optimization. You'll also create a machine learning model, evaluate performance and operationalize its outcomes within your organization. Machine Learning and AI for Healthcare provides techniques on how to apply machine learning within your organization and evaluate the efficacy, suitability, and efficiency of AI applications. These are illustrated through leading case studies, including how chronic disease is being redefined through patient-led data learning and the Internet of Things. What You'll Learn Gain a deeper understanding of key machine learning algorithms and their use and implementation within wider healthcare Implement machine learning systems, such as speech recognition and enhanced deep learning/AI Select learning methods/algorithms and tuning for use in healthcare Recognize and prepare for the future of artificial intelligence in healthcare through best practices, feedback loops and intelligent agents Who This Book Is For Health care professionals interested in how machine learning can be used to develop health intelligence – with the aim of improving patient health, population health and facilitating significant care-payer cost savings.

"This book provides an introduction to different types of decision theory techniques, including MDPs, POMDPs, Influence Diagrams, and Reinforcement Learning, and illustrates their application in artificial intelligence"--

This book gathers the refereed proceedings of the Artificial Intelligence and Industrial Applications (A2IA2020), the first installment of an annual international conference organized by the ENSAM-Meknes at Moulay Ismail University, Morocco. The 30 papers presented here were carefully reviewed and selected from 141 submissions by an international scientific committee. They address various aspects of artificial intelligence such as smart manufacturing, smart maintenance, smart supply chain management, supervised learning, unsupervised learning, reinforcement learning, graph-based and semi-supervised learning, neural networks, deep learning, planning and optimization, and other AI applications. The book is intended for AI experts, offering them a valuable overview of the status quo and a global outlook for the future, with many new and innovative ideas and recent important developments in AI applications, both of a foundational and practical nature. It will also appeal to non-experts who are curious about this timely and important subject.

This volume is based on the research papers presented in the 4th Computer Science On-line Conference. The volume Artificial Intelligence Perspectives and Applications presents new approaches and methods to real-world problems, and in particular, exploratory research that describes novel approaches in the field of artificial intelligence. Particular emphasis is laid on modern trends in selected fields of interest. New algorithms or methods in a variety of fields are also presented. The Computer Science On-line Conference (CSOC 2015) is intended to provide an international forum for discussions on the latest high-quality research results in all areas related to Computer Science. The addressed topics are the theoretical aspects and applications of Computer Science, Artificial Intelligences, Cybernetics, Automation Control Theory and Software Engineering.

This book presents a unique, understandable view of machine learning using many practical examples and access to free professional software and open source code. The user-friendly software can immediately be used to apply everything you learn in the book without the need for programming. After an introduction to machine learning and artificial intelligence, the chapters in Part II present deeper explanations of machine learning algorithms, performance evaluation of machine learning models, and how to consider data in machine learning environments. In Part III the author explains automatic speech recognition, and in Part IV biometrics recognition, face- and speaker-recognition. By Part V the author can then explain machine learning by example, he offers cases from real-world applications, problems, and techniques, such as anomaly detection and root cause analyses, business process improvement, detecting and predicting diseases, recommendation AI, several engineering applications, predictive maintenance, automatically classifying datasets, dimensionality reduction, and image recognition. Finally, in Part VI he offers a detailed explanation of the AI-TOOLKIT, software he developed that allows the reader to test and study the examples in the book and the application of machine learning in professional environments. The author introduces core machine learning concepts and supports these with practical examples of their use, so professionals will appreciate his approach and use the book for self-study. It will also be useful as a supplementary resource for advanced undergraduate and graduate courses on machine learning and artificial intelligence.

Enhanced, more reliable, and better understood than in the past, artificial intelligence (AI) systems can make providing healthcare more accurate, affordable, accessible, consistent, and efficient. However, AI technologies have not been as well integrated into medicine as predicted. In order to succeed, medical and computational scientists must develop hybrid systems that can effectively and efficiently integrate the experience of medical care professionals with capabilities of AI systems. After providing a general overview of artificial intelligence concepts, tools, and techniques, Medical Applications of Artificial Intelligence reviews the research, focusing on state-of-the-art projects in the field. The book captures the breadth and depth of the medical applications of artificial intelligence, exploring new developments and persistent challenges.

Artificial Intelligence for Future Generation Robotics offers a vision for potential future robotics applications for AI technologies. Each chapter includes theory and mathematics to stimulate novel research directions based on the state-of-the-art in AI and smart robotics. Organized by application into ten chapters, this book offers a practical tool for researchers and engineers looking for new avenues and use-cases that combine AI with smart robotics. As we witness exponential growth in automation and the rapid advancement of underpinning technologies, such as ubiquitous computing, sensing, intelligent data processing, mobile computing

and context aware applications, this book is an ideal resource for future innovation. Brings AI and smart robotics into imaginative, technically-informed dialogue Integrates fundamentals with real-world applications Presents potential applications for AI in smart robotics by use-case Gives detailed theory and mathematical calculations for each application Stimulates new thinking and research in applying AI to robotics

The aim of the book is to provide latest research findings, innovative research results, methods and development techniques from both theoretical and practical perspectives related to the emerging areas of Web Computing, Intelligent Systems and Internet Computing. As the Web has become a major source of information, techniques and methodologies that extract quality information are of paramount importance for many Web and Internet applications. Data mining and knowledge discovery play key roles in many of today's prominent Web applications such as e-commerce and computer security. Moreover, the outcome of Web services delivers a new platform for enabling service-oriented systems. The emergence of large scale distributed computing paradigms, such as Cloud Computing and Mobile Computing Systems, has opened many opportunities for collaboration services, which are at the core of any Information System. Artificial Intelligence (AI) is an area of computer science that build intelligent systems and algorithms that work and react like humans. The AI techniques and computational intelligence are powerful tools for learning, adaptation, reasoning and planning. They have the potential to become enabling technologies for the future intelligent networks. Recent research in the field of intelligent systems, robotics, neuroscience, artificial intelligence and cognitive sciences are very important for the future development and innovation of Web and Internet applications.

"The ever expanding abundance of information and computing power enables researchers and users to tackle highly interesting issues for the first time, such as applications providing personalized access and interactivity to multimodal information based on user preferences and semantic concepts or human-machine interface systems utilizing information on the affective state of the user. The purpose of this book is to provide insights on how today's computer engineers can implement AI in real world applications. Overall, the field of artificial intelligence is extremely broad. In essence, AI has found applications, in one way or another, in every aspect of computing and in most aspects of modern life. Consequently, it is not possible to provide a complete review of the field in the framework of a single book, unless if the review is broad rather than deep. In this book we have chosen to present selected current and emerging practical applications of AI, thus allowing for a more detailed presentation of topics. The book is organized in four parts; General Purpose Applications of AI; Intelligent Human-Computer Interaction; Intelligent Applications in Signal Processing and eHealth; and Real world AI applications in Computer Engineering."

The proceedings of the tenth annual CAIA include technical sessions of a technology-related nature (scheduling, neural nets and machine learning, natural language, explanation, expert systems, enabling technology, and diagnosis) as well as those with a focus on applications (CAD/VLSI, case-based app

This book takes a pragmatic and hype-free approach to explaining artificial intelligence and how it can be utilised by businesses today. At the core of the book is a framework, developed by the author, which describes in non-technical language the eight core capabilities of Artificial Intelligence (AI). Each of these capabilities, ranging from image recognition, through natural language processing, to prediction, is explained using real-life examples and how they can be applied in a business environment. It will include interviews with executives who have successfully implemented AI as well as CEOs from AI vendors and consultancies. AI is one of the most talked about technologies in business today. It has the ability to deliver step-change benefits to organisations and enables forward-thinking CEOs to rethink their business models or create completely new businesses. But most of the real value of AI is hidden behind marketing hyperbole, confusing terminology, inflated expectations and dire warnings of 'robot overlords'. Any business executive that wants to know how to exploit AI in their business today is left confused and frustrated. As an advisor in Artificial Intelligence, Andrew Burgess regularly comes face-to-face with business executives who are struggling to cut through the hype that surrounds AI. The knowledge and experience he has gained in advising them, as well as working as a strategic advisor to AI vendors and consultancies, has provided him with the skills to help business executives understand what AI is and how they can exploit its many benefits. Through the distilled knowledge included in this book business leaders will be able to take full advantage of this most disruptive of technologies and create substantial competitive advantage for their companies.

1950 stellte Alan Turing erstmals die Frage, ob Maschinen denken können. Seitdem wurden im Bereich der künstlichen Intelligenz (KI) gewaltige Fortschritte erzielt. Heute verändert KI Gesellschaft und Wirtschaft. KI ermöglicht Produktivitätssteigerungen, kann die Lebensqualität erhöhen und sogar bei der Bewältigung globaler Herausforderungen wie Klimawandel, Ressourcenknappheit und Gesundheitskrisen helfen.

Artificial intelligence (AI) is once again considered a new, hot topic. Today, a great deal of focus is on machine learning, artificial neural networks and deep learning, but AI is so much more. AI includes a vast amount of aspects and rich possibilities for applications...

This book constitutes the proceedings of the 8th Hellenic Conference on Artificial Intelligence, SETN 2014, held in Ioannina, Greece, in May 2014. There are 34 regular papers out of 60 submissions, in addition 5 submissions were accepted as short papers and 15 papers were accepted for four special sessions. They deal with emergent topics of artificial intelligence and come from the SETN main conference as well as from the following special sessions on action languages: theory and practice; computational intelligence techniques for bio signal Analysis and evaluation; game artificial intelligence; multimodal recommendation systems and their applications to tourism.

Artificial Intelligence and Innovations (AIAI) will interest researchers, IT professionals and consultants by examining technologies and applications of demonstrable value. The conference focused on profitable intelligent systems and technologies. AIAI focuses on real world applications; therefore authors should highlight the benefits of AI technology for industry and services. Novel approaches solving business and industrial problems, using AI, will emerge from this conference.

This book constitutes the refereed proceedings of the 5th Hellenic Conference on Artificial Intelligence, SETN 2008, held at Syros, Greece in October 2008. The 27 revised full papers together with 17 revised short papers were carefully reviewed and selected from 76 submissions. The papers address any area of artificial intelligence; particular fields of interest include: Adaptive Systems, AI and Creativity, AI architectures, Artificial Life, Autonomous Systems, Data Mining and Knowledge Discovery, Hybrid Intelligent Systems & Methods, Intelligent Agents, Multi-agent Systems, Intelligent Distributed Systems, Intelligent Information Retrieval, Intelligent/Natural Interactivity, Intelligent Virtual Environments,

Knowledge Representation and Reasoning, Logic Programming, Knowledge-Based Systems, Machine Learning, Neural Nets, Genetic Algorithms, Natural Language Processing, Planning and Scheduling, Problem Solving, Constraint Satisfaction, Robotics, Machine Vision, Machine Sensing.

This book covers a wide range of topics on the role of Artificial Intelligence, Machine Learning, and Big Data for healthcare applications and deals with the ethical issues and concerns associated with it. This book explores the applications in different areas of healthcare and highlights the current research. "Big Data and Artificial Intelligence for Healthcare Applications" covers healthcare big data analytics, mobile health and personalized medicine, clinical trial data management and presents how Artificial Intelligence can be used for early disease diagnosis prediction and prognosis. It also offers some case studies that describes the application of Artificial Intelligence and Machine Learning in healthcare. Researchers, healthcare professionals, data scientists, systems engineers, students, programmers, clinicians, and policymakers will find this book of interest.

This text presents state-of-the-art applications of AI for engineering problems and contains the edited proceedings of the tenth International Conference on Applications of Artificial Intelligence in Engineering, held in Udine, Italy during July 1995.

This book constitutes the thoroughly refereed proceedings of the 33rd International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2020, held in Kitakyushu, Japan, in September 2020. The 62 full papers and 17 short papers presented were carefully reviewed and selected from 119 submissions. The IEA/AIE 2020 conference will continue the tradition of emphasizing on applications of applied intelligent systems to solve real-life problems in all areas. These areas include are language processing; robotics and drones; knowledge based systems; innovative applications of intelligent systems; industrial applications; networking applications; social network analysis; financial applications and blockchain; medical and health-related applications; anomaly detection and automated diagnosis; decision-support and agent-based systems; multimedia applications; machine learning; data management and data clustering; pattern mining; system control, classification, and fault diagnosis.

Artificial Intelligence and Industrial Applications Artificial Intelligence Techniques for Cyber-Physical, Digital Twin Systems and Engineering Applications Springer Nature

Artificial Intelligence Medicine: Technical Basis and Clinical Applications presents a comprehensive overview of the field, ranging from its history and technical foundations, to specific clinical applications and finally to prospects. Artificial Intelligence (AI) is expanding across all domains at a breakneck speed. Medicine, with the availability of large multidimensional datasets, lends itself to strong potential advancement with the appropriate harnessing of AI. The integration of AI can occur throughout the continuum of medicine: from basic laboratory discovery to clinical application and healthcare delivery. Integrating AI within medicine has been met with both excitement and scepticism. By understanding how AI works, and developing an appreciation for both limitations and strengths, clinicians can harness its computational power to streamline workflow and improve patient care. It also provides the opportunity to improve upon research methodologies beyond what is currently available using traditional statistical approaches. On the other hand, computers scientists and data analysts can provide solutions, but often lack easy access to clinical insight that may help focus their efforts. This book provides vital background knowledge to help bring these two groups together, and to engage in more streamlined dialogue to yield productive collaborative solutions in the field of medicine. Provides history and overview of artificial intelligence, as narrated by pioneers in the field Discusses broad and deep background and updates on recent advances in both medicine and artificial intelligence that enabled the application of artificial intelligence Addresses the ever-expanding application of this novel technology and discusses some of the unique challenges associated with such an approach

Delve into the world of real-world financial applications using deep learning, artificial intelligence, and production-grade data feeds and technology with Python Key Features Understand how to obtain financial data via Quandl or internal systems Automate commercial banking using artificial intelligence and Python programs Implement various artificial intelligence models to make personal banking easy Book Description Remodeling your outlook on banking begins with keeping up to date with the latest and most effective approaches, such as artificial intelligence (AI). Hands-On Artificial Intelligence for Banking is a practical guide that will help you advance in your career in the banking domain. The book will demonstrate AI implementation to make your banking services smoother, more cost-efficient, and accessible to clients, focusing on both the client- and server-side uses of AI. You'll begin by understanding the importance of artificial intelligence, while also gaining insights into the recent AI revolution in the banking industry. Next, you'll get hands-on machine learning experience, exploring how to use time series analysis and reinforcement learning to automate client procurements and banking and finance decisions. After this, you'll progress to learning about mechanizing capital market decisions, using automated portfolio management systems and predicting the future of investment banking. In addition to this, you'll explore concepts such as building personal wealth advisors and mass customization of client lifetime wealth. Finally, you'll get to grips with some real-world AI considerations in the field of banking. By the end of this book, you'll be equipped with the skills you need to navigate the finance domain by leveraging the power of AI. What you will learn Automate commercial bank pricing with reinforcement learning Perform technical analysis using convolutional layers in Keras Use natural language processing (NLP) for predicting market responses and visualizing them using graph databases Deploy a robot advisor to manage your personal finances via Open Bank API Sense market needs using sentiment analysis for algorithmic marketing Explore AI adoption in banking using practical examples Understand how to obtain financial data from commercial, open, and internal sources Who this book is for This is one of the most useful artificial intelligence books for machine learning engineers, data engineers, and data scientists working in the finance industry who are looking to implement AI in their business applications. The book will also help entrepreneurs, venture

capitalists, investment bankers, and wealth managers who want to understand the importance of AI in finance and banking and how it can help them solve different problems related to these domains. Prior experience in the financial markets or banking domain, and working knowledge of the Python programming language are a must.

This book gathers selected papers from Artificial Intelligence and Industrial Applications (A2IA'2020), the first installment of an annual international conference organized by ENSAM-Meknes at Moulay Ismail University, Morocco. The 29 papers presented here were carefully reviewed and selected from 141 submissions by an international scientific committee. They address various aspects of artificial intelligence such as digital twin, multiagent systems, deep learning, image processing and analysis, control, prediction, modeling, optimization and design, as well as AI applications in industry, health, energy, agriculture, and education. The book is intended for AI experts, offering them a valuable overview and global outlook for the future, and highlights a wealth of innovative ideas and recent, important advances in AI applications, both of a foundational and practical nature. It will also appeal to non-experts who are curious about this timely and important subject.

Applications of Artificial Intelligence in Process Systems Engineering offers a broad perspective on the issues related to artificial intelligence technologies and their applications in chemical and process engineering. The book comprehensively introduces the methodology and applications of AI technologies in process systems engineering, making it an indispensable reference for researchers and students. As chemical processes and systems are usually non-linear and complex, thus making it challenging to apply AI methods and technologies, this book is an ideal resource on emerging areas such as cloud computing, big data, the industrial Internet of Things and deep learning. With process systems engineering's potential to become one of the driving forces for the development of AI technologies, this book covers all the right bases. Explains the concept of machine learning, deep learning and state-of-the-art intelligent algorithms Discusses AI-based applications in process modeling and simulation, process integration and optimization, process control, and fault detection and diagnosis Gives direction to future development trends of AI technologies in chemical and process engineering

Make your searches more responsive and smarter by applying Artificial Intelligence to it Key Features Enter the world of Artificial Intelligence with solid concepts and real-world use cases Make your applications intelligent using AI in your day-to-day apps and become a smart developer Design and implement artificial intelligence in searches Book Description With the emergence of big data and modern technologies, AI has acquired a lot of relevance in many domains. The increase in demand for automation has generated many applications for AI in fields such as robotics, predictive analytics, finance, and more. In this book, you will understand what artificial intelligence is. It explains in detail basic search methods: Depth-First Search (DFS), Breadth-First Search (BFS), and A\* Search, which can be used to make intelligent decisions when the initial state, end state, and possible actions are known. Random solutions or greedy solutions can be found for such problems. But these are not optimal in either space or time and efficient approaches in time and space will be explored. We will also understand how to formulate a problem, which involves looking at it and identifying its initial state, goal state, and the actions that are possible in each state. We also need to understand the data structures involved while implementing these search algorithms as they form the basis of search exploration. Finally, we will look into what a heuristic is as this decides the quality of one sub-solution over another and helps you decide which step to take. What you will learn Understand the instances where searches can be used Understand the algorithms that can be used to make decisions more intelligent Formulate a problem by specifying its initial state, goal state, and actions Translate the concepts of the selected search algorithm into code Compare how basic search algorithms will perform for the application Implement algorithmic programming using code examples Who this book is for This book is for developers who are keen to get started with Artificial Intelligence and develop practical AI-based applications. Those developers who want to upgrade their normal applications to smart and intelligent versions will find this book useful. A basic knowledge and understanding of Python are assumed.

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.

This book gathers high-quality papers presented at the International Conference on Artificial Intelligence and Applications (ICAIA 2020), held at Maharaja Surajmal Institute of Technology, New Delhi, India, on 6–7 February 2020. The book covers areas such as artificial neural networks, fuzzy systems, computational optimization technologies and machine learning.

Book Description: We have the data! Too much data! Decision-making requires that data be filtered and refined to provide information. Adding context to the content produces actionable knowledge. Unfortunately, current techniques strip away the uncertainty associated with the raw data. This book provides a decision-centered approach for coping with uncertainty that combines what people do best with what computers do best. Algorithms "plug into"the knowledge base from a single import/export interface, facilitating multi-strategy reasoning. Triage filters the data, extraction of hedge words capture uncertainty, an executable knowledge base provides content in context, data fusion propagates uncertainty, data analytics discover patterns, and plan optimization tools move the decision-maker from "what's going on" to "what to do." Displays present actionable knowledge with associated uncertainties explicitly shown. Fifteen applications are shown ranging from longevity prediction, to a retail problem solver, to intelligence community applications, to starship cybernetics. We wrote the book to provide the practitioner with compelling ideas for orchestrating artificial intelligence, statistical, and mathematical algorithms to produce fully integrated decision support systems. Novel techniques of particular interest are: a knowledge representation that provides a unifying framework for multi-strategy reasoning and simulation, a robust treatment of uncertainty, monitor-assess-plan-execute decision loops for routine and quick-reaction decisions, eight techniques for automated discovery of unknown unknowns, level 4 (process refinement) data fusion, and a self-aware knowledge base that "knows what it knows."

This is primarily a business book that discusses the research and associated practical application of artificial intelligence (AI) and machine learning (ML) in order to achieve business optimization (BO). AI comprises a wide range of technologies, databases, algorithms, and devices. This book aims for a holistic approach to AI by focusing on developing business strategies that will not only automate but also optimize business functions, processes, and people's behaviors. Artificial Intelligence for Business Optimization: Research and Applications explores AI and ML from a business viewpoint with the key purpose of enhancing customer value. It applies research methods and fundamentals from a practitioner's viewpoint and incorporates discussions around risks and changes associated with the utilization of AI in business. Furthermore, governance risks, privacy, and security are also addressed in this book to ensure compliance with AI/ML applications. Readers should find direct and practical applications of the discussions in this book quite useful in their work environment. Researchers will find many ideas to further explore the applications of AI to business.

This book discusses the recent research trends and upcoming applications based on artificial intelligence. It includes best selected research papers presented at the International Conference on Research and Applications in Artificial Intelligence (RAAI 2020), organized by Department of Information Technology, RCC Institute of Information technology, Kolkata, West Bengal, India during 19 – 20, December, 2020. Many versatile fields of artificial intelligence are categorically addressed through different chapters of this book. The book is a valuable resource and reference for researchers, instructors, students, scientists, engineers, managers and industry practitioners in these important areas.

This book explains how AI and Machine Learning can be applied to help businesses solve problems, support critical thinking and ultimately create customer value and increase profit. By considering business strategies, business process modeling, quality assurance, cybersecurity, governance and big data and focusing on functions, processes, and people's behaviors it helps businesses take a truly holistic approach to business optimization. It contains practical examples that make it easy to understand the concepts and apply them. It is written for practitioners (consultants, senior executives, decision-makers) dealing with real-life business problems on a daily basis, who are keen to develop systematic strategies for the application of AI/ML/BD technologies to business automation and optimization, as well as researchers who want to explore the industrial applications of AI and higher-level students.

The purpose of this book is to provide an overview of AI research, ranging from basic work to interfaces and applications, with as much emphasis on results as on current issues. It is aimed at an audience of master students and Ph.D. students, and can be of interest as well for researchers and engineers who want to know more about AI. The book is split into three volumes: - the first volume brings together twenty-three chapters dealing with the foundations of knowledge representation and the formalization of reasoning and learning (Volume 1. Knowledge representation, reasoning and learning) - the second volume offers a view of AI, in fourteen chapters, from the side of the algorithms (Volume 2. AI Algorithms) - the third volume, composed of sixteen chapters, describes the main interfaces and applications of AI (Volume 3. Interfaces and applications of AI). This third volume is dedicated to the interfaces of AI with various fields, with which strong links exist either at the methodological or at the applicative levels. The foreword of this volume reminds us that AI was born for a large part from cybernetics. Chapters are devoted to disciplines that are historically sisters of AI: natural language processing, pattern recognition and computer vision, and robotics. Also close and complementary to AI due to their direct links with information are databases, the semantic web, information retrieval and human-computer interaction. All these disciplines are privileged places for applications of AI methods. This is also the case for bioinformatics, biological modeling and computational neurosciences. The developments of AI have also led to a dialogue with theoretical computer science in particular regarding computability and complexity. Besides, AI research and findings have renewed philosophical and epistemological questions, while their cognitive validity raises questions to psychology. The volume also discusses some of the interactions between science and artistic creation in literature and in music. Lastly, an epilogue concludes the three volumes of this Guided Tour of AI Research by providing an overview of what has been achieved by AI, emphasizing AI as a science, and not just as an innovative technology, and trying to dispel some misunderstandings.

Artificial Intelligence, the Revolutionary Transformation that no one can escape DESCRIPTION The book 'Artificial Intelligence for All' is a snapshot of AI applications in different industries, society, and everyday life. The book is written considering possibilities AI can bring in the Indian context and considering Indian industries and economy at the center stage. The book starts with describing the race for the supremacy of different countries in the field of Artificial Intelligence that has already taken a great momentum and how AI has managed to influence even mainstream politics and the world leaders. In the subsequent chapters, the book brings in AI applications primarily in the Banking and Finance sectors like Financial Crime detection using AI, Credit Risk Assessment, AI-powered conversational banking, Predictive Analytics, and recommendations in Banking and Finance. In few of the chapters, it goes deep into Machine Learning, Deep Learning, Neural Network and analogy with the human brain for readers who wants to go deeper into the subject, at the same time the content and explanations remain very simple for non-technical readers. How AI is powering the self-driving autonomous vehicles and its implication in the society, job, and the world economy, and it's transforming the world of home automation, will be another area of interest in the book. A full chapter is dedicated for CIOs and CTOs to consider AI top in their priority list. Applications of AI in Sports are going to be interesting for sports lovers as well as professionals working in the Sports and Computer Games domain. The book also gives special emphasis on Conversational AI like Virtual Assistances and ChatBots and their utility in different sectors. A chapter dedicated for healthcare and medicine provides a complete overview of AI applications in the field and how it's transforming clinical imaging, personalized medicines, drug discovery, and predictions and forecasting health-related events and many more. Cognitive Cyber Security using AI and Machine Learning would be an area of interest for the readers in the field of Cyber Security. The chapter talks about various modern cognitive cybersecurity tools and techniques to fight with the ever-evolving cybercrime space. 'Journey of a Digital Traveler' describes how AI is transforming the travel and tourism industry. The

