Access Free Programming Game Ai By Example Mat Buckland Pdf Free Copy

Artificial Intelligence By Example - Second Edition Programming Game AI by Example Artificial Intelligence By Example Artificial Intelligence By Example AI for Game Developers Artificial Intelligence for Games AI for Games, Third Edition Paradigms of Artificial Intelligence Programming AI Game Engine Programming Artificial Intelligence with Python Practical Game AI Programming AI for Games Behavioral Mathematics for Game AI The Application of Artificial Intelligence Deep Learning for Coders with fastai and PyTorch The AI Book AI and Machine Learning for Coders Artificial Intelligence in the 21st Century Introduction to Game AI Artificial Intelligence and Games Unity 4.x Game AI Programming Unreal Engine 4 AI Programming Essentials Artificial Intelligence in Practice Interpretable Machine Learning AI Crash Course Rebooting AI Artificial Intelligence and Machine Learning Fundamentals Competing in the Age of AI Game AI Pro 3 AI Application Programming Learning TensorFlow.js Artificial Intelligence Hands-On Artificial Intelligence with Java for Beginners Life 3.0 Data Science on AWS Mathematics for Machine Learning AI 2041 Working with AI Artificial Intelligence in Finance The AI Ladder

Be an adaptive thinker that leads the way to Artificial Intelligence Key Features AI-based examples to guide you in designing and implementing machine intelligence Develop your own method for future AI solutions Acquire advanced AI, machine learning, and deep learning design skills Book Description Artificial Intelligence has the potential to replicate humans in every field. This book serves as a starting point for you to understand how AI is built, with the help of intriguing examples and case studies. Artificial Intelligence By Example will make you an adaptive thinker and help you apply concepts to real-life scenarios. Using some of the most interesting AI examples, right from a simple chess engine to a cognitive chatbot, you will learn how to tackle the machine you are competing with. You will study some of the most advanced machine learning models, understand how to apply AI to blockchain and IoT, and develop emotional quotient in chatbots using neural networks. You will move on to designing AI solutions in a simple manner rather than get confused by complex architectures and techniques. This comprehensive guide will be a starter kit for you to develop AI applications on your own. By the end of this book, will have understood the fundamentals of AI and worked through a number of case studies that will help you develop business vision. What you will learn Use adaptive thinking to solve real-life AI case studies Rise beyond being a modern-day factory code worker Acquire advanced AI, machine learning, and deep learning designing skills Learn about cognitive NLP chatbots, quantum computing, and IoT and blockchain technology Understand future AI solutions and adapt quickly to them Develop out-of-the-box thinking to face any challenge the market presents Who this book is for Artificial Intelligence by Example is a simple, explanatory, and descriptive guide for junior developers, experienced developers, technology consultants, and those interested in AI who want to understand the fundamentals of Artificial Intelligence and implement it practically by devising smart solutions. Prior experience with Python and statistical knowledge is essential to make the most out of this book. Two leaders in the field offer a compelling analysis of the current state of the art and reveal the steps we must take to achieve a truly robust artificial intelligence. Despite the hype surrounding AI, creating an intelligence that rivals or exceeds human levels is far more complicated than we have been led to believe. Professors Gary Marcus and Ernest Davis have spent their careers at the forefront of AI research and have witnessed some of the greatest milestones in the field, but they argue that a computer beating a human in Jeopardy! does not signal that we are on the doorstep of fully autonomous cars or superintelligent machines. The achievements in the field thus far have occurred in closed systems with fixed sets of rules, and these approaches are too narrow to achieve genuine intelligence. The real world, in contrast, is wildly complex and open-ended. How can we bridge this gap? What will the consequences be when we do? Taking inspiration from the human mind, Marcus and Davis explain what we need to advance AI to the next level, and suggest that if we are wise along the way, we won't need to worry about a future of machine overlords. If we focus on endowing machines with common sense and deep understanding, rather than simply focusing on statistical analysis and gatherine ever larger collections of data, we will be able to create an AI we can trust—in our homes, our cars, and our doctors' offices. Rebooting AI provides a lucid, clear-eyed assessment of the current science and offers an inspiring vision of how a new generation of AI can make our lives better. Unlock the power of artificial intelligence with top Udemy AI instructor Hadelin de Ponteves. Key FeaturesLearn from friendly, plain English explanations and practical activitiesPut ideas into action with 5 hands-on projects that show step-by-step how to build intelligent softwareUse AI to win classic video games and construct a virtual self-driving carBook Description Welcome to the Robot World ... and start building intelligent software now! Through his best-selling video courses, Hadelin de Ponteves has taught hundreds of thousands of people to write AI software. Now, for the first time, his hands-on, energetic approach is available as a book. Starting with the basics before easing you into more complicated formulas and notation, AI Crash Course gives you everything you need to build AI systems with reinforcement learning and deep learning. Five full working projects put the ideas into action, showing step-by-step how to build intelligent software using the best and easiest tools for AI programming, including Python, TensorFlow, Keras, and PyTorch. AI Crash Course teaches everyone to build an AI to work in their applications. Once you've read this book, you're only limited by your imagination. What you will learnMaster the basics of AI without any previous experienceBuild fun projects, including a virtual-self-driving car and a robot warehouse workerUse AI to solve real-world business problemsLearn how to code in PythonDiscover the 5 principles of reinforcement learningCreate your own AI toolkitWho this book is for If you want to add AI to your skillset, this book is for you. It doesn't require data science or machine learning knowledge. Just maths basics (high school level). New York Times Best Seller How will Artificial Intelligence affect crime, war, justice, jobs, society and our very sense of being human? The rise of AI has the potential to transform our future more than any other technology—and there’s nobody better qualified or situated to explore that future than Max Tegmark, an MIT professor who’s helped mainstream research on how to keep AI beneficial. How can we grow our prosperity through automation without leaving people lacking income or purpose? What career advice should we give today’s kids? How can we make future AI systems more robust, so that they do what we want without crashing, malfunctioning or getting hacked? Should we fear an arms race in lethal autonomous weapons? Will machines eventually outsmart us at all tasks, replacing humans on the job market and perhaps altogether? Will AI help life flourish like never before or give us more power than we can handle? What sort of future do you want? This book empowers you to join what may be the most important conversation of our time. It doesn’t shy away from the full range of viewpoints or from the most controversial issues—from superintelligence to meaning, consciousness and the ultimate physical limits on life in the cosmos. Game AI Pro3: Collected Wisdom of Game AI Professionals presents state-of-the-art tips, tricks, and techniques drawn from developers of shipped commercial games as well as some of the best-known academics in the field. This book acts as a toolbox of proven techniques coupled with the newest advances in game AI. These techniques can be applied to almost any game and include topics such as behavior trees, utility theory, path planning, character behavior, and tactical reasoning. KEY FEATURES Contains 42 chapters from 50 of the game industry’s top developers and researchers. Provides real-life case studies of game AI in published commercial games. Covers a wide range of AI in games, with topics applicable to almost any game. Includes downloadable demos and/or source code, available at http://www.gameaipro.com SECTION EDITORS Neil Kirby General Wisdom Alex Champandard Architecture Nathan Sturtevant Movement and Pathfinding Damian Isla Character Behavior Kevin Dill Tactics and Strategy; Odds and Ends Two management and technology experts show that AI is not a job destroyer, exploring worker-AI collaboration in real-world work settings. This book breaks through both the hype and the doom-and-gloom surrounding automation and the deployment of artificial intelligence-enabled—“smart”—systems at work. Management and technology experts Thomas Davenport and Steven Miller show that, contrary to widespread predictions, prescriptions, and denunciations, AI is not primarily a job destroyer. Rather, AI changes the way we work—by taking over some tasks but not entire jobs, freeing people to do other, more important and more challenging work. By offering detailed, real-world case studies of AI-augmented jobs in settings that range from finance to the factory floor, Davenport and Miller also show that AI in the workplace is not the stuff of futuristic speculation. It is happening now to many companies and workers. These cases include a digital system for life insurance underwriting that analyzes applications and third-party data in real time, allowing human underwriters to focus on more complex cases; an intelligent telemedicine platform with a chat-based interface; a machine learning-system that identifies impending train maintenance issues by analyzing diesel fuel samples; and Flippy, a robotic assistant for fast food preparation. For each one, Davenport and Miller describe in detail the work context for the system, interviewing job incumbents, managers, and technology vendors. Short “insight” chapters draw out common themes and consider the implications of human collaboration with smart systems. 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. Teaches beginners how to craft artificial intelligence in a game environment, providing hands-on AI projects based on small understandable games, all of which can be completed using tools that are available for free online. Original. What is artificial intelligence? How is artificial intelligence used in game development? Game development lives in its own technical world. It has its own idioms, skills, and challenges. That’s one of the reasons games are so much fun to work on. Each game has its own rules, its own aesthetic, and its own trade-offs, and the hardware it will run on keeps changing. AI for Games is designed to help you understand one element of game development: artificial intelligence (AI). Understand the fundamentals and develop your own AI solutions in this updated edition packed with many new examples Key FeaturesAI-based examples to guide you in designing and implementing machine intelligenceBuild machine intelligence from scratch using artificial intelligence examplesDevelop machine intelligence from scratch using real artificial intelligenceBook Description AI has the potential to replicate humans in every field. Artificial Intelligence By Example, Second Edition serves as a starting point for you to understand how AI is built, with the help of intriguing and exciting examples. This book will make you an adaptive thinker and help you apply concepts to real-world scenarios. Using some of the most interesting AI examples, right from computer programs such as a simple chess engine to cognitive chatbots, you will learn how to tackle the machine you are competing with. You will study some of the most advanced machine learning models, understand how to apply AI to blockchain and Internet of Things (IoT), and develop emotional quotient in chatbots using neural networks such as recurrent neural networks (RNNs) and convolutional neural networks (CNNs). This edition also has new examples for hybrid neural networks, combining reinforcement learning (RL) and deep learning (DL), chained algorithms, combining unsupervised learning with decision trees, random forests, combining DL and genetic algorithms, conversational user interfaces (CUI) for chatbots, neuromorphic computing, and quantum computing. By the end of this book, you will understand the fundamentals of AI and have worked through a number of examples that will help you develop your AI solutions. What you will learnApply k-nearest neighbors (KNN) to language translations and explore the opportunities in Google TranslateUnderstand chained algorithms combining unsupervised learning with decision treesSolve the XOR problem with feedforward neural networks (FNN) and build its architecture to represent a data flow graphLearn about meta learning models with hybrid neural networksCreate a chatbot and optimize its emotional intelligence deficiencies with tools such as Small Talk and data loggingBuilding conversational user interfaces (CUI) for chatbotsWriting genetic algorithms that optimize deep learning neural networksBuild quantum computing circuitsWho this book is for Developers and those interested in AI, who want to understand the fundamentals of Artificial Intelligence and implement them practically. Prior experience with Python programming and statistical knowledge is essential to make the most out of this book. The widespread adoption of AI and machine learning is revolutionizing many industries today. Once these technologies are combined with the programmatic availability of historical and real-time financial data, the financial industry will also change fundamentally. With this practical book, you'll learn how to use AI and machine learning to discover statistical inefficiencies in financial markets and exploit them through algorithmic trading. Author Yves Hilpisch shows practitioners, students, and academics in both finance and data science practical ways to apply machine learning and deep learning algorithms to finance. Thanks to lots of self-contained Python examples, you'll be able to replicate all results and figures presented in the book. In five parts, this guide helps you: Learn central notions and algorithms from AI, including recent breakthroughs on the way to artificial general intelligence (AGI) and superintelligence (SI) Understand why data-driven finance, AI, and machine learning will have a lasting impact on financial theory and practice Apply neural networks and reinforcement learning to discover statistical inefficiencies in financial markets Identify and exploit economic inefficiencies through backtesting and algorithmic trading--the automated execution of trading strategies Understand how AI will influence the competitive dynamics in the financial industry and what the potential emergence of a financial singularity might bring about "a provocative new book" — The New York Times AI-centric organizations exhibit a new operating architecture, redefining how they create, capture, share, and deliver value. Now with a new preface that explores how the coronavirus crisis compelled organizations such as Massachusetts General Hospital, Verizon, and IKEA to transform themselves with remarkable speed, Marco Iansiti and Karim R. Lakhani show how reinventing the firm around data, analytics, and AI removes traditional constraints on scale, scope, and learning that have restricted business growth for hundreds of years. From Airbnb to Ant Financial, Microsoft to Amazon, research shows how AI-driven processes are vastly more scalable than traditional processes, allow massive scope increase, enabling companies to straddle industry boundaries, and create powerful opportunities for learning—to drive ever more accurate, complex, and sophisticated predictions. When traditional operating constraints are removed, strategy becomes a whole new game, one whose rules and likely outcomes this book will make clear. Iansiti and Lakhani: Present a framework for rethinking business and operating models Explain how "collisions" between AI-driven/digital and traditional/analog firms are reshaping competition, altering the structure of our economy, and forcing traditional companies to rearchitect their operating models Explain the opportunities and risks created by digital firms Describe the new challenges and responsibilities for the leaders of both digital and traditional firms Packed with examples—including many from the most powerful and innovative global, AI-driven competitors—and based on research in hundreds of firms across many sectors, this is your essential guide for rethinking how your firm competes and operates in the era of AI. This new edition provides a comprehensive, colorful, up-to-date, and accessible presentation of AI without sacrificing theoretical foundations. It includes numerous examples, applications, full color images, and human interest boxes to enhance student interest. New chapters on robotics and machine learning are now included. Advanced topics cover neural nets, genetic algorithms, natural language processing, planning, and complex board games. A companion DVD is provided with resources, applications, and figures from the book. Numerous instructors’ resources are available upon adoption. eBook Customers: Companion files are available for downloading with order number/proof of purchase by writing to the publisher at info@merclearning.com. FEATURES: • Includes new chapters on robotics and machine learning and new sections on speech understanding and metaphor in NLP • Provides a comprehensive, colorful, up to date, and accessible presentation of AI without sacrificing theoretical foundations • Uses numerous examples, applications, full color images, and human interest boxes to enhance student interest • Introduces important AI concepts e.g., robotics, use in video games, neural nets, machine learning, and more thorough practical applications • Features over 300 figures and color images with worked problems detailing AI methods and solutions to selected exercises • Includes DVD with resources, simulations, and figures from the book • Provides numerous instructors’ resources, including: solutions to exercises, Microsoft PP slides, etc. Deep learning is often viewed as the exclusive domain of math PhDs and big tech companies. But as this hands-on guide demonstrates, programmers comfortable with Python can achieve impressive results in deep learning with little math background, small amounts of data, and minimal code. How? With fastai, the first library to provide a consistent interface to the most frequently used deep learning applications. Authors Jeremy Howard and Sylvain Gugger, the creators of fastai, show you how to train a model on a wide range of tasks using fastai and PyTorch. You’ll also dive progressively further into deep learning theory to gain a complete understanding of the algorithms behind the scenes. Train models in computer vision, natural language processing, tabular data, and collaborative filtering Learn the latest deep learning techniques that matter most in practice Improve accuracy, speed, and reliability by understanding how deep learning models work Discover how to turn your models into web applications Implement deep learning algorithms from scratch Consider the ethical implications of your work Gain insight from the foreword by PyTorch cofounder, Soumith Chintala Create responsive and intelligent game AI using Blueprints in Unreal Engine 4 About This Book Understand and apply your Game AI better through various projects such as adding randomness and probability, and introducing movement Configure and debug Game AI logic using multiple methodologies Bridge the gap between your knowledge and Game AI in Unreal Engine 4 Who This Book Is For This book is for programmers and artists who want to expand their knowledge of Game AI in relation to Unreal Engine 4. You are recommended to have some experience of exploring Unreal Engine 4 prior to this book because we jump straight into Game AI. What You Will Learn Understand the fundamental components of Game AI within Unreal Engine 4 Skillfully introduce Game AI within Unreal Engine 4 Configure, customize, and assign Navigation and AI components to your pawn Create, debug, and analyze Game AI behavior Design responsive Game AI using the Behavior Tree methodology Create smart objects designed to interact with AI Utilize advanced AI features within your project to maximize the user experience In Detail Unreal Engine is a powerful game development engine that provides rich functionalities to create 2D and 3D games. Developers have the opportunity to build cross-platform mobile and desktop games from scratch. This book will show you how to apply artificial intelligence (AI) techniques to your Unreal project using blueprints as your scripting language. You will start with an introduction to AI, and learn how it is applied to gaming. Then you'll jump right in and create a simple AI bot and apply basic behaviors to allow it to move randomly. As you progress, you'll find out how to implement randomness and probability traits. Using NavMesh, you will impart navigation components such as character movement, MoveTo nodes, settings, and world objects, and implement Behavior Trees. At the end of the book, you will troubleshoot any issues that might crop up while building the game. Style and approach This easy-to-follow project-based guide throws you directly into the excitement of Game AI in an approachable and comprehensive manner. Creating robust artificial intelligence is one of the greatest challenges for game developers, yet the commercial success of a game is often dependent upon the quality of the AI. In this book, Ian Millington brings extensive professional experience to the problem of improving the quality of AI in games. He describes numerous examples from real games and explores the underlying ideas through detailed case studies. He goes further to introduce many techniques little used by developers today. The book's associated web site contains a library of C++ source code and demonstration programs, and a complete commercial source code library of AI algorithms and techniques. "Artificial Intelligence for Games - 2nd edition" will be highly useful to academics teaching courses on game AI, in that it includes exercises with each chapter. It will also include new and expanded coverage of the following: AI-oriented gameplay; Behavior driven AI; Casual games (puzzle games). Key Features * The first comprehensive, professional tutorial and reference to implement true AI in games written by an engineer with extensive industry experience. * Walks through the entire development process from beginning to end. * Includes examples from over 100 real games, 10 in-depth case studies, and web site with sample code. Artificial Intelligence: A Modern Approach offers the most comprehensive, up-to-date introduction to the theory and practice of artificial intelligence. Number one in its field, this textbook is ideal for one or two-semester, undergraduate or graduate-level courses in Artificial Intelligence. If you're looking to make a career move from programmer to AI specialist, this is the ideal place to start. Based on Laurence Moroney's extremely successful AI courses, this introductory book provides a hands-on, code-first approach to help you build confidence while you learn key topics. You'll understand how to implement the most common scenarios in machine learning, such as computer vision, natural language processing (NLP), and sequence modeling for web, mobile, cloud, and embedded runtimes. Most books on machine learning begin with a daunting amount of advanced math. This guide is built on practical lessons that let you work directly with the code. You'll learn: How to build models with TensorFlow using skills that employers desire The basics of machine learning by working with code samples How to implement computer

vision, including feature detection in images How to use NLP to tokenize and sequence words and sentences Methods for embedding models in Android and iOS How to serve models over the web and in the cloud with TensorFlow Serving This is the first textbook dedicated to explaining how artificial intelligence (AI) techniques can be used in and for games. After introductory chapters that explain the background and key techniques in AI and games, the authors explain how to use AI to play games, to generate content for games and to model players. The book will be suitable for undergraduate and graduate courses in games, artificial intelligence, design, human-computer interaction, and computational intelligence, and also for self-study by industrial game developers and practitioners. The authors have developed a website (http://www.gameaibook.org) that complements the material covered in the book with up-to-date exercises, lecture slides and reading. The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site. Written for the novice AI programmer, this text introduces the reader to techniques such as finite state machines, fuzzy logic, neural networks and many others in an easy-to-understand language, supported with code samples throughout the text. This book fills the gap between artificial intelligence (AI) books designed to learn underlying AI algorithms and general Unity3D books written to cover basic scene setup and scripting in Unity3D. Game AI Scripting in Unity3D covers implementing AI techniques such as flocking, pathfinding, path following, and behavior trees in Unity3D with example projects. Game AI Scripting in Unity3D will show you how to apply AI techniques to your Unity3D projects using C# as the scripting language. Unlike other AI books and Unity3D books, this book tries to focus more on the application of AI techniques in the Unity3D engine, with sample projects that demonstrate finite state machines (FSMs), pathfinding, steering, navigation graphs, and behavior trees techniques. This book shows how to implement various AI techniques in Unity3D by implementing the algorithm from scratch using C#, applying Unity3D built-in features, or using available scripts and plugins from the Unity Asset Store. For example, we'll be implementing our own A* algorithm to do pathfinding but will also explore the Unity3D navigation graphs feature. Then we'll use the Behave plugin to construct behavior trees for intelligent AI character behaviors. Game AI Scripting in Unity3d covers other AI techniques such as flocking behavior, building a sensory system for taking inputs from the environment and other AI agents, and so on. In the final chapter this book will show you how to build a racing game AI project using Unity3D and applying the techniques described in earlier chapters. This book describes in detail many of the AI techniques used in modern computer games, explicity shows how to implement these practical techniques within the framework of several game developers with a practical foundation to game AI. Create AI applications in Python and lay the foundations for your career in data science Key FeaturesPractical examples that explain key machine learning algorithmsExplore neural networks in detail with interesting examplesMaster core AI concepts with engaging activitiesBook Description Machine learning and neural networks are pillars on which you can build intelligent applications. Artificial Intelligence and Machine Learning Fundamentals begins by introducing you to Python and discussing AI search algorithms. You will cover in-depth mathematical topics, such as regression and classification, illustrated by Python examples. As you make your way through the book, you will progress to advanced AI techniques and concepts, and work on real-life datasets to form decision trees and clusters. You will be introduced to neural networks, a powerful tool based on Moore's law. By the end of this book, you will be confident when it comes to building your own AI applications with your newly acquired skills! What you will learnUnderstand the importance, principles, and fields of AIImplement basic artificial intelligence concepts with PythonApply regression and classification concepts to real-world problemsPerform predictive analysis using decision trees and random forestsCarry out clustering using the k-means and mean shift algorithmsUnderstand the fundamentals of deep learning via practical examplesWho this book is for Artificial Intelligence and Machine Learning Fundamentals is for software developers and data scientists who want to enrich their projects with machine learning. You do not need any prior experience in AI. However, it’s recommended that you have knowledge of high school-level mathematics and at least one programming language (preferably Python). AI is an integral part of every video game. This book helps professionals keep up with the constantly evolving technological advances in the fast growing game industry and equips students with up-to-date information they need to jumpstart their careers. This revised and updated Third Edition includes new techniques, algorithms, data structures and representations needed to create powerful AI in games. Key Features A comprehensive professional tutorial and reference to implement true AI in games Includes new exercises so readers can test their comprehension and understanding of the concepts and practices presented Revised and updated to cover new techniques and advances in AI Walks the reader through the entire game AI development process Build, train, and deploy intelligent applications using Java libraries Key Features Leverage the power of Java libraries to build smart applications Build and train deep learning models for implementing artificial intelligence Learn various algorithms to automate complex tasks Book Description Artificial intelligence (AI) is increasingly in demand as well as relevant in the modern world, where everything is driven by technology and data. AI can be used for automating systems or processes to carry out complex tasks and functions in order to achieve optimal performance and productivity. Hands-On Artificial Intelligence with Java for Beginners begins by introducing you to AI concepts and algorithms. You will learn about various Java-based libraries and frameworks that can be used in implementing AI to build smart applications. In addition to this, the book teaches you how to implement easy to complex AI tasks, such as genetic programming, heuristic searches, reinforcement learning, neural networks, and segmentation, all with a practical approach. By the end of this book, you will not only have a solid grasp of AI concepts, but you'll also be able to build your own smart applications for multiple domains. What you will learn Leverage different Java packages and tools such as Weka, RapidMiner, and Deeplearning4j, among others Build machine learning models using supervised and unsupervised machine learning techniques Implement different deep learning algorithms in Deeplearning4j and build applications based on them Study the basics of heuristic searching and genetic programming Differentiate between syntactic and semantic similarity among texts Perform sentiment analysis for effective decision making with LingPipe Who this book is for Hands-On Artificial Intelligence with Java for Beginners is for Java developers who want to learn the fundamentals of artificial intelligence and extend their programming knowledge to build smarter applications. With this practical book, AI and machine learning practitioners will learn how to successfully build and deploy data science projects on Amazon Web Services. The Amazon AI and machine learning stack unifies data science, data engineering, and application development to help level upyour skills. This guide shows you how to build and run pipelines in the cloud, then integrate the results into applications in minutes instead of days. Throughout the book, authors Chris Fregly and Antje Barth demonstrate how to reduce cost and improve performance. Apply the Amazon AI and ML stack to real-world use cases for natural language processing, computer vision, fraud detection, conversational devices, and more Use automated machine learning to implement a specific subset of use cases with SageMaker Autopilot Dive deep into the complete model development lifecycle for a BERT-based NLP use case including data ingestion, analysis, model training, and deployment Tie everything together into a repeatable machine learning operations pipeline Explore real-time ML, anomaly detection, and streaming analytics on data streams with Amazon Kinesis and Managed Streaming for Apache Kafka Learn security best practices for data science projects and workflows including identity and access management, authentication, authorization, and more Given the demand for AI and the ubiquity of JavaScript, TensorFlow.js was inevitable. With this Google framework, seasoned AI veterans and web developers alike can help propel the future of AI-driven websites. In this guide, author Gant Laborde--Google Developer Expert in machine learningand the web--provides a hands-on end-to-end approach to TensorFlow.js fundamentals for a broad technical audience that includes data scientists, engineers, web developers, students, and researchers. You'll begin by working through some basic examples in TensorFlow.js before diving deeper into neural network architectures, DataFrames, TensorFlow Hub, model conversion, transfer learning, and more. Once you finish this book, you'll know how to build and deploy production-readydeep learning systems with TensorFlow.js. Explore tensors, the most fundamental structure of machine learning Convert data into tensors and back with a real-world example Combine AI with the web using TensorFlow.js Use resources to convert, train, and manage machine learning data Build and train your own training models from scratch AI may be the greatest opportunity of our time, with the potential to add nearly $16 trillion to the global economy over the next decade. But so far, adoption has been much slower than anticipated, or so headlines may lead you to believe. With this practical guide, business leaders will discover where they are in their AI journey and learn the steps necessary to successfully scale AI throughout their organization. Authors Rob Thomas and Paul Zikopoulos from IBM introduce C-suite executives and business professionals to the AI Ladder—a unified, prescriptive approach to help them understand and accelerate the AI journey. Complete with real-world examples and real-life experiences, this book explores AI drivers, value, and opportunity, as well as the adoption challenges organizations face. Understand why you can’t have AI without an information architecture (IA) Appreciate how AI is as much a cultural change as it is a technological one Collect data and make it simple and accessible, regardless of where it lives Organize data to create a business-ready analytics foundation Analyze data, and build and scale AI with trust and transparency Infuse AI throughout your entire business and create intelligent workflows This book is about making machine learning models and their decisions interpretable. After exploring the concepts of interpretability, you will learn about simple, interpretable models such as decision trees, decision rules and linear regression. Later chapters focus on general model-agnostic methods for interpreting black box models like feature importance and accumulated local effects and explaining individual predictions with Shapley values and LIME. All interpretation methods are explained in depth and discussed critically. How do they work under the hood? What are their strengths and weaknesses? How can their outputs be interpreted? This book will enable you to select and correctly apply the interpretation method that is most suitable for your machine learning project. Cyber-solutions to real-world business problems Artificial Intelligence in Practice is a fascinating look into how companies use AI and machine learning to solve problems. Presenting 50 case studies of actual situations, this book demonstrates practical applications to issues faced by businesses around the globe. The rapidly evolving field of artificial intelligence has expanded beyond research labs and computer science departments and made its way into the mainstream business environment. Artificial intelligence and machine learning are cited as the most important modern business trends to drive success. It is used in areas ranging from banking and finance to social media and marketing. This technology continues to provide innovative solutions to businesses of all sizes, sectors and industries. This engaging and topical book explores a wide range of cases illustrating how businesses use AI to boost performance, drive efficiency, analyse market preferences and many others. Best-selling author and renowned AI expert Bernard Marr reveals how machine learning technology is transforming the way companies conduct business. This detailed examination provides an overview of each company, describes the specific problem and explains how AI facilitates resolution. Each case study provides a comprehensive overview, including some technical details as well as key learning summaries: Understand how specific business problems are addressed by innovative machine learning methods Explore how current artificial intelligence applications improve performance and increase efficiency in various situations Expand your knowledge of recent AI advancements in technology Gain insight on the future of AI and its increasing role in business and industry Artificial Intelligence in Practice: How 50 Successful Companies Used Artificial Intelligence to Solve Problems is an insightful and informative exploration of the transformative power of technology in 21st century commerce. How will artificial intelligence change our world within twenty years? A WALL STREET JOURNAL, WASHINGTON POST, AND FINANCIAL TIMES BEST BOOK OF THE YEAR • “This inspired collaboration between a pioneering technologist and a visionary writer of science fiction offers bold and urgent insights.”—Yann LeCun, winner of the Turing Award; chief AI scientist, Facebook “Amazingly entertaining . . . Lee and Chen take us on an immersive trip through the future. . . . Eye-opening.”—Mark Cuban AI will be the defining development of the twenty-first century. Within two decades, aspects of daily human life will be unrecognizable. AI will generate unprecedented wealth, revolutionize medicine and education through human-machine symbiosis, and create brand-new forms of communication and entertainment. In liberating us from routine work, however, AI will also challenge the organizing principles of our economic and social order. Meanwhile, AI will bring new risks in the form of autonomous weapons and smart technology that inherits human bias. AI is at a tipping point, and people need to wake up—both to AI’s radiant pathways and its existential perils for life as we know it. In this provocative, utterly original work, Kai-Fu Lee, the former president of Google China and bestselling author of AI Superpowers, teams up with celebrated novelist Chen Qiufan to imagine our world in 2041 and how it will be shaped by AI. In ten gripping short stories, they introduce readers to an array of eye-opening 2041 settings, such as: • In San Francisco, the “job reallocation” industry emerges as deep learning AI causes widespread job displacement • In Tokyo, a music fan is swept up in an immersive form of celebrity worship based on virtual reality and mixed reality • In Mumbai, a teenage girl rebels when AI’s crunching of big data gets in the way of romance • In Seoul, virtual companions with perfected natural language processing (NLP) skills offer orphaned twins new ways to connect • In Munich, a rogue scientist draws on quantum computing, computer vision and other AI technologies in a revenge plot that imperils the world By gazing toward a not-so-distant horizon, AI 2041 offers urgent insights into our collective future—while reminding readers that, ultimately, humankind remains the author of its destiny. This completely updated edition provides programmers with the concepts and examples to master artificial intelligence. Topics covered include neural networks, natural language processing, intelligent agents, genetic algorithms, rules-based systems, learning algorithms, migratory software, and more. The CD-ROM includes complete, fully commented source code. Jump into the world of Game AI development About This Book Move beyond using libraries to create smart game AI, and create your own AI projects from scratch Implement the latest algorithms for AI development and in-game interaction Customize your existing game AI and make it better and more efficient to improve your overall game performance Who This Book Is For This book is for game developers with a basic knowledge of game development techniques and some basic programming techniques in C# or C++. What You Will Learn Get to know the basics of how to create different AI for different type of games Know what to do when something interferes with the AI choices and how the AI should behave if that happens Plan the interaction between the AI character and the environment using Smart Zones or Triggering Events Use animations correctly, blending one animation into another and rather than stopping one animation and starting another Calculate the best options for the AI to move using Pruning Strategies, Wall Distances, Map Preprocess Implementation, and Forced Neighbours Create Theta algorithms to the AI to find short and realistic looking paths Add many characters into the same scene and make them behave like a realistic crowd In Detail The book starts with the basics examples of AI for different game genres and directly jumps into defining the probabilities and possibilities of the AI character to determine character movement. Next, you'll learn how AI characters should behave within the environment created. Moving on, you'll explore how to work with animations. You'll also plan and create pruning strategies, and create Theta algorithms to find short and realistic looking game paths. Next, you'll learn how the AI should behave when there is a lot of characters in the same scene. You'll explore which methods and algorithms, such as possibility maps, Forward Chaining Plan, Rete Algorithm, Pruning Strategies, Wall Distances, and Map Preprocess Implementation should be used on different occasions. You'll discover how to overcome some limitations, and how to deliver a better experience to the player. By the end of the book, you think differently about AI. Style and approach The book has a step-by-step tutorial style approach. The algorithms are explained by implementing them in #. This text is written for all levels of game AI developers who wish to further their knowledge of the myriad AI games used in various genres. It provides the knowledge and techniques needed to create an AI engine Human behavior is never an exact science, making the design and programming of artificial intelligence that seeks to replicate human behavior difficult. Usually, the answers cannot be found in sterile algorithms that are often the focus of artificial intelligence programming. However, by analyzing why people behave the way we do, we can break down the process into increasingly smaller components. We can model many of those individual components in the language of logic and mathematics and then reassemble them into larger, more involved decision-making processes. Drawing from classical game theory, "Behavioral Mathematics for Game AI" covers both the psychological foundations of human decisions and the mathematical modeling techniques that AI designers and programmers can use to replicate them. With examples from both real life and game situations, you'll explore topics such as utility, the fallacy of rational behavior, and the inconsistencies and contradictions that human behavior often exhibits. You'll examine various ways of using statistics, formulas, and algorithms to create believable simulations and to model these dynamic, realistic, and interesting behaviors in video games. Finally, you'll be introduced to a number of tools you can use in conjunction with standard AI algorithms to make it easier to utilize the mathematical models. Paradigms of AI Programming is the first text to teach advanced Common Lisp techniques in the context of building major AI systems. By reconstructing authentic, complex AI programs using state-of-the-art Common Lisp, the book teaches students and professionals how to build and debug robust practical programs, while demonstrating superior programming style and important AI concepts. The author strongly emphasizes the practical performance issues involved in writing real working programs of significant size. Chapters on troubleshooting and efficiency are included, along with a discussion of the fundamentals of object-oriented programming and a description of the main CLOS functions. This volume is an excellent text for a course on AI programming, a useful supplement for general AI courses and an indispensable reference for the professional programmer. Written by prominent thought leaders in the global fintech space, The AI Book aggregates diverse expertise into a single, informative volume and explains what artifical intelligence really means and how it can be used across financial services today. Key industry developments are explained in detail, and critical insights from cutting-edge practitioners offer first-hand information and lessons learned. Coverage includes: · Understanding the AI Portfolio: from machine learning to chatbots, to natural language processing (NLP); a deep dive into the Machine Intelligence Landscape; essentials on core technologies, rethinking enterprise, rethinking industries, rethinking humans; quantum computing and next-generation AI · AI experimentation and embedded usage, and the change in business model, value proposition, organisation, customer and co-worker experiences in today’s Financial Services Industry · The future state of financial services and capital markets – what’s next for the real-world implementation of AITech? · The innovating customer – users are not waiting for the financial services industry to work out how AI can re-shape their sector, profitability and competitiveness · Boardroom issues created and magnified by AI trends, including conduct, regulation & oversight in an algo-driven world, cybersecurity, diversity & inclusion, data privacy, the ‘unbundled corporation’ & the future of work, social responsibility, sustainability, and the new leadership imperatives · Ethical considerations of deploying AI solutions and why explainable AI is so important Build real-world Artificial Intelligence applications with Python to intelligently interact with the world around you About This Book Step into the amazing world of intelligent apps using this comprehensive guide Enter the world of Artificial Intelligence, explore it, and create your own applications Work through simple yet insightful examples that will get you up and running with Artificial Intelligence in no time Who This Book Is For This book is for Python developers who want to build real-world Artificial Intelligence applications. This book is friendly to Python beginners, but being familiar with Python would be useful to play around with the code. It will also be useful for experienced Python programmers who are looking to use Artificial Intelligence techniques in their existing technology stacks. What You Will Learn Realize different classification and regression techniques Understand the concept of clustering and how to use it to automatically segment data See how to build an intelligent recommender system Understand logic programming and how to use it Build automatic speech recognition systems Understand the basics of heuristic search and genetic programming Develop games using Artificial Intelligence Learn how reinforcement learning works Discover how to build intelligent applications centered on images, text, and time series data See how to use deep learning algorithms and build applications based on it In Detail Artificial Intelligence is becoming increasingly relevant in the modern world where everything is driven by technology and data. It is used extensively across many fields such as search engines, image recognition, robotics, finance, and so on. We will explore various real-world scenarios in this book and you'll learn about various algorithms that can be used to build Artificial Intelligence applications. During the course of this book, you will find out how to make informed decisions about what algorithms to use in a given context. Starting from the basics of Artificial Intelligence, you will learn how to develop various building blocks using different data mining techniques. You will see how to implement different algorithms to get the best possible results, and will understand how to apply them to real-world scenarios. If you want to add an intelligence layer to any application that's based on images, text, stock market, or some other form of data, this exciting book on Artificial Intelligence will definitely be your guide! Style and approach This highly practical book will show you how to implement Artificial Intelligence. The book provides multiple examples enabling you to create smart applications to meet the needs of your organization. In every chapter, we explain an algorithm, implement it, and then build a smart application.