

Read Free Deep Learning For Business With Python A Very Gentle Introduction To Deep Neural Networks For Practical Data Science

## Deep Learning For Business With Python A Very Gentle Introduction To Deep Neural Networks For Practical Data Science

\*55% OFF for Bookstores! Discounted Retail Price NOW at \$11.69 instead of \$25.99\* The ultimate guide on Artificial Intelligence and Machine Learning, and how to apply it to the business and marketing, to be ahead from competitors. Your customers Will Never Stop to Use this Awesome Guide! Artificial intelligence technology has become so common that many people do not realize that AI is already a part of their lives. Businesses use AI in many realms, including predictive analytics, product pricing, and marketing. In healthcare, artificial intelligence can be used in medical image analysis, language processing in dictation, and automated healthcare services. Because of machine learning capabilities in AI, any data that artificial intelligence is provided with can be used to learn and to make new, unexpected predictions and recommendations. In this book, the reader will understand not only how AI works, but will also learn how machine learning is revolutionizing the industry. Although artificial intelligence can be complex, AI technology does not have to be a daunting subject.

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Understanding artificial intelligence requires a basic understanding of how machines can be programmed to think like humans. It is no surprise that AI is revolutionizing most areas of industry. Big tech companies have been on the forefront of AI because of their large amounts of data and their brain power in the form of machine learning teams, but anyone can learn how to use artificial intelligence to accomplish a basic business goal. Artificial intelligence technology has progressed so fast that many business leaders find themselves faced with the task of integrating all this new tech into how they do business. This can be a challenge for leaders and others whose core business function is not directly related to artificial intelligence or computer science. Artificial intelligence can be simply applied to business marketing strategies, social media engagement, and a host of other business functions. You will learn: - How Machine Learning works - AI Models and Networks - AI applied to complicated Tasks - How apply AI to your Marketing - How AI is changing Business - The secret of Big Tech companies and much more! Buy it NOW and let your customers get addicted to this amazing book!

Understand deep learning, the nuances of its different models, and where these models can be applied. The abundance of data and demand for superior products/services have driven the development of advanced computer science

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techniques, among them image and speech recognition. Introduction to Deep Learning Using R provides a theoretical and practical understanding of the models that perform these tasks by building upon the fundamentals of data science through machine learning and deep learning. This step-by-step guide will help you understand the disciplines so that you can apply the methodology in a variety of contexts. All examples are taught in the R statistical language, allowing students and professionals to implement these techniques using open source tools. What You'll Learn Understand the intuition and mathematics that power deep learning models Utilize various algorithms using the R programming language and its packages Use best practices for experimental design and variable selection Practice the methodology to approach and effectively solve problems as a data scientist Evaluate the effectiveness of algorithmic solutions and enhance their predictive power Who This Book Is For Students, researchers, and data scientists who are familiar with programming using R. This book also is also of use for those who wish to learn how to appropriately deploy these algorithms in applications where they would be most useful. This book is for business executives and students who want to learn about the tools used in machine learning. In creating the second edition, John Hull has continued to improve his material and added three new chapters. The book

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explains the most popular algorithms clearly and succinctly without using calculus or matrix/vector algebra. The focus is on business applications. There are many illustrative examples. These include assessing the risk of a country for international investment, predicting the value of real estate, and classifying retail loans as acceptable or unacceptable. Data, worksheets, and Python code for the examples is on the author's website. A complete set of PowerPoint slides that can be used by instructors is also on the website. The opening chapter reviews different types of machine learning models. It explains the role of the training data set, the validation data set, and the test data set. It also explains the issues involved in cleaning data and reviews Bayes' theorem. Chapter 2 is devoted to unsupervised learning. It explains the k-means algorithm and alternative approaches to clustering. It also covers principal components analysis. Chapter 3 explains linear and logistic regression. It covers regularization using Ridge, Lasso, and Elastic Net. Chapter 4 covers decision trees. It includes a discussion of the naive Bayes classifier, random forests, and other ensemble methods. Chapter 5, explains how the SVM approach can be used for both linear and non-linear classification as well as for the prediction of a continuous variable. Chapter 6 is devoted to neural networks. It includes a discussion of the gradient descent algorithm, backpropagation, stopping rules, autoencoders, convolutional neural

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networks, and recurrent neural networks. Chapter 7 explains reinforcement learning using two games as examples. It covers Q-learning and deep Q-learning, and discusses applications. Chapter 8 covers natural language processing. It discusses how the algorithms introduced in the book can be used for sentiment analysis, language translation and information retrieval. Chapter 9 is concerned with model interpretability. It discusses the importance of making models understandable and the procedures that can be used for both white-box and black-box models. Chapter 10 explains two applications involving derivatives that the author has been involved in. The final chapter focuses on issues for society. The topics covered include data privacy, biases, ethical considerations, legal issues, and adversarial machine learning. At the ends of chapters there are short concept questions to test the readers understanding of the material and longer exercises. Answers are at the end of the book. The book includes a glossary of terms and an index.

Are you thinking about implementing artificial intelligence and machine learning in your business but you have no concrete idea how to do so? Artificial Intelligence and the field of Machine learning are growing exponentially, and with the help of this book, there are endless possibilities of what you will be able to do with them! This guidebook is going to take a closer look at how Artificial Intelligence and

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Machine Learning are able to work for businesses, as well as how you can use some of the tips and techniques that come with these processes for your own needs. Some of the topics that we will explore when we go through this book will include: The basics of Artificial Intelligence (AI) and Machine Learning (ML); How to be prepared for the challenges to face when using Artificial Intelligence and Machine Learning; How ML can enhance the competitiveness of any business; A step-by-step method to develop AI and ML Projects and to build an enterprise's strategy; If you want to find out how to boost your business with the new technologies, this book is perfect for you!

Millions of non-technical professionals and leaders want to understand Artificial Intelligence (AI) and Machine Learning (ML) -- whether to improve their businesses, be more effective citizens, consumers or policymakers, or just out of sheer curiosity. Until now, most books on the subject have either been too complicated and mathematical, or have simply avoided the big picture by focusing on the use of specific software libraries. In *Artificial Intelligence for Business*, Doug Rose bridges the gap, offering today's most accessible and useful introduction to AI and ML technologies -- and what they can and can't do. Rose begins by tracing AI's evolution from the early 1950s to the present, illuminating core ideas that still drive its development. Next, he explores recent

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innovations that have reinvigorated the field by providing the "big data" that makes machine learning so powerful - innovations such as GPS, social media and electronic transactions. Finally, he explains how today's machines learn by combining powerful processing, advanced algorithms, and artificial neural networks that mimic the human brain. Throughout, he illustrates key concepts with practical examples that help you connect AI, ML, and neural networks to specific problems and solutions. Step by step, he systematically demystifies these powerful technologies, removing the fear, bewilderment, and advanced math -- so you can understand the new possibilities they create, and start using them.

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.

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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

Every few years, there is a technological trend that leads to the creation of thousands of startups and/or new businesses. At present, we can say without any doubt that one of these trends is Machine Learning (Artificial Intelligence). There is a very powerful reason that this is happening. Currently, we are transitioning from the industrial economy born in the late nineteenth century to a new digital economy centered on data. In this data economy, the success of an organization depends to a large extent on how it uses data to make better decisions. Therefore, leading companies are starting to use their data and Machine Learning algorithms to improve their business processes and, consequently, their results. To put it in context, McKinsey (one of the leading Management Consulting companies worldwide) tells us that "Tech giants including Baidu and Google are spending between \$20B to \$30B on AI, with 90%

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of this spent on R&D and deployment, and 10% on AI acquisitions". Amazing, right? Can you imagine capturing one-thousandth of these investments with a new startup or a new business model? Well, that is the main objective of this course: explaining the key concepts of Machine Learning in a very practical way, along with the methods needed for creating disruptive Business Models based on said Tech Trend. That way, you can take advantage of this tremendous opportunity and become a successful businessperson or entrepreneur.

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

Deep learning offers the potential to identify complex patterns and relationships hidden in data

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of all sorts. Deep Learning with Structured Data shows you how to apply powerful deep learning analysis techniques to the kind of structured, tabular data you'll find in the relational databases that real-world businesses depend on. Filled with practical, relevant applications, this book teaches you how deep learning can augment your existing machine learning and business intelligence systems. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Are you an aspirant software developer? Do you start from zero or do you want to expand your knowledge of the incredible world of machine learning? Do you want to understand how to take advantage of big data from big tech companies (Google, Facebook and Amazon) to reach your objectives? Then keep reading. Machine learning is the path to the future: the most profitable way to increase your career or business! This book will help you develop fundamental and advance information in the Artificial Intelligence, Data Science, Algorithms, Python and Machine Learning. Machine learning is among computer science's most rising and money-making areas! This book includes: Machine Learning Introduction Why Machine Learning Have Become So Successful? Machine Learning Utilizations Applications of Machine Learning Artificial Intelligence and its Importance Machine Learning Algorithms Types Machine Learning Regression Techniques Random Forests vs Decision Trees What is an Artificial Neural Network? Why Should We Use Data Science and How it can help in Business? Why Python and Data Science Mix Well? Data Science Statistical Learning Machine Learning Algorithms for Data Science How Machine Learning Is Reshaping Marketing? Solutions for Small Businesses Using Big Data ...and much more!!! Don't wait anymore, press the Buy Now Button and get started!

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Master the practical aspects of implementing deep learning solutions with PyTorch, using a hands-on approach to understanding both theory and practice. This updated edition will prepare you for applying deep learning to real world problems with a sound theoretical foundation and practical know-how with PyTorch, a platform developed by Facebook's Artificial Intelligence Research Group. You'll start with a perspective on how and why deep learning with PyTorch has emerged as an path-breaking framework with a set of tools and techniques to solve real-world problems. Next, the book will ground you with the mathematical fundamentals of linear algebra, vector calculus, probability and optimization. Having established this foundation, you'll move on to key components and functionality of PyTorch including layers, loss functions and optimization algorithms. You'll also gain an understanding of Graphical Processing Unit (GPU) based computation, which is essential for training deep learning models. All the key architectures in deep learning are covered, including feedforward networks, convolution neural networks, recurrent neural networks, long short-term memory networks, autoencoders and generative adversarial networks. Backed by a number of tricks of the trade for training and optimizing deep learning models, this edition of Deep Learning with Python explains the best practices in taking these models to production with PyTorch. What You'll Learn Review machine learning fundamentals such as overfitting, underfitting, and regularization. Understand deep learning fundamentals such as feed-forward networks, convolution neural networks, recurrent neural networks, automatic differentiation, and stochastic gradient descent. Apply in-depth linear algebra with PyTorch Explore PyTorch fundamentals and its building blocks Work with tuning and optimizing models Who This Book Is For Beginners with a working knowledge of Python who want to understand Deep Learning

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in a practical, hands-on manner.

Learn How to Apply Artificial Intelligence in Business! Over the years, machines have attained intelligence capabilities that were only known to man before. Self-driving cars and virtual assistants like Siri and Alexa are some of the examples of artificial intelligence in action in daily life. For a business, artificial intelligence is important in increasing productivity, enhancing decision making and increasing profits. This book puts into perspective how artificial intelligence affects business. With 14 comprehensive chapters, this book is the most detailed guide you will find on the internet on artificial intelligence for business. Here is a rundown of what you learn: How to get started with AI in your business What benefits and impacts the use of AI will have in your business How you can build and incorporate an AI strategy in your business How machine learning and AI will enhance the competitiveness of your business The best uses for AI in your business The future of AI, especially for businesses FAQ? Q: Who is this book suitable for? A: This book is for business executives and students of business that want to be future proof. It will take you through the concepts of machine learning, artificial intelligence and deep learning and how you can use them to impact your business. Q: At the end of this book, will I be able to implement AI in my business? A: Yes. This book provides a step-by-step method on how you can develop machine learning and artificial intelligence projects for your business. Everything is covered: from developing a strategy to operationalizing ML and AI projects. Grab your copy of this comprehensive guide to artificial intelligence for business and stand the test of time!

Teaches the machine learning process for business students and professionals using automated machine learning, a new development in data science that requires only a few

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weeks to learn instead of years of training. Though the concept of computers learning to solve a problem may still conjure thoughts of futuristic artificial intelligence, the reality is that machine learning algorithms now exist within most major software, including Websites and even word processors. These algorithms are transforming society in the most radical way since the Industrial Revolution, primarily through automating tasks such as deciding which users to advertise to, which machines are likely to break down, and which stock to buy and sell. While this work no longer always requires advanced technical expertise, it is crucial that practitioners and students alike understand the world of machine learning. In this book, Kai R. Larsen and Daniel S. Becker teach the machine learning process using a new development in data science: automated machine learning (AutoML). AutoML, when implemented properly, makes machine learning accessible by removing the need for years of experience in the most arcane aspects of data science, such as math, statistics, and computer science. Larsen and Becker demonstrate how anyone trained in the use of AutoML can use it to test their ideas and support the quality of those ideas during presentations to management and stakeholder groups. Because the requisite investment is a few weeks rather than a few years of training, these tools will likely become a core component of undergraduate and graduate programs alike. With first-hand examples from the industry-leading DataRobot platform, Automated Machine Learning for Business provides a clear overview of the process and engages with essential tools for the future of data science.

What is machine learning? -- Automating machine learning -- Specify business problem -- Acquire subject matter expertise -- Define prediction target -- Decide on unit of analysis -- Success, risk, and continuation -- Accessing and storing data -- Data integration -- Data

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transformations -- Summarization -- Data reduction and splitting -- Startup processes -- Feature understanding and selection -- Build candidate models -- Understanding the process -- Evaluate model performance -- Comparing model pairs -- Interpret model -- Communicate model insights -- Set up prediction system -- Document modeling process for reproducibility -- Create model monitoring and maintenance plan -- Seven types of target leakage in machine learning and an exercise -- Time-aware modeling -- Time-series modeling.

Constant improvements in technological applications have allowed for more opportunities to develop automated systems. This not only leads to higher success in smart data analysis, but also ensures that technological progression will continue. Ubiquitous Machine Learning and its Applications is a pivotal reference source for the latest research on the issues and challenges machines face in the new millennium. Featuring extensive coverage on relevant areas such as computational advertising, software engineering, and bioinformatics, this publication is an ideal resource for academicians, graduate students, engineering professionals, and researchers interested in discovering how they can apply these advancements to various disciplines.

"The authors' clear visual style provides a comprehensive look at what's currently possible with artificial neural networks as well as a glimpse of the magic that's to come." –Tim Urban, author of Wait But Why Fully Practical, Insightful Guide to Modern Deep Learning Deep learning is transforming software, facilitating powerful new artificial intelligence capabilities, and driving unprecedented algorithm performance. Deep Learning Illustrated is uniquely intuitive and offers a complete introduction to the discipline's techniques. Packed with full-color figures and easy-to-follow code, it sweeps away the complexity of building deep learning models, making the subject approachable and fun to learn. World-class instructor and practitioner Jon

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Krohn—with visionary content from Grant Beyleveld and beautiful illustrations by Aglaé Bassens—presents straightforward analogies to explain what deep learning is, why it has become so popular, and how it relates to other machine learning approaches. Krohn has created a practical reference and tutorial for developers, data scientists, researchers, analysts, and students who want to start applying it. He illuminates theory with hands-on Python code in accompanying Jupyter notebooks. To help you progress quickly, he focuses on the versatile deep learning library Keras to nimbly construct efficient TensorFlow models; PyTorch, the leading alternative library, is also covered. You'll gain a pragmatic understanding of all major deep learning approaches and their uses in applications ranging from machine vision and natural language processing to image generation and game-playing algorithms. Discover what makes deep learning systems unique, and the implications for practitioners Explore new tools that make deep learning models easier to build, use, and improve Master essential theory: artificial neurons, training, optimization, convolutional nets, recurrent nets, generative adversarial networks (GANs), deep reinforcement learning, and more Walk through building interactive deep learning applications, and move forward with your own artificial intelligence projects Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Build neural network models in text, vision and advanced analytics using PyTorch  
Key Features Learn PyTorch for implementing cutting-edge deep learning algorithms. Train your neural networks for higher speed and flexibility and learn how to implement them in various scenarios; Cover various advanced neural

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network architecture such as ResNet, Inception, DenseNet and more with practical examples; Book Description Deep learning powers the most intelligent systems in the world, such as Google Voice, Siri, and Alexa. Advancements in powerful hardware, such as GPUs, software frameworks such as PyTorch, Keras, Tensorflow, and CNTK along with the availability of big data have made it easier to implement solutions to problems in the areas of text, vision, and advanced analytics. This book will get you up and running with one of the most cutting-edge deep learning libraries—PyTorch. PyTorch is grabbing the attention of deep learning researchers and data science professionals due to its accessibility, efficiency and being more native to Python way of development. You'll start off by installing PyTorch, then quickly move on to learn various fundamental blocks that power modern deep learning. You will also learn how to use CNN, RNN, LSTM and other networks to solve real-world problems. This book explains the concepts of various state-of-the-art deep learning architectures, such as ResNet, DenseNet, Inception, and Seq2Seq, without diving deep into the math behind them. You will also learn about GPU computing during the course of the book. You will see how to train a model with PyTorch and dive into complex neural networks such as generative networks for producing text and images. By the end of the book, you'll be able to implement

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deep learning applications in PyTorch with ease. What you will learn Use PyTorch for GPU-accelerated tensor computations Build custom datasets and data loaders for images and test the models using torchvision and torchtext Build an image classifier by implementing CNN architectures using PyTorch Build systems that do text classification and language modeling using RNN, LSTM, and GRU Learn advanced CNN architectures such as ResNet, Inception, Densenet, and learn how to use them for transfer learning Learn how to mix multiple models for a powerful ensemble model Generate new images using GAN's and generate artistic images using style transfer Who this book is for This book is for machine learning engineers, data analysts, data scientists interested in deep learning and are looking to explore implementing advanced algorithms in PyTorch. Some knowledge of machine learning is helpful but not a mandatory need. Working knowledge of Python programming is expected.

Analytical tools and algorithms are essential in business data and information systems. Efficient economic and financial forecasting in machine learning techniques increases gains while reducing risks. Providing research on predictive models with high accuracy, stability, and ease of interpretation is important in improving data preparation, analysis, and implementation processes in business organizations. Machine Learning Techniques for Improved Business Analytics is

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a collection of innovative research on the methods and applications of artificial intelligence in strategic business decisions and management. Featuring coverage on a broad range of topics such as data mining, portfolio optimization, and social network analysis, this book is ideally designed for business managers and practitioners, upper-level business students, and researchers seeking current research on large-scale information control and evaluation technologies that exceed the functionality of conventional data processing techniques.

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

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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.

"Business executives and entrepreneurs keen on cutting through the hype surrounding deep learning will benefit from this course detailing how top players across a variety of industries deploy deep learning for real world purposes and real world revenues. Concrete examples provide practical guidance on strategy, business models, implementation considerations, privacy and ethics, and

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evolving trends related to Big Data, data analytics, machine learning, artificial intelligence, and more. With the information included in this course, the strategic decision maker will be able to connect deep learning with their particular industry and business."--Resource description page.

Artificial Intelligence and Machine Learning in Business Management The focus of this book is to introduce artificial intelligence (AI) and machine learning (ML) technologies into the context of business management. The book gives insights into the implementation and impact of AI and ML to business leaders, managers, technology developers, and implementers. With the maturing use of AI or ML in the field of business intelligence, this book examines several projects with innovative uses of AI beyond data organization and access. It follows the Predictive Modeling Toolkit for providing new insight on how to use improved AI tools in the field of business. It explores cultural heritage values and risk assessments for mitigation and conservation and discusses on-shore and off-shore technological capabilities with spatial tools for addressing marketing and retail strategies, and insurance and healthcare systems. Taking a multidisciplinary approach for using AI, this book provides a single comprehensive reference resource for undergraduate, graduate, business professionals, and related disciplines.

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If you have ever wondered what drives the many tools we use every day, then keep reading. The Fourth Industrial Revolution is led by Artificial Intelligence technology and setting the humankind for a global social transformation. The powerful applications of AI have already transformed our daily lives. Tools such as virtual personal and home assistants (like Siri in Apple Pods and Alexa in Amazon Echo) have become everyday usage products. Artificial Intelligence and Machine Learning are closely related. They have become an important part of scientific study. Not only does it involve the study of statistical models and algorithms, but also the systems used for task performance. Our aim with this book is to provide you a 360 view of the fundamentals and importance of Machine Learning Technology for the beginners' level. You Will Learn: The Fundamentals and Concepts of Artificial Intelligence in 2020 The Technology behind AI, and its Rapid growth and Evolution The Advantages and Disadvantages of Artificial Intelligence How AI Helps Business The Importance of Deep Learning Today How the Fields of Data Science and Its Many Applications Helps Your Business Computer Science and Its Applications in Real World Basic Terminology Used in Artificial Intelligence As we cover the basics of Machine Learning and Artificial Intelligence, you will be glad to know that it can be understood and processed on the beginners' level. Even though it may seem to

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have some big words. Would You Like to Know More? Get This book Today to know how Machine Learning is changing our world.

Take a hands-on approach to understanding deep learning and build smart applications that can recognize images and interpret text

### Key Features

Understand how to implement deep learning with TensorFlow and Keras Learn the fundamentals of computer vision and image recognition Study the architecture of different neural networks

### Book Description

Are you fascinated by how deep learning powers intelligent applications such as self-driving cars, virtual assistants, facial recognition devices, and chatbots to process data and solve complex problems? Whether you are familiar with machine learning or are new to this domain, The Deep Learning Workshop will make it easy for you to understand deep learning with the help of interesting examples and exercises throughout. The book starts by highlighting the relationship between deep learning, machine learning, and artificial intelligence and helps you get comfortable with the TensorFlow 2.0 programming structure using hands-on exercises. You'll understand neural networks, the structure of a perceptron, and how to use TensorFlow to create and train models. The book will then let you explore the fundamentals of computer vision by performing image recognition exercises with convolutional neural networks (CNNs) using Keras. As you

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advance, you'll be able to make your model more powerful by implementing text embedding and sequencing the data using popular deep learning solutions. Finally, you'll get to grips with bidirectional recurrent neural networks (RNNs) and build generative adversarial networks (GANs) for image synthesis. By the end of this deep learning book, you'll have learned the skills essential for building deep learning models with TensorFlow and Keras. What you will learn Understand how deep learning, machine learning, and artificial intelligence are different Develop multilayer deep neural networks with TensorFlow Implement deep neural networks for multiclass classification using Keras Train CNN models for image recognition Handle sequence data and use it in conjunction with RNNs Build a GAN to generate high-quality synthesized images Who this book is for If you are interested in machine learning and want to create and train deep learning models using TensorFlow and Keras, this workshop is for you. A solid understanding of Python and its packages, along with basic machine learning concepts, will help you to learn the topics quickly.

This is the first rigorous, self-contained treatment of the theory of deep learning. Starting with the foundations of the theory and building it up, this is essential reading for any scientists, instructors, and students interested in artificial intelligence and deep learning. It provides guidance on how to think about

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scientific questions, and leads readers through the history of the field and its fundamental connections to neuroscience. The author discusses many applications to beautiful problems in the natural sciences, in physics, chemistry, and biomedicine. Examples include the search for exotic particles and dark matter in experimental physics, the prediction of molecular properties and reaction outcomes in chemistry, and the prediction of protein structures and the diagnostic analysis of biomedical images in the natural sciences. The text is accompanied by a full set of exercises at different difficulty levels and encourages out-of-the-box thinking.

### Machine Learning for Business Using Amazon SageMaker and Jupyter

Simon and Schuster

Learn the ropes of supervised machine learning with R by studying popular real-world use-cases, and understand how it drives object detection in driverless cars, customer churn, and loan default prediction. Key Features Study supervised learning algorithms by using real-world datasets Fine tune optimal parameters with hyperparameter optimization Select the best algorithm using the model evaluation framework Book Description R provides excellent visualization features that are essential for exploring data before using it in automated learning. Applied Supervised Learning with R helps you cover the complete

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process of employing R to develop applications using supervised machine learning algorithms for your business needs. The book starts by helping you develop your analytical thinking to create a problem statement using business inputs and domain research. You will then learn different evaluation metrics that compare various algorithms, and later progress to using these metrics to select the best algorithm for your problem. After finalizing the algorithm you want to use, you will study the hyperparameter optimization technique to fine-tune your set of optimal parameters. To prevent you from overfitting your model, a dedicated section will even demonstrate how you can add various regularization terms. By the end of this book, you will have the advanced skills you need for modeling a supervised machine learning algorithm that precisely fulfills your business needs.

What you will learn

- Develop analytical thinking to precisely identify a business problem
- Wrangle data with dplyr, tidyr, and reshape2
- Visualize data with ggplot2
- Validate your supervised machine learning model using k-fold
- Optimize hyperparameters with grid and random search, and Bayesian optimization
- Deploy your model on Amazon Web Services (AWS) Lambda with plumber
- Improve your model's performance with feature selection and dimensionality reduction

Who this book is for

This book is specially designed for novice and intermediate-level data analysts, data scientists, and data engineers who want to

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explore different methods of supervised machine learning and its various use cases. Some background in statistics, probability, calculus, linear algebra, and programming will help you thoroughly understand and follow the content of this book.

"What does AI mean for your business? Read this book to find out." -- Hal Varian, Chief Economist, Google Artificial intelligence does the seemingly impossible, magically bringing machines to life--driving cars, trading stocks, and teaching children. But facing the sea change that AI will bring can be paralyzing. How should companies set strategies, governments design policies, and people plan their lives for a world so different from what we know? In the face of such uncertainty, many analysts either cower in fear or predict an impossibly sunny future. But in *Prediction Machines*, three eminent economists recast the rise of AI as a drop in the cost of prediction. With this single, masterful stroke, they lift the curtain on the AI-is-magic hype and show how basic tools from economics provide clarity about the AI revolution and a basis for action by CEOs, managers, policy makers, investors, and entrepreneurs. When AI is framed as cheap prediction, its extraordinary potential becomes clear: Prediction is at the heart of making decisions under uncertainty. Our businesses and personal lives are riddled with such decisions. Prediction tools increase productivity--operating

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machines, handling documents, communicating with customers. Uncertainty constrains strategy. Better prediction creates opportunities for new business structures and strategies to compete. Penetrating, fun, and always insightful and practical, Prediction Machines follows its inescapable logic to explain how to navigate the changes on the horizon. The impact of AI will be profound, but the economic framework for understanding it is surprisingly simple.

Create learning experiences that transform not only learning, but life itself. Learn about, improve, and expand your world of learning. This hands-on companion to the runaway best-seller, Deep Learning: Engage the World Change the World, provides an essential roadmap for building capacity in teachers, schools, districts, and systems to design deep learning, measure progress, and assess conditions needed to activate and sustain innovation. Loaded with tips, tools, protocols, and real-world examples, the easy-to-use guide has everything educators need to construct and drive meaningful deep learning experiences that give purpose, unleash student potential, and prepare students to become problem-solving change agents in a global society.

Deep Learning with Structured Data teaches you powerful data analysis techniques for tabular data and relational databases. Summary Deep learning offers the potential to identify complex patterns and relationships hidden in data

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of all sorts. Deep Learning with Structured Data shows you how to apply powerful deep learning analysis techniques to the kind of structured, tabular data you'll find in the relational databases that real-world businesses depend on. Filled with practical, relevant applications, this book teaches you how deep learning can augment your existing machine learning and business intelligence systems. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Here's a dirty secret: Half of the time in most data science projects is spent cleaning and preparing data. But there's a better way: Deep learning techniques optimized for tabular data and relational databases deliver insights and analysis without requiring intense feature engineering. Learn the skills to unlock deep learning performance with much less data filtering, validating, and scrubbing. About the book Deep Learning with Structured Data teaches you powerful data analysis techniques for tabular data and relational databases. Get started using a dataset based on the Toronto transit system. As you work through the book, you'll learn how easy it is to set up tabular data for deep learning, while solving crucial production concerns like deployment and performance monitoring. What's inside When and where to use deep learning The architecture of a Keras deep learning model Training, deploying, and maintaining models Measuring performance About the reader For

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readers with intermediate Python and machine learning skills. About the author Mark Ryan is a Data Science Manager at Intact Insurance. He holds a Master's degree in Computer Science from the University of Toronto. Table of Contents 1 Why deep learning with structured data? 2 Introduction to the example problem and Pandas dataframes 3 Preparing the data, part 1: Exploring and cleansing the data 4 Preparing the data, part 2: Transforming the data 5 Preparing and building the model 6 Training the model and running experiments 7 More experiments with the trained model 8 Deploying the model 9 Recommended next steps

"This book covers applications of artificial neural networks (ANN) and machine learning (ML) aspects of artificial intelligence to applications to the biomedical and business world including their interface to applications for screening for diseases to applications to large-scale credit card purchasing patterns"--

Machine Learning and Artificial Intelligence in Marketing and Sales explores the ideas, and the statistical and mathematical concepts, behind Artificial Intelligence (AI) and machine learning models, as applied to marketing and sales, without getting lost in the details of mathematical derivations and computer programming.

"We finally have the definitive treatise on PyTorch! It covers the basics and abstractions in great detail. I hope this book becomes your extended reference document." —Soumith Chintala, co-creator of PyTorch Key Features Written by

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PyTorch's creator and key contributors Develop deep learning models in a familiar Pythonic way Use PyTorch to build an image classifier for cancer detection Diagnose problems with your neural network and improve training with data augmentation Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Every other day we hear about new ways to put deep learning to good use: improved medical imaging, accurate credit card fraud detection, long range weather forecasting, and more. PyTorch puts these superpowers in your hands. Instantly familiar to anyone who knows Python data tools like NumPy and Scikit-learn, PyTorch simplifies deep learning without sacrificing advanced features. It's great for building quick models, and it scales smoothly from laptop to enterprise. Deep Learning with PyTorch teaches you to create deep learning and neural network systems with PyTorch. This practical book gets you to work right away building a tumor image classifier from scratch. After covering the basics, you'll learn best practices for the entire deep learning pipeline, tackling advanced projects as your PyTorch skills become more sophisticated. All code samples are easy to explore in downloadable Jupyter notebooks. What You Will Learn Understanding deep learning data structures such as tensors and neural networks Best practices for the PyTorch Tensor API, loading data in Python, and visualizing results

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Implementing modules and loss functions Utilizing pretrained models from PyTorch Hub Methods for training networks with limited inputs Sifting through unreliable results to diagnose and fix problems in your neural network Improve your results with augmented data, better model architecture, and fine tuning This Book Is Written For For Python programmers with an interest in machine learning. No experience with PyTorch or other deep learning frameworks is required. About The Authors Eli Stevens has worked in Silicon Valley for the past 15 years as a software engineer, and the past 7 years as Chief Technical Officer of a startup making medical device software. Luca Antiga is co-founder and CEO of an AI engineering company located in Bergamo, Italy, and a regular contributor to PyTorch. Thomas Viehmann is a Machine Learning and PyTorch speciality trainer and consultant based in Munich, Germany and a PyTorch core developer.

Table of Contents PART 1 - CORE PYTORCH 1 Introducing deep learning and the PyTorch Library 2 Pretrained networks 3 It starts with a tensor 4 Real-world data representation using tensors 5 The mechanics of learning 6 Using a neural network to fit the data 7 Telling birds from airplanes: Learning from images 8 Using convolutions to generalize PART 2 - LEARNING FROM IMAGES IN THE REAL WORLD: EARLY DETECTION OF LUNG CANCER 9 Using PyTorch to fight cancer 10 Combining data sources into a unified dataset 11 Training a

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classification model to detect suspected tumors 12 Improving training with metrics and augmentation 13 Using segmentation to find suspected nodules 14 End-to-end nodule analysis, and where to go next PART 3 - DEPLOYMENT 15 Deploying to production

This book presents a compilation of selected papers from the 17th IEEE International Conference on Machine Learning and Applications (IEEE ICMLA 2018), focusing on use of deep learning technology in application like game playing, medical applications, video analytics, regression/classification, object detection/recognition and robotic control in industrial environments. It highlights novel ways of using deep neural networks to solve real-world problems, and also offers insights into deep learning architectures and algorithms, making it an essential reference guide for academic researchers, professionals, software engineers in industry, and innovative product developers.

Deep Learning in Practice helps you learn how to develop and optimize a model for your projects using Deep Learning (DL) methods and architectures. Key features: Demonstrates a quick review on Python, NumPy, and TensorFlow fundamentals. Explains and provides examples of deploying TensorFlow and Keras in several projects. Explains the fundamentals of Artificial Neural Networks (ANNs). Presents several examples and applications of ANNs. Learning the most popular DL algorithms features. Explains and provides examples for the DL algorithms that are presented in this book. Analyzes the DL network's parameter and hyperparameters. Reviews state-of-the-art DL examples. Necessary and main steps for DL modeling. Implements a Virtual Assistant Robot (VAR) using DL methods. Necessary and

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fundamental information to choose a proper DL algorithm. Gives instructions to learn how to optimize your DL model IN PRACTICE. This book is useful for undergraduate and graduate students, as well as practitioners in industry and academia. It will serve as a useful reference for learning deep learning fundamentals and implementing a deep learning model for any project, step by step.

?This book includes 2 Manuscripts? Are you looking for new ways to grow your business, with resources you already have? Do you want to know how the big players like Netflix, Amazon, or Shopify use data analytics to MULTIPLY their growth? Keep listening to learn how to use data analytics to maximize YOUR business.

Summary Deep Learning with R introduces the world of deep learning using the powerful Keras library and its R language interface. The book builds your understanding of deep learning through intuitive explanations and practical examples. Continue your journey into the world of deep learning with Deep Learning with R in Motion, a practical, hands-on video course available exclusively at Manning.com ([www.manning.com/livevideo/deep-?learning-with-r-in-motion](http://www.manning.com/livevideo/deep-?learning-with-r-in-motion)). Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Machine learning has made remarkable progress in recent years. Deep-learning systems now enable previously impossible smart applications, revolutionizing image recognition and natural-language processing, and identifying complex patterns in data. The Keras deep-learning library provides data scientists and developers working in R a state-of-the-art toolset for tackling deep-learning tasks. About the Book Deep Learning with R introduces the world of deep learning using the powerful Keras library and its R language interface. Initially written for Python as Deep Learning with Python

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by Keras creator and Google AI researcher François Chollet and adapted for R by RStudio founder J. J. Allaire, this book builds your understanding of deep learning through intuitive explanations and practical examples. You'll practice your new skills with R-based applications in computer vision, natural-language processing, and generative models. What's Inside Deep learning from first principles Setting up your own deep-learning environment Image classification and generation Deep learning for text and sequences About the Reader You'll need intermediate R programming skills. No previous experience with machine learning or deep learning is assumed. About the Authors François Chollet is a deep-learning researcher at Google and the author of the Keras library. J.J. Allaire is the founder of RStudio and the author of the R interfaces to TensorFlow and Keras. Table of Contents PART 1 - FUNDAMENTALS OF DEEP LEARNING What is deep learning? Before we begin: the mathematical building blocks of neural networks Getting started with neural networks Fundamentals of machine learning PART 2 - DEEP LEARNING IN PRACTICE Deep learning for computer vision Deep learning for text and sequences Advanced deep-learning best practices Generative deep learning Conclusions

Artificial Intelligence (AI), when incorporated with machine learning and deep learning algorithms, has a wide variety of applications today. This book focuses on the implementation of various elementary and advanced approaches in AI that can be used in various domains to solve real-time decision-making problems. The book focuses on concepts and techniques used to run tasks in an automated manner. It discusses computational intelligence in the detection and diagnosis of clinical and biomedical images, covers the automation of a system through machine learning and deep learning approaches, presents data analytics and mining for

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decision-support applications, and includes case-based reasoning, natural language processing, computer vision, and AI approaches in real-time applications. Academic scientists, researchers, and students in the various domains of computer science engineering, electronics and communication engineering, and information technology, as well as industrial engineers, biomedical engineers, and management, will find this book useful. By the end of this book, you will understand the fundamentals of AI. Various case studies will develop your adaptive thinking to solve real-time AI problems. Features Includes AI-based decision-making approaches Discusses computational intelligence in the detection and diagnosis of clinical and biomedical images Covers automation of systems through machine learning and deep learning approaches and its implications to the real world Presents data analytics and mining for decision-support applications Offers case-based reasoning

?? "Embrace artificial intelligence or be replaced by it." ?? "AI is a new electricity." Andrew Ng ?Have you ever thought that if AI is the new electricity, why does it not quickly inspire Managers/Leaders/C-Suites? ?If business leaders do not act, they must be prepared to lag behind competitors who adopt new technologies. ?Managers/Leaders/C-Suites and others who are willing to feel the spark of AI, should learn and understand AI immediately to know what AI can do and what it cannot. ?Did you know that AI is changing our world faster than we think? Artificial intelligence will affect all areas of life in ways we cannot even predict, whether we like it or not. According to research done by PricewaterhouseCoopers (PwC), by 2030, artificial intelligence can contribute up to US\$15.7 trillion to the global economy, so the opportunities for implementing and learning AI are huge. ? Companies that do not use AI will soon become obsolete. From making faster and better decisions to automating rote memorization to enabling

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robots to respond to emotions, artificial intelligence and machine learning have been reshaping business and society. ? Not investing in the organizational and technical requirements of adopting AI may mean that they are far behind and unable to compete in the future. ? Business is changing. Will you adapt or fall behind? Accelerate and deepen your understanding of the themes that shape the company's future. ? This book is suitable for business executives, business managers, business leaders, senior managers, technical leaders, students, and many people who want to understand artificial intelligence. ? It will take you to learn the concepts of machine learning, artificial intelligence and deep learning, more and how to use them to influence your business. ?? Even if you do not have technical knowledge, you will understand AI, ML and its implementation. ?? Key features ?? nbsp; ? A must book for the business leader to understand AI and its application ? Understand strategy behind AI implementation ? Zero coding with simple explanation ? A straightforward explanation for important algorithms like TensorFlow, NLP, K-Means, Support Vector Machine, Supervised Learning, Unsupervised Learning, Ensemble Techniques, Regression, Clustering, and many more ?? Grab your copy of this book to build artificial intelligence for business and stand to the best of times!

Summary Imagine predicting which customers are thinking about switching to a competitor or flagging potential process failures before they happen Think about the benefits of forecasting tedious business processes and back-office tasks Envision quickly gauging customer sentiment from social media content (even large volumes of it). Consider the competitive advantage of making decisions when you know the most likely future events Machine learning can deliver these and other advantages to your business, and it's never been easier to get

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started! Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Machine learning can deliver huge benefits for everyday business tasks. With some guidance, you can get those big wins yourself without complex math or highly paid consultants! If you can crunch numbers in Excel, you can use modern ML services to efficiently direct marketing dollars, identify and keep your best customers, and optimize back office processes. This book shows you how. About the book Machine Learning for Business teaches business-oriented machine learning techniques you can do yourself. Concentrating on practical topics like customer retention, forecasting, and back office processes, you'll work through six projects that help you form an ML-for-business mindset. To guarantee your success, you'll use the Amazon SageMaker ML service, which makes it a snap to turn your questions into results. What's inside Identifying tasks suited to machine learning Automating back office processes Using open source and cloud-based tools Relevant case studies About the reader For technically inclined business professionals or business application developers. About the author Doug Hudgeon and Richard Nichol specialize in maximizing the value of business data through AI and machine learning for companies of any size. Table of Contents: PART 1 MACHINE LEARNING FOR BUSINESS 1 | How machine learning applies to your business PART 2 SIX SCENARIOS: MACHINE LEARNING FOR BUSINESS 2 | Should you send a purchase order to a technical approver? 3 | Should you call a customer because they are at risk of churning? 4 | Should an incident be escalated to your support team? 5 | Should you question an invoice sent by a supplier? 6 | Forecasting your company's monthly power usage 7 | Improving your company's monthly power usage forecast PART 3 MOVING MACHINE LEARNING INTO PRODUCTION 8 |

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Serving predictions over the web 9 | Case studies

Artificial Intelligence (AI) and Machine Learning are now mainstream business tools. They are being applied across many industries to increase profits, reduce costs, save lives and improve customer experiences. Organizations which understand these tools and know how to use them are benefiting at the expense of their rivals. Artificial Intelligence and Machine Learning for Business cuts through the hype and technical jargon that is often associated with these subjects. It delivers a simple and concise introduction for managers and business people. The focus is very much on practical application and how to work with technical specialists (data scientists) to maximize the benefits of these technologies. This third edition has been substantially revised and updated. It contains several new chapters and covers a broader set of topics than before, but retains the no-nonsense style of the original.

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