DEEP LEARNING
with Python

THIRD EDITION

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[Manning Deep Learning With Python](#)

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Manning Deep Learning With Python:

   Deep Learning with R Francois Chollet,J.j. Allaire,2018 Introduces deep learning systems using the powerful Keras library and its R language interface The book builds your understanding of deep learning through intuitive explanations and practical examples   **Deep Learning with Python** Francois Chollet,2017-11-30 Summary Deep Learning with Python introduces the field of deep learning using the Python language and the powerful Keras library Written by Keras creator and Google AI researcher Fran ois Chollet this book builds your understanding through intuitive explanations and practical examples 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 We went from near unusable speech and image recognition to near human accuracy We went from machines that couldn t beat a serious Go player to defeating a world champion Behind this progress is deep learning a combination of engineering advances best practices and theory that enables a wealth of previously impossible smart applications About the Book Deep Learning with Python introduces the field of deep learning using the Python language and the powerful Keras library Written by Keras creator and Google AI researcher Fran ois Chollet this book builds your understanding through intuitive explanations and practical examples You ll explore challenging concepts and practice with applications in computer vision natural language processing and generative models By the time you finish you ll have the knowledge and hands on skills to apply deep learning in your own projects What s Inside Deep learning from first principles Setting up your own deep learning environment Image classification models Deep learning for text and sequences Neural style transfer text generation and image generation About the Reader Readers need intermediate Python skills No previous experience with Keras TensorFlow or machine learning is required About the Author Fran ois Chollet works on deep learning at Google in Mountain View CA He is the creator of the Keras deep learning library as well as a contributor to the TensorFlow machine learning framework He also does deep learning research with a focus on computer vision and the application of machine learning to formal reasoning His papers have been published at major conferences in the field including the Conference on Computer Vision and Pattern Recognition CVPR the Conference and Workshop on Neural Information Processing Systems NIPS the International Conference on Learning Representations ICLR and others 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 appendix A Installing Keras and its dependencies on Ubuntu appendix B Running Jupyter notebooks on an EC2 GPU instance   **Deep Learning with R** François Chollet,2018-01-22 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 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 by Keras creator and Google AI researcher Fran ois 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 Fran ois 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 **Intelligent Systems** Rosiane de Freitas,Diego Furtado,2026-03-02 The four volume set LNAI 16179 16182 constitutes the refereed proceedings of the 35th Brazilian Conference on Intelligent Systems BRACIS 2025 held in Fortaleza CE Brazil during September 29 October 2 2025 The 147 full papers included in these volumes were carefully reviewed and selected from 393 submissions They were organized in three key tracks 82 articles in the main track showcasing cutting edge AI methods and solid results 27 articles in the AI for Social Good track featuring innovative applications of AI for societal benefit using established methodologies and 38 articles in other AI applications presenting novel applications using established AI methods naturally considering the ethical aspects of the application

Metabolic Pathway Design Pablo Carbonell,2019-11-05 This textbook presents solid tools for in silico engineering biology offering students a step by step guide to mastering the smart design of metabolic pathways The first part explains the Design Build Test Learn cycle engineering approach to biology discussing the basic tools to model biological and chemistry based systems Using these basic tools the second part focuses on various computational protocols for metabolic pathway design from enzyme selection to pathway discovery and enumeration In the context of industrial biotechnology the final part helps

readers understand the challenges of scaling up and optimisation By working with the free programming language Scientific Python this book provides easily accessible tools for studying and learning the principles of modern in silico metabolic pathway design Intended for advanced undergraduates and master s students in biotechnology biomedical engineering bioinformatics and systems biology students the introductory sections make it also useful for beginners wanting to learn the basics of scientific coding and find real world hands on examples   Deep Learning with Python François Chollet,2018

Deep Reinforcement Learning in Action Brandon Brown,Alexander Zai,2020-03-16 Summary Humans learn best from feedback we are encouraged to take actions that lead to positive results while deterred by decisions with negative consequences This reinforcement process can be applied to computer programs allowing them to solve more complex problems that classical programming cannot Deep Reinforcement Learning in Action teaches you the fundamental concepts and terminology of deep reinforcement learning along with the practical skills and techniques you ll need to implement it into your own projects Purchase of the print book includes a free eBook in PDF Kindle and ePub formats from Manning Publications About the technology Deep reinforcement learning AI systems rapidly adapt to new environments a vast improvement over standard neural networks A DRL agent learns like people do taking in raw data such as sensor input and refining its responses and predictions through trial and error About the book Deep Reinforcement Learning in Action teaches you how to program AI agents that adapt and improve based on direct feedback from their environment In this example rich tutorial you ll master foundational and advanced DRL techniques by taking on interesting challenges like navigating a maze and playing video games Along the way you ll work with core algorithms including deep Q networks and policy gradients along with industry standard tools like PyTorch and OpenAI Gym What s inside Building and training DRL networks The most popular DRL algorithms for learning and problem solving Evolutionary algorithms for curiosity and multi agent learning All examples available as Jupyter Notebooks About the reader For readers with intermediate skills in Python and deep learning About the author Alexander Zai is a machine learning engineer at Amazon AI Brandon Brown is a machine learning and data analysis blogger Table of Contents PART 1 FOUNDATIONS 1 What is reinforcement learning 2 Modeling reinforcement learning problems Markov decision processes 3 Predicting the best states and actions Deep Q networks 4 Learning to pick the best policy Policy gradient methods 5 Tackling more complex problems with actor critic methods PART 2 ABOVE AND BEYOND 6 Alternative optimization methods Evolutionary algorithms 7 Distributional DQN Getting the full story 8 Curiosity driven exploration 9 Multi agent reinforcement learning 10 Interpretable reinforcement learning Attention and relational models 11 In conclusion A review and roadmap   **Handbook of HydroInformatics** Saeid Eslamian,Faezeh Eslamian,2022-11-30 Classic Soft Computing Techniques is the first volume of the three in the Handbook of HydroInformatics series Through this comprehensive 34 chapters work the contributors explore the difference between traditional computing also known as hard computing and soft computing which is based on the importance given to issues

like precision certainty and rigor The chapters go on to define fundamentally classic soft computing techniques such as Artificial Neural Network Fuzzy Logic Genetic Algorithm Supporting Vector Machine Ant Colony Based Simulation Bat Algorithm Decision Tree Algorithm Firefly Algorithm Fish Habitat Analysis Game Theory Hybrid Cuckoo Harmony Search Algorithm Honey Bee Mating Optimization Imperialist Competitive Algorithm Relevance Vector Machine etc It is a fully comprehensive handbook providing all the information needed around classic soft computing techniques This volume is a true interdisciplinary work and the audience includes postgraduates and early career researchers interested in Computer Science Mathematical Science Applied Science Earth and Geoscience Geography Civil Engineering Engineering Water Science Atmospheric Science Social Science Environment Science Natural Resources and Chemical Engineering Key insights from global contributors in the fields of data management research climate change and resilience insufficient data problem etc Offers applied examples and case studies in each chapter providing the reader with real world scenarios for comparison Introduces classic soft computing techniques necessary for a range of disciplines **Deep Learning Models for Economic Research** Andrzej Dudek,2025-10-21 In today s data driven world the ability to make sense of complex high dimensional datasets is crucial for economists and data scientists Traditional quantitative methods while powerful often struggle to keep up with the complexities of modern economic challenges This book bridges this gap integrating cutting edge machine learning techniques with established economic analysis to provide new more accurate insights The book offers a comprehensive approach to understanding and applying neural networks and deep learning models in the context of conducting economic research It starts by laying the groundwork with essential quantitative methods such as cluster analysis regression and factor analysis then demonstrates how these can be enhanced with deep learning techniques like recurrent neural networks RNNs convolutional neural networks CNNs and transformers By guiding readers through real world examples complete with Python code and access to datasets it showcases the practical benefits of neural networks in solving complex economic problems such as fraud detection sentiment analysis stock price forecasting and inflation factor analysis Importantly the book also addresses critical concerns about the black box nature of deep learning offering interpretability techniques like Local Interpretable Model agnostic Explanations LIME and SHapley Additive exPlanations SHAP to demystify model predictions The book is essential reading for economists data scientists and professionals looking to deepen their understanding of AI s role in economic modeling It is also an accessible resource for non experts interested in how machine learning is transforming economic analysis **The Quick Python Book** Naomi Ceder,2018-05-03 Summary This third revision of Manning s popular The Quick Python Book offers a clear crisp updated introduction to the elegant Python programming language and its famously easy to read syntax Written for programmers new to Python this latest edition includes new exercises throughout It covers features common to other languages concisely while introducing Python s comprehensive standard functions library and unique features in detail Foreword by Nicholas Tollervey Python Software

Foundation Purchase of the print book includes a free eBook in PDF Kindle and ePub formats from Manning Publications About the Technology Initially Guido van Rossum s 1989 holiday project Python has grown into an amazing computer language It s a joy to learn and read and powerful enough to handle everything from low level system resources to advanced applications like deep learning Elegantly simple and complete it also boasts a massive ecosystem of libraries and frameworks Python programmers are in high demand mdash you can t afford not to be fluent About the Book The Quick Python Book Third Edition is a comprehensive guide to the Python language by a Python authority Naomi Ceder With the personal touch of a skilled teacher she beautifully balances details of the language with the insights and advice you need to handle any task Extensive relevant examples and learn by doing exercises help you master each important concept the first time through Whether you re scraping websites or playing around with nested tuples you ll appreciate this book s clarity focus and attention to detail What s Inside Clear coverage of Python 3 Core libraries packages and tools In depth exercises Five new data science related chapters About the Reader Written for readers familiar with programming concepts no Python experience assumed About the Author Naomi Ceder is chair of the Python Software Foundation She has been learning using and teaching Python since 2001 Table of Contents PART 1 STARTING OUT 1 About Python 2 Getting started 3 The Quick Python overview PART 2 THE ESSENTIALS 4 The absolute basics 5 Lists tuples and sets 6 Strings 7 Dictionaries 8 Control flow 9 Functions 10 Modules and scoping rules 11 Python programs 12 Using the filesystem 13 Reading and writing files 14 Exceptions PART 3 ADVANCED LANGUAGE FEATURES 15 Classes and object oriented programming 16 Regular expressions 17 Data types as objects 18 Packages 19 Using Python libraries PART 4 WORKING WITH DATA 20 Basic file wrangling 21 Processing data files 22 Data over the network 23 Saving data 24 Exploring data   **Deep Learning with Python Video Edition** François Chollet,2017 Deep Learning with Python introduces the field of deep learning using the Python language and the powerful Keras library Written by Keras creator and Google AI researcher Fran ois Chollet this book builds your understanding through intuitive explanations and practical examples Machine learning has made remarkable progress in recent years We went from near unusable speech and image recognition to near human accuracy We went from machines that couldn t beat a serious Go player to defeating a world champion Behind this progress is deep learning a combination of engineering advances best practices and theory that enables a wealth of previously impossible smart applications Resource description page   *Grokking Deep Reinforcement Learning* Miguel Morales,2020-11-10 Grokking Deep Reinforcement Learning uses engaging exercises to teach you how to build deep learning systems This book combines annotated Python code with intuitive explanations to explore DRL techniques You ll see how algorithms function and learn to develop your own DRL agents using evaluative feedback Summary We all learn through trial and error We avoid the things that cause us to experience pain and failure We embrace and build on the things that give us reward and success This common pattern is the foundation of deep reinforcement learning building machine learning systems that explore and learn based on the responses

of the environment Grokking Deep Reinforcement Learning introduces this powerful machine learning approach using examples illustrations exercises and crystal clear teaching You ll love the perfectly paced teaching and the clever engaging writing style as you dig into this awesome exploration of reinforcement learning fundamentals effective deep learning techniques and practical applications in this emerging field Purchase of the print book includes a free eBook in PDF Kindle and ePub formats from Manning Publications About the technology We learn by interacting with our environment and the rewards or punishments we experience guide our future behavior Deep reinforcement learning brings that same natural process to artificial intelligence analyzing results to uncover the most efficient ways forward DRL agents can improve marketing campaigns predict stock performance and beat grand masters in Go and chess About the book Grokking Deep Reinforcement Learning uses engaging exercises to teach you how to build deep learning systems This book combines annotated Python code with intuitive explanations to explore DRL techniques You ll see how algorithms function and learn to develop your own DRL agents using evaluative feedback What s inside An introduction to reinforcement learning DRL agents with human like behaviors Applying DRL to complex situations About the reader For developers with basic deep learning experience About the author Miguel Morales works on reinforcement learning at Lockheed Martin and is an instructor for the Georgia Institute of Technology s Reinforcement Learning and Decision Making course Table of Contents 1 Introduction to deep reinforcement learning 2 Mathematical foundations of reinforcement learning 3 Balancing immediate and long term goals 4 Balancing the gathering and use of information 5 Evaluating agents behaviors 6 Improving agents behaviors 7 Achieving goals more effectively and efficiently 8 Introduction to value based deep reinforcement learning 9 More stable value based methods 10 Sample efficient value based methods 11 Policy gradient and actor critic methods 12 Advanced actor critic methods 13 Toward artificial general intelligence *Machine Learning with TensorFlow, Second Edition* Chris Mattmann,2020-12-23 Updated with new code new projects and new chapters Machine Learning with TensorFlow Second Edition gives readers a solid foundation in machine learning concepts and the TensorFlow library Summary Updated with new code new projects and new chapters Machine Learning with TensorFlow Second Edition gives readers a solid foundation in machine learning concepts and the TensorFlow library Written by NASA JPL Deputy CTO and Principal Data Scientist Chris Mattmann all examples are accompanied by downloadable Jupyter Notebooks for a hands on experience coding TensorFlow with Python New and revised content expands coverage of core machine learning algorithms and advancements in neural networks such as VGG Face facial identification classifiers and deep speech classifiers Purchase of the print book includes a free eBook in PDF Kindle and ePub formats from Manning Publications About the technology Supercharge your data analysis with machine learning ML algorithms automatically improve as they process data so results get better over time You don t have to be a mathematician to use ML Tools like Google s TensorFlow library help with complex calculations so you can focus on getting the answers you need About the book Machine Learning with TensorFlow Second Edition is a

fully revised guide to building machine learning models using Python and TensorFlow You ll apply core ML concepts to real world challenges such as sentiment analysis text classification and image recognition Hands on examples illustrate neural network techniques for deep speech processing facial identification and auto encoding with CIFAR 10 What s inside Machine Learning with TensorFlow Choosing the best ML approaches Visualizing algorithms with TensorBoard Sharing results with collaborators Running models in Docker About the reader Requires intermediate Python skills and knowledge of general algebraic concepts like vectors and matrices Examples use the super stable 1 15 x branch of TensorFlow and TensorFlow 2 x About the author Chris Mattmann is the Division Manager of the Artificial Intelligence Analytics and Innovation Organization at NASA Jet Propulsion Lab The first edition of this book was written by Nishant Shukla with Kenneth Fricklas Table of Contents PART 1 YOUR MACHINE LEARNING RIG 1 A machine learning odyssey 2 TensorFlow essentials PART 2 CORE LEARNING ALGORITHMS 3 Linear regression and beyond 4 Using regression for call center volume prediction 5 A gentle introduction to classification 6 Sentiment classification Large movie review dataset 7 Automatically clustering data 8 Inferring user activity from Android accelerometer data 9 Hidden Markov models 10 Part of speech tagging and word sense disambiguation PART 3 THE NEURAL NETWORK PARADIGM 11 A peek into autoencoders 12 Applying autoencoders The CIFAR 10 image dataset 13 Reinforcement learning 14 Convolutional neural networks 15 Building a real world CNN VGG Face ad VGG Face Lite 16 Recurrent neural networks 17 LSTMs and automatic speech recognition 18 Sequence to sequence models for chatbots 19 Utility landscape   *Natural Language Processing in Action* Hannes Hapke,Cole Howard,Hobson Lane,2019-03-16 Summary Natural Language Processing in Action is your guide to creating machines that understand human language using the power of Python with its ecosystem of packages dedicated to NLP and AI Purchase of the print book includes a free eBook in PDF Kindle and ePub formats from Manning Publications About the Technology Recent advances in deep learning empower applications to understand text and speech with extreme accuracy The result Chatbots that can imitate real people meaningful resume to job matches superb predictive search and automatically generated document summaries all at a low cost New techniques along with accessible tools like Keras and TensorFlow make professional quality NLP easier than ever before About the Book Natural Language Processing in Action is your guide to building machines that can read and interpret human language In it you ll use readily available Python packages to capture the meaning in text and react accordingly The book expands traditional NLP approaches to include neural networks modern deep learning algorithms and generative techniques as you tackle real world problems like extracting dates and names composing text and answering free form questions What s inside Some sentences in this book were written by NLP Can you guess which ones Working with Keras TensorFlow gensim and scikit learn Rule based and data based NLP Scalable pipelines About the Reader This book requires a basic understanding of deep learning and intermediate Python skills About the Author Hobson Lane Cole Howard and Hannes Max Hapke are experienced NLP engineers who use these techniques in production

Table of Contents PART 1 WORDY MACHINES Packets of thought NLP overview Build your vocabulary word tokenization Math with words TF IDF vectors Finding meaning in word counts semantic analysis PART 2 DEEPER LEARNING NEURAL NETWORKS Baby steps with neural networks perceptrons and backpropagation Reasoning with word vectors Word2vec Getting words in order with convolutional neural networks CNNs Loopy recurrent neural networks RNNs Improving retention with long short term memory networks Sequence to sequence models and attention PART 3 GETTING REAL REAL WORLD NLP CHALLENGES Information extraction named entity extraction and question answering Getting chatty dialog engines Scaling up optimization parallelization and batch processing **Machine Learning in Clinical Neuroscience** Victor E. Staartjes,Luca Regli,Carlo Serra,2021-12-03 This book bridges the gap between data scientists and clinicians by introducing all relevant aspects of machine learning in an accessible way and will certainly foster new and serendipitous applications of machine learning in the clinical neurosciences Building from the ground up by communicating the foundational knowledge and intuitions first before progressing to more advanced and specific topics the book is well suited even for clinicians without prior machine learning experience Authored by a wide array of experienced global machine learning groups the book is aimed at clinicians who are interested in mastering the basics of machine learning and who wish to get started with their own machine learning research The volume is structured in two major parts The first uniquely introduces all major concepts in clinical machine learning from the ground up and includes step by step instructions on how to correctly develop and validate clinical prediction models It also includes methodological and conceptual foundations of other applications of machine learning in clinical neuroscience such as applications of machine learning to neuroimaging natural language processing and time series analysis The second part provides an overview of some state of the art applications of these methodologies The Machine Intelligence in Clinical Neuroscience MICN Laboratory at the Department of Neurosurgery of the University Hospital Zurich studies clinical applications of machine intelligence to improve patient care in clinical neuroscience The group focuses on diagnostic prognostic and predictive analytics that aid in decision making by increasing objectivity and transparency to patients Other major interests of our group members are in medical imaging and intraoperative applications of machine vision **Python for Programmers** Paul Deitel,Harvey Deitel,2019-03-15 The professional programmer s Deitel guide to Python with introductory artificial intelligence case studies Written for programmers with a background in another high level language Python for Programmers uses hands on instruction to teach today s most compelling leading edge computing technologies and programming in Python one of the world s most popular and fastest growing languages Please read the Table of Contents diagram inside the front cover and the Preface for more details In the context of 500 real world examples ranging from individual snippets to 40 large scripts and full implementation case studies you ll use the interactive IPython interpreter with code in Jupyter Notebooks to quickly master the latest Python coding idioms After covering Python Chapters 1 5 and a few key parts of Chapters 6 7 you ll be able to handle significant

portions of the hands on introductory AI case studies in Chapters 11 16 which are loaded with cool powerful contemporary examples These include natural language processing data mining Twitter for sentiment analysis cognitive computing with IBM WatsonTM supervised machine learning with classification and regression unsupervised machine learning with clustering computer vision through deep learning and convolutional neural networks deep learning with recurrent neural networks big data with Hadoop SparkTM and NoSQL databases the Internet of Things and more You ll also work directly or indirectly with cloud based services including Twitter Google TranslateTM IBM Watson Microsoft Azure OpenMapQuest PubNub and more Features 500 hands on real world live code examples from snippets to case studies IPython code in Jupyter Notebooks Library focused Uses Python Standard Library and data science libraries to accomplish significant tasks with minimal code Rich Python coverage Control statements functions strings files JSON serialization CSV exceptions Procedural functional style and object oriented programming Collections Lists tuples dictionaries sets NumPy arrays pandas Series DataFrames Static dynamic and interactive visualizations Data experiences with real world datasets and data sources Intro to Data Science sections AI basic stats simulation animation random variables data wrangling regression AI big data and cloud data science case studies NLP data mining Twitter IBM WatsonTM machine learning deep learning computer vision Hadoop SparkTM NoSQL IoT Open source libraries NumPy pandas Matplotlib Seaborn Folium SciPy NLTK TextBlob spaCy Textatistic Tweepy scikit learn Keras and more Accompanying code examples are available here http ptgmedia pearsoncmg com imprint_downloads informit bookreg 9780135224335 9780135224335_examples zip Register your product for convenient access to downloads updates and or corrections as they become available See inside book for more information

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distribution for different data types and discover Bayesian variants that can state their own uncertainty to increase accuracy This book provides easy to apply code and uses popular frameworks to keep you focused on practical applications What s inside Explore maximum likelihood and the statistical basis of deep learning Discover probabilistic models that can indicate possible outcomes Learn to use normalizing flows for modeling and generating complex distributions Use Bayesian neural networks to access the uncertainty in the model About the reader For experienced machine learning developers About the author Oliver D rr is a professor at the University of Applied Sciences in Konstanz Germany Beate Sick holds a chair for applied statistics at ZHAW and works as a researcher and lecturer at the University of Zurich Elvis Murina is a data scientist Table of Contents PART 1 BASICS OF DEEP LEARNING 1 Introduction to probabilistic deep learning 2 Neural network architectures 3 Principles of curve fitting PART 2 MAXIMUM LIKELIHOOD APPROACHES FOR PROBABILISTIC DL MODELS 4 Building loss functions with the likelihood approach 5 Probabilistic deep learning models with TensorFlow Probability 6 Probabilistic deep learning models in the wild PART 3 BAYESIAN APPROACHES FOR PROBABILISTIC DL MODELS 7 Bayesian learning 8 Bayesian neural networks   Machine Learning in Action Peter Harrington,2012-04-03 Summary Machine Learning in Action is unique book that blends the foundational theories of machine learning with the practical realities of building tools for everyday data analysis You ll use the flexible Python programming language to build programs that implement algorithms for data classification forecasting recommendations and higher level features like summarization and simplification About the Book A machine is said to learn when its performance improves with experience Learning requires algorithms and programs that capture data and ferret out the interestingor useful patterns Once the specialized domain of analysts and mathematicians machine learning is becoming a skill needed by many Machine Learning in Action is a clearly written tutorial for developers It avoids academic language and takes you straight to the techniques you ll use in your day to day work Many Python examples present the core algorithms of statistical data processing data analysis and data visualization in code you can reuse You ll understand the concepts and how they fit in with tactical tasks like classification forecasting recommendations and higher level features like summarization and simplification Readers need no prior experience with machine learning or statistical processing Familiarity with Python is helpful Purchase of the print book comes with an offer of a free PDF ePub and Kindle eBook from Manning Also available is all code from the book What s Inside A no nonsense introduction Examples showing common ML tasks Everyday data analysis Implementing classic algorithms like Apriori and Adaboos Table of Contents PART 1 CLASSIFICATION Machine learning basics Classifying with k Nearest Neighbors Splitting datasets one feature at a time decision trees Classifying with probability theory na ve Bayes Logistic regression Support vector machines Improving classification with the AdaBoost meta algorithm PART 2 FORECASTING NUMERIC VALUES WITH REGRESSION Predicting numeric values regression Tree based regression PART 3 UNSUPERVISED LEARNING Grouping unlabeled items using k means clustering Association analysis with the Apriori

algorithm Efficiently finding frequent itemsets with FP growth PART 4 ADDITIONAL TOOLS Using principal component analysis to simplify data Simplifying data with the singular value decomposition Big data and MapReduce **Deep Learning for Vision Systems** Mohamed Elgendy,2020-10-11 How does the computer learn to understand what it sees Deep Learning for Vision Systems answers that by applying deep learning to computer vision Using only high school algebra this book illuminates the concepts behind visual intuition You ll understand how to use deep learning architectures to build vision system applications for image generation and facial recognition Summary Computer vision is central to many leading edge innovations including self driving cars drones augmented reality facial recognition and much much more Amazing new computer vision applications are developed every day thanks to rapid advances in AI and deep learning DL Deep Learning for Vision Systems teaches you the concepts and tools for building intelligent scalable computer vision systems that can identify and react to objects in images videos and real life With author Mohamed Elgendy s expert instruction and illustration of real world projects you ll finally grok state of the art deep learning techniques so you can build contribute to and lead in the exciting realm of computer vision Purchase of the print book includes a free eBook in PDF Kindle and ePub formats from Manning Publications About the technology How much has computer vision advanced One ride in a Tesla is the only answer you ll need Deep learning techniques have led to exciting breakthroughs in facial recognition interactive simulations and medical imaging but nothing beats seeing a car respond to real world stimuli while speeding down the highway About the book How does the computer learn to understand what it sees Deep Learning for Vision Systems answers that by applying deep learning to computer vision Using only high school algebra this book illuminates the concepts behind visual intuition You ll understand how to use deep learning architectures to build vision system applications for image generation and facial recognition What s inside Image classification and object detection Advanced deep learning architectures Transfer learning and generative adversarial networks DeepDream and neural style transfer Visual embeddings and image search About the reader For intermediate Python programmers About the author Mohamed Elgendy is the VP of Engineering at Rakuten A seasoned AI expert he has previously built and managed AI products at Amazon and Twilio Table of Contents PART 1 DEEP LEARNING FOUNDATION 1 Welcome to computer vision 2 Deep learning and neural networks 3 Convolutional neural networks 4 Structuring DL projects and hyperparameter tuning PART 2 IMAGE CLASSIFICATION AND DETECTION 5 Advanced CNN architectures 6 Transfer learning 7 Object detection with R CNN SSD and YOLO PART 3 GENERATIVE MODELS AND VISUAL EMBEDDINGS 8 Generative adversarial networks GANs 9 DeepDream and neural style transfer 10 Visual embeddings Deep Learning and the Game of Go Kevin Ferguson,Max Pumperla,2019-01-06 Summary Deep Learning and the Game of Go teaches you how to apply the power of deep learning to complex reasoning tasks by building a Go playing AI After exposing you to the foundations of machine and deep learning you ll use Python to build a bot and then teach it the rules of the game Foreword by Thore Graepel DeepMind Purchase of the print book includes a free eBook in PDF

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