Make Your Own Neural Network By Tariq Rashid Goodreads

Make Your Own Neural Network By Tariq Rashid Goodreads Make Your Own Neural Network by Tariq Rashid Goodreads Make Your Own Neural Network by Tariq Rashid Goodreads is an influential book that introduces the fundamental concepts of neural networks and machine learning through accessible language and practical examples. Authored by Tariq Rashid, this book serves as an excellent starting point for beginners interested in understanding how neural networks work under the hood. It demystifies complex topics, making the journey into artificial intelligence both engaging and manageable. This article explores the core ideas presented in the book, provides insights into creating your own neural network, and highlights the importance of understanding the fundamentals in the rapidly evolving field of AI. --- Introduction to Neural Networks What Is a Neural Network? A neural network is a computational model inspired by the structure and function of biological brains. It is designed to recognize patterns, learn from data, and make decisions or predictions. Neural networks are the backbone of many modern AI applications, including image recognition, natural language processing, and game playing. Why Learn About Neural Networks? Understanding neural networks is crucial because: - They form the basis of deep learning algorithms. - They enable machines to perform tasks that were once thought to require human intelligence. - Learning to build your own neural network helps develop a deeper understanding of machine learning principles. The Significance of Tariq Rashid's Approach Tariq Rashid's book is notable for its clear explanations, step-by-step guidance, and practical examples, making it a valuable resource for beginners who want to create their own neural networks from scratch. --- Foundations of Neural Networks According to Tariq Rashid Biological Inspiration - Neural networks are modeled after the human brain's interconnected neurons. - Each neuron receives inputs, processes them, and passes output signals to other neurons. - This biological analogy helps in designing artificial networks that can learn from data. Basic Components of a Neural Network 1. Neurons (Nodes): Basic units that perform computations. 2. Weights: Parameters that determine the importance of each input. 3. Biases: Additional parameters that help the model fit the data. 4. Activation Functions: Functions that decide whether a neuron should activate or not. Types of Neural Networks - Single-Layer Perceptron: The simplest model, capable of solving linearly separable problems. - Multi-Layer Perceptron (MLP): Contains multiple layers and can handle more complex tasks. - Deep Neural

Networks: Comprise many layers, enabling learning of complex patterns. --- Building Your First Neural Network Step-by-Step Approach Tariq Rashid emphasizes a hands-on approach to building neural networks, which involves: - Understanding the mathematical foundations. - Implementing simple models in code. - Experimenting with different parameters. Tools and Programming 2 Languages - Python: The most popular language for machine learning. - Libraries: Such as NumPy for numerical operations and Matplotlib for visualization. Creating a Simple Neural Network Example: XOR Problem The XOR (exclusive OR) problem is a classic challenge for neural networks, illustrating the need for multi-layer models. Steps: 1. Define input data and expected outputs. 2. Initialize weights and biases randomly. 3. Use an activation function like sigmoid. 4. Implement forward propagation. 5. Calculate error. 6. Apply backpropagation to adjust weights. 7. Repeat until the network learns the pattern. Sample Python Code Snippet ```python import numpy as np Define sigmoid activation function def sigmoid(x): return 1 / (1 + np.exp(-x)) Derivative of sigmoid def sigmoid_derivative(x): return x (1 - x) Input dataset for XOR inputs = np.array([[0,0], [0,1], [1,0], [1,1]]) Output dataset outputs = np.array([[0], [1], [1], [0]]) Initialize weights randomly np.random.seed(1) weights_input_hidden = 2 np.random.random((2, 2)) - 1 weights_hidden_output = 2 np.random.random((2, 1)) - 1 learning_rate = 0.5 Training loop for epoch in range(10000): Forward propagation layer_input = inputs hidden_layer_input = np.dot(layer_input, weights_input_hidden) hidden_layer_output = sigmoid(hidden_layer_input) final_layer_input = np.dot(hidden_layer_output, weights_hidden_output) final_output = sigmoid(final_layer_input) Calculate error error = outputs - final_output if epoch % 1000 == 0: print(f"Epoch {epoch} Error: {np.mean(np.abs(error))}") Backpropagation delta_output = error sigmoid_derivative(final_output) error_hidden_layer = delta_output.dot(weights_hidden_output.T) delta_hidden_layer = error_hidden_layer sigmoid_derivative(hidden_layer_output) Update weights weights_hidden_output += hidden_layer_output.T.dot(delta_output) learning_rate weights_input_hidden += layer_input.T.dot(delta_hidden_layer) learning_rate ``` This code demonstrates the core concepts of neural network training—initialization, forward propagation, error calculation, backpropagation, and weight updating. --- Understanding and Implementing the Core Concepts Activation Functions Activation functions introduce non-linearity, enabling neural networks to learn complex patterns. - Sigmoid: S-shaped curve, outputs between 0 and 1. - ReLU (Rectified Linear Unit): Outputs zero for negative inputs, linear for positive. - Tanh: Outputs between -1 and 1, zero-centered. Tariq Rashid stresses the importance of choosing the right activation function depending on the problem. Learning Algorithms - Gradient Descent: The foundational algorithm for training neural networks. - Backpropagation: Efficient method for computing gradients needed for gradient descent. Loss Functions Quantify how well the neural network performs. - Mean Squared Error (MSE): Common for regression tasks. - Cross-

Entropy Loss: Used for classification problems. --- Practical Tips for Building Neural Networks Data Preparation - Normalize or standardize data. - Split data into training, validation, and testing sets. - Augment data if necessary. Hyperparameter Tuning - Learning rate - Number of layers and neurons - Activation functions - Number of epochs Avoiding Overfitting - Use regularization 3 techniques like dropout. - Monitor validation error. - Use early stopping. --- Advanced Topics Inspired by Tariq Rashid Deep Learning and Multiple Layers - As networks deepen, they can learn more abstract features. - Requires careful tuning and more computational power. Convolutional Neural Networks (CNNs) - Specialized for image data. - Use filters to detect features like edges and shapes. Recurrent Neural Networks (RNNs) - Suitable for sequence data like text or time series. Transfer Learning - Use pre-trained models and fine-tune on specific tasks. --- Resources and Further Reading Recommended Books and Courses - "Make Your Own Neural Network" by Tariq Rashid: The foundational resource. - Online courses on Coursera, Udacity, or edX. - Open-source tutorials and repositories. Community and Support - Join forums like Stack Overflow, Reddit's r/MachineLearning. - Participate in Kaggle competitions to practice. --- Conclusion Building your own neural network is a rewarding journey that deepens your understanding of artificial intelligence. Tariq Rashid's book provides a clear roadmap for beginners to grasp the essential concepts and implement simple models. By understanding the biological inspiration, mathematical foundations, and practical implementation steps, you can start experimenting with neural networks and take your first steps into the exciting world of machine learning. As you progress, exploring more advanced architectures and techniques will open doors to solving complex real-world problems. Remember, the key is to start simple, learn continuously, and keep experimenting. --- Final Thoughts Creating your own neural network from scratch is more than just coding; it is about developing an intuition for how machines learn. Tariq Rashid's approachable style makes this complex subject accessible, empowering newcomers to demystify AI. Whether you aim to build simple models or delve into deep learning, understanding the core principles outlined in his book is essential. Embrace the learning process, experiment relentlessly, and contribute to the growing field of artificial intelligence with curiosity and confidence. QuestionAnswer What is the main focus of 'Make Your Own Neural Network' by Tariq Rashid? The book aims to teach readers the fundamentals of neural networks and how to build them from scratch using simple, accessible explanations and practical examples. Is 'Make Your Own Neural Network' suitable for beginners with no prior coding experience? Yes, the book is designed for beginners and explains concepts in a straightforward manner, making it accessible even for those new to programming and neural networks. What programming language is used in 'Make Your Own Neural Network'? The book primarily uses Python to demonstrate the implementation of neural networks, leveraging its simplicity and widespread use in AI development. Does Tariq Rashid's book include practical projects or exercises?

Yes, the book contains hands-on projects and coding exercises that help readers understand how to build and train neural networks step by step. 4 Are there any prerequisites to understand 'Make Your Own Neural Network'? Basic knowledge of mathematics and programming is helpful but not mandatory, as the book starts with foundational concepts and guides readers through the process. How does 'Make Your Own Neural Network' compare to other beginner AI books? It is praised for its clear explanations, practical approach, and focus on building intuition, making it a popular choice for newcomers to AI and neural networks. Can readers expect to build a fully functional neural network after reading the book? Yes, the book guides readers through creating a simple neural network from scratch, providing a solid understanding of how these models work. Is 'Make Your Own Neural Network' still relevant in 2024 considering the advancements in AI? Absolutely, as it covers fundamental principles of neural networks that underpin more advanced AI models, making it a valuable starting point for learning. Where can I find 'Make Your Own Neural Network' by Tariq Rashid for purchase or reading? You can find the book on major online retailers like Goodreads, Amazon, and local bookstores, as well as in digital and physical formats. Make Your Own Neural Network by Tariq Rashid is a compelling introductory guide for anyone interested in understanding the fundamentals of neural networks and machine learning. As a beginner-friendly book, it aims to demystify complex concepts through clear explanations, practical examples, and approachable language. Published with the intent of making AI accessible to newcomers, the book has garnered positive reviews for its straightforward teaching style and hands-on approach. In this review, we will explore the main features of the book, its strengths and weaknesses, and discuss how it fits into the broader landscape of educational resources on neural networks. --- Overview of the Book "Make Your Own Neural Network" by Tariq Rashid is designed as an introductory text that guides readers through the process of building a simple neural network from scratch. The book emphasizes understanding core concepts rather than diving into advanced mathematics or complex programming. Rashid’s goal is to make neural networks approachable and engaging, especially for readers with little to no prior experience in machine learning or programming. The book balances theoretical explanations with practical coding exercises, primarily using Python. It introduces foundational ideas such as neurons, activation functions, training algorithms, and error correction, all explained with clear diagrams and simplified language. The ultimate aim is for readers to gain enough knowledge to create and experiment with their own neural networks, fostering curiosity and foundational understanding. --- Make Your Own Neural Network By Tariq Rashid Goodreads 5 Content Breakdown Introduction to Neural Networks The book starts with an intuitive explanation of what neural networks are, comparing them to the human brain's structure. Rashid discusses how biological neurons work and draws parallels to artificial neurons, making the abstract concept more relatable. This section emphasizes the importance

of pattern recognition and learning in neural networks. Building Blocks: Neurons and Layers Readers learn about the basic units of neural networks: neurons, weights, biases, and activation functions. Rashid describes how neurons process inputs and produce outputs, and how layers of neurons are organized. Diagrams and simple code snippets help clarify how signals propagate through the network. Training Neural Networks This section introduces the key idea of teaching the network through training data. Rashid explains the concept of error correction, gradient descent, and how the network adjusts weights to improve accuracy. The book simplifies the mathematics involved, focusing instead on the intuition behind learning algorithms. Practical Implementation The core of the book involves building a neural network in Python, with step-by-step instructions. Readers learn to implement forward propagation, error calculation, and weight updates. The code examples are designed to be accessible, with explanations accompanying each snippet. The book also includes exercises to reinforce understanding. Applications and Further Topics Towards the end, Rashid discusses possible applications of neural networks, such as image recognition, speech processing, and gaming. The book briefly touches on more advanced topics like multiple layers and deep learning, encouraging readers to explore further. --- Strengths of the Book - Beginner-Friendly Language: Rashid writes in a conversational style that makes complex ideas understandable without oversimplification. The use of analogies and visual aids enhances comprehension. - Hands-On Approach: The emphasis on building a neural Make Your Own Neural Network By Tariq Rashid Goodreads 6 network from scratch in Python allows readers to see the direct connection between theory and implementation. This practical focus helps solidify learning. - Clear Illustrations and Diagrams: Visual aids are used throughout the book to demonstrate how signals flow through the network and how adjustments improve performance. - Focus on Core Concepts: Rather than overwhelming readers with advanced mathematics, the book focuses on intuition and fundamental principles, making it suitable for complete beginners. - Encourages Experimentation: Simple exercises and projects foster a hands-on learning experience, encouraging readers to modify and experiment with their code. --- Weaknesses and Limitations - Simplification of Mathematics: While this is a strength for beginners, some readers seeking a rigorous mathematical understanding may find the explanations lacking depth. - Limited Scope: The book covers only basic neural networks and does not delve into more advanced topics such as deep learning architectures, convolutional neural networks, or optimization techniques. - Code Examples Are Basic: The Python code provided is intentionally simple, which might not be directly applicable for real-world applications or large datasets without significant modification. - Potential Outdatedness: Given the rapid evolution of AI, some techniques or terminology may be somewhat simplified or not reflect the latest developments in neural network research. --- Features and Highlights - Accessible Introduction: Perfect for absolute beginners with minimal technical

background. - Progressive Learning Curve: Starts from fundamental concepts and gradually introduces more complex ideas. - Practical Coding Exercises: Builds confidence through hands-on projects. - Encourages Curiosity: Inspires readers to explore further in AI and machine learning. - User-Friendly Layout: Clear chapters, summaries, and diagrams facilitate easy navigation and understanding. --- Comparison with Other Resources Compared to more comprehensive textbooks like "Deep Learning" by Ian Goodfellow or "Neural Networks and Deep Learning" by Michael Nielsen, Rashid's book is less technical but more approachable for beginners. It serves as an excellent starting point before diving into more advanced materials. Online tutorials and courses often focus on specific frameworks like TensorFlow or PyTorch, which require prior understanding of neural network fundamentals. Rashid's book fills the gap by providing foundational knowledge that makes subsequent learning smoother. --- Who Should Read This Book? - Complete beginners interested in understanding how neural networks work. - Students Make Your Own Neural Network By Tariq Rashid Goodreads 7 exploring AI and machine learning as part of their coursework. - Hobbyists wanting to build their own simple neural networks for experimentation. - Educators seeking a gentle introduction to neural network concepts. --- Pros and Cons Summary Pros: - Easy-to-understand language and explanations - Practical, step-by-step coding guidance - Visual aids that clarify complex ideas - Encourages experimentation and curiosity - Suitable for beginners with no prior experience Cons: - Lacks depth in mathematical rigor - Limited coverage of advanced topics - Basic code examples may require adaptation for complex projects - Might become outdated as AI evolves rapidly --- Final Thoughts "Make Your Own Neural Network" by Tariq Rashid is an excellent starting point for anyone new to artificial intelligence and machine learning. Its accessible approach, combined with practical coding exercises, demystifies the process of building neural networks and lays a solid foundation for further exploration. While it does not dive into the depths of deep learning architectures or optimization techniques, it effectively introduces core concepts essential for understanding more complex models. For learners seeking an engaging, straightforward introduction that emphasizes understanding over technical complexity, this book is highly recommended. It acts as a stepping stone that can boost confidence and inspire further study into advanced AI topics. If you're new to neural networks and want a clear, concise, and practical guide, "Make Your Own Neural Network" by Tariq Rashid is a valuable resource worth exploring. neural network tutorial, Tariq Rashid neural networks, machine learning books, beginner neural networks, how to build neural networks, deep learning guide, artificial intelligence books, programming neural networks, neural network for beginners, goodreads neural network books

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this book is for anyone who wants to understand what neural network s are it s for anyone who wants to make and use their own and it s for anyone who wants to appreciate the fairly easy but exciting mathematical ideas that are at the core of how they work this guide is not aimed at experts in mathematics or computer science you won t need any special knowledge or mathematical ability beyond school maths sic teachers can use this guide as a particularly gentle explanation of neural networks and their implementation to enthuse and excite students making their very own learning artificial intelligence with only a few lines of programming language code the code has been tested to work with a raspberry pi a small inexpensive computer very popular in schools and with young students page 6 introduction

design and create neural networks with deep learning and artificial intelligence principles using openai gym tensorflow and keras key featuresexplore neural network architecture and understand how it functionslearn algorithms to solve common problems using back propagation and perceptronsunderstand how to apply neural networks to applications with the help of useful illustrationsbook description neural networks play a very important role in deep learning and artificial intelligence ai with applications in a wide variety of domains right from medical diagnosis to financial forecasting and even machine diagnostics hands on neural networks is designed to guide you through learning about neural networks in a practical way the book will get you started by giving you a brief introduction to perceptron networks you will then gain insights into machine learning and also understand what the future of ai could look like next you will study how embeddings can be used to process textual data and the role of long short term memory networks lstms in helping you solve common natural language processing nlp problems the later chapters will demonstrate how you can implement advanced concepts including transfer learning generative adversarial networks gans autoencoders and reinforcement learning finally you can look forward to further content on the latest advancements in the field of neural networks by the end of this book you will have the skills you need to build train and optimize your own neural network model that can be used to provide predictable solutions what you will learnlearn how to train a network by using backpropagationdiscover how to load and transform images for use in neural networksstudy how neural networks can be applied to a varied set of applicationssolve common challenges faced in neural network developmentunderstand the transfer learning concept to solve tasks using keras and visual geometry group vgg networkget up to speed with advanced and complex deep learning concepts like lstms and nlp explore innovative algorithms like gans and deep reinforcement learningwho this book is for if you are interested in artificial intelligence and deep learning and want to further your skills then this intermediate level book is for you some knowledge of statistics will help you get the most out of this book

a step by step visual journey through the mathematics of neural networks and making your own using python and tensorflow what you will gain from this book a deep understanding of how a neural network works how to build a neural network from scratch using python who this book is for beginners who want to fully understand how networks work and learn to build two step by step examples in python programmers who need an easy to read but solid refresher on the math of neural networks what s inside make your own neural network an indepth visual introduction for beginners what is a neural network neural networks have made a gigantic comeback in the last few decades and you likely make use of them everyday without realizing it but what exactly is a neural

network what is it used for and how does it fit within the broader arena of machine learning we gently explore these topics so that we can be prepared to dive deep further on to start we ll begin with a high level overview of machine learning and then drill down into the specifics of a neural network the math of neural networks on a high level a network learns just like we do through trial and error this is true regardless if the network is supervised unsupervised or semi supervised once we dig a bit deeper though we discover that a handful of mathematical functions play a major role in the trial and error process it also becomes clear that a grasp of the underlying mathematics helps clarify how a network learns forward propagation calculating the total error calculating the gradients updating the weights make your own artificial neural network hands on example you will learn to build a simple neural network using all the concepts and functions we learned in the previous few chapters our example will be basic but hopefully very intuitive many examples available online are either hopelessly abstract or make use of the same data sets which can be repetitive our goal is to be crystal clear and engaging but with a touch of fun and uniqueness this section contains the following eight chapters building neural networks in python there are many ways to build a neural network and lots of tools to get the job done this is fantastic but it can also be overwhelming when you start because there are so many tools to choose from we are going to take a look at what tools are needed and help you nail down the essentials to build a neural network tensorflow and neural networks there is no single way to build a feedforward neural network with python and that is especially true if you throw tensorflow into the mix however there is a general framework that exists that can be divided into five steps and grouped into two parts we are going to briefly explore these five steps so that we are prepared to use them to build a network later on ready let s begin neural network distinguish handwriting we are going to dig deep with tensorflow and build a neural network that can distinguish between handwritten numbers we ll use the same 5 steps we covered in the high level overview and we are going to take time exploring each line of code neural network classify images 10 minutes that s all it takes to build an image classifier thanks to google we will provide a high level overview of how to classify images using a convolutional neural network cnn and google s inception v3 model once finished you will be able to tweak this code to classify any type of image sets cats bats super heroes the sky s the limit

this book contains everything that a curious mind seeks more the book sets the seeker on the mathematical journey which starts with the biological neuron and a network and ends by creating your own the book will gently introduce the concept of imitation and the roots of neural networks firstly it will introduce the working of a biological neuron followed by the analogies with the artificial neurons after an overview of those the book will shift the gears from biology to mathematics we will find our way of creating the

neural network library with the help of mathematics and developing the code alongside the section

ready to throw your hat into the ai and machine learning ring get started right here right now are you sick of these machine learning guides that don t really teach you anything do you already know python but you re looking to expand your horizons and skills with the language do you want to dive into the amazing world of neural networks but it just seems like it s not for you artificial intelligence is progressing at a fantastic rate every day a new innovation hits the net providing more and more opportunities for the advancement of society in your everyday life your job and even in your passion projects learning how to code a neural network can be game changing but it just seems complicated how do you learn everything that goes into such a complex topic without wanting to tear your own hair out well it just got easier machine learning and neural networking don t have to be complicated with the right resources you can successfully code your very own neural network from scratch minimal experience needed in this all encompassing guide to coding neural networks in python you ll uncover everything you need to go from zero to hero transforming how you code and the scope of your knowledge right before your eyes here s just a portion of what you will discover in this guide a comprehensive look at what a neural network is including why you would use one and the benefits of including them in your repertoire all that pesky math dissuading you get right to the meat and potatoes of coding without all of those confusing equations getting you down become a debugging master with these tips for handling code problems maximizing your efficiency as a coder and testing the data within your code technological advancements galore learn how to keep up with all the latest trends in tech and why doing so is important to you what in the world are layers and gradients detailed explanations of complex topics that will demystify neural networks once and for all dealing with underfitting overfitting and other oversights that many other resources overlook several beginner friendly neural network projects to put your newfound knowledge to the test and much more imagine a world where machine learning is more accessible where neural networks and other complex topics are available to people just like you people with a passion allowing for such technological advancements is going to truly change our world it might seem hard and you might be concerned based on other resources you ve browsed but this isn t an opportunity you can pass up on by the end of this book you ll have mastered neural networks confidently

design and create neural networks with deep learning and artificial intelligence principles using openai gym tensorflow and keras key features explore neural network architecture and understand how it functions learn algorithms to solve common problems

using back propagation and perceptrons understand how to apply neural networks to applications with the help of useful illustrations book description neural networks play a very important role in deep learning and artificial intelligence ai with applications in a wide variety of domains right from medical diagnosis to financial forecasting and even machine diagnostics hands on neural networks is designed to guide you through learning about neural networks in a practical way the book will get you started by giving you a brief introduction to perceptron networks you will then gain insights into machine learning and also understand what the future of ai could look like next you will study how embeddings can be used to process textual data and the role of long short term memory networks lstms in helping you solve common natural language processing nlp problems the later chapters will demonstrate how you can implement advanced concepts including transfer learning generative adversarial networks gans autoencoders and reinforcement learning finally you can look forward to further content on the latest advancements in the field of neural networks by the end of this book you will have the skills you need to build train and optimize your own neural network model that can be used to provide predictable solutions what you will learn learn how to train a network by using backpropagation discover how to load and transform images for use in neural networks study how neural networks can be applied to a varied set of applications solve common challenges faced in neural network development understand the transfer learning concept to solve tasks using keras and visual geometry group vgg network get up to speed with advanced and complex deep learning concepts like lstms and nlp explore innovative algorithms like gans and deep reinforcement learning who this book is for if you are interested in artificial intelligence and deep learning and want to further your skills then this intermediate level book is for you some knowledge of statistics will help you get the most out of this book

this book is a guide on how to implement a neural network in the python programming language it begins by giving you a brief overview of neural networks so as to know what they are where they are used and how they are implemented the next step is an exploration of the backpropagation algorithm this is the algorithm behind the functionality of neural networks and it involves a forward and backward pass numby is a python library which can be used for the purpose of implementation of a neural network this library is discussed in this book and you are guided on how to use it for that purpose the functionality of neural networks has to be improved the various ways to improve how a neural network works is also explored you are then guided on how to implement neural networks with neupy another python library the following topics are discussed in this book a brief overview of neural networks backpropagation algorithm neural networks with numpy improving a neural network in python neupy models in neural networks

do you want to understand neural networks and learn everything about them but it looks like it is an exclusive club are you fascinated by artificial intelligence but you think that it would be too difficult for you to learn if you think that neural networks and artificial intelligence are the present and even more the future of technology and you want to be part of it well you are in the right place and you are looking at the right book if you are reading these lines you have probably already noticed this artificial intelligence is all around you your smartphone that suggests you the next word you want to type your netflix account that recommends you the series you may like or spotify s personalised playlists this is how machines are learning from you in everyday life and these examples are only the surface of this technological revolution either if you want to start your own ai entreprise to empower your business or to work in the greatest and most innovative companies artificial intelligence is the future and neural networks programming is the skill you want to have the good news is that there is no exclusive club you can easily if you commit of course learn how to program and use neural networks and to do that neural networks for beginners is the perfect way in this book you will learn the types and components of neural networks the smartest way to approach neural network programming why algorithms are your friends the three vs of big data plus two new vs how machine learning will help you making predictions the three most common problems with neural networks and how to overcome them even if you don t know anything about programming neural networks is the perfect place to start now still if you already know about programming but not about how to do it in artificial intelligence neural networks are the next thing you want to learn and neural networks for beginners is the best way to do it download neural network for beginners now to get the best start for your journey to artificial intelligence scroll to the top of the page and click the buy now button

this book is a collection of notes and sample codes written by the author while he was learning neural networks in machine learning topics include neural networks nn concepts nodes layers activation functions learning rates training sets etc deep playground for classical neural networks building neural networks with python walking through tariq rashi s make your own neural network source code using tensorflow and pytorch machine learning platforms understanding cnn convolutional neural network rnn recurrent neural network gnn graph neural network updated in 2023 version v1 22 with minor updates for latest updates and free sample chapters visit herongyang com neural network

build your own neural network today with an easy to follow process showing you how to build them faster than you imagined possible using r about this book this rich fascinating accessible hands on guide puts neural networks firmly into the hands of the

practitioner it reveals how they work and takes you under the hood with an easy to follow process showing you how to build them faster than you imagined possible using the powerful free r predictive analytics package everything you need to get started is contained within this book it is your detailed practical tactical hands on guide to accelerate your success it contains exercises with fully worked solutions also provided once you have mastered the process it will be easy for you to translate your knowledge into other powerful applications a book for everyone interested in machine learning predictive analytics neural networks and decision science here is what it can do for you save time imagine having at your fingertips easy access to the very best neural network models without getting bogged down in mathematical details in this book you ll learn fast effective ways to build powerful neural network models easily using r learn easily build your own neural network today contains an easy to follow process showing you how to build the most successful neural networks used for learning from data use this guide and build them easily and quickly boost productivity bestselling author and data scientist dr n d lewis will show you how to build neural network models in less time than you ever imagined possible even if you re a busy professional a student or hobbyist with little time you will rapidly enhance your knowledge effortless success by spending as little as 10 minutes a day working through the dozens of real world examples illustrations practitioner tips and notes you ll be able to make giant leaps forward in your knowledge broaden your skill set and generate new ideas for your own personal use eliminate anxiety forget trying to master every single mathematical detail instead your goal is to simply to follow the process using real data that only takes about 5 to 15 minutes to complete within this process is a series of actions by which the neural network model is explained and constructed all you have to do is follow the process it is your checklist for use and reuse 1 for people interested in statistics machine learning data analysis data mining and future hands on practitioners seeking a career in the field it sets a strong foundation delivers the prerequisite knowledge and whets your appetite for more here are some of the neural network models you will build multi layer perceptrons probabilistic neural networks generalized regression neural networks recurrent neural networks buy the book today your next big breakthrough using neural networks is only a page away

tensorflow is the most popular deep learning library out there it has fantastic graph computations feature which helps data scientist to visualize his designed neural network using tensorboard this machine learning library supports both convolution as well as recurrent neural network it supports parallel processing on cpu as well as gpu prominent machine learning algorithms supported by tensorflow are deep learning classification wipe deep boston tree amongst others the book is very hands on and gives you industry

ready deep learnings practices here is what is covered in the book

discover how to build your own neural network from scratch even if you ve got zero math or coding skills what seemed like a lame and unbelievable sci fi movie a few decades ago is now a reality machines can finally think maybe not quite as complex as the human brain but more than enough to make everyone s life a lot easier artificial neural networks based on the neurons found in the human brain give machines a brain patterned just like biological neurons these software or hardware are a variety of the deep learning technology with their help you can make your computer learn by feeding it data which will then be generated as the output you desire it is they to thank for the nanoseconds in which computers operate it may be science but it is not actually rocket science everyone can learn how to take advantage of the progressed technology of today get inside the brain of the computers and train them to perform the desired operations they have been used in many different industries and you can rest assured that you will find the perfect purpose for your own neural network the best part about this book is that it doesn t require a college degree your high school math skills are quite enough for you to get a good grasp of the basics and learn how to build an artificial neural network from non mathematical explanations to teaching you the basic math behind the anns and training you how to actually program one this book is the most helpful guide you will ever find carefully designed for you the beginner this guide will help you become a proud owner of a neural network in no time here s a sneak peak to what you ll discover inside this book the 6 unique benefits of neural networks the difference between biological and artificial neural networks and inside look into ann artificial neural networks the industries ann is used in how to teach neural networks to perform specific commands the different types of learning modalities e g hebbian learning unsupervised learning supervised learning etc the architecture of ann basic math behind artificial neurons simple networks for pattern classification the hebb rule how to build a simple neural network code the backpropogation algorithm and how to program it and much much more there s a lot more inside this book we ll cover so be prepared i ve made to lucidly explain everything i cover so that there s zero confusion download this book today and discover all the intricate details of building your very own neural network

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