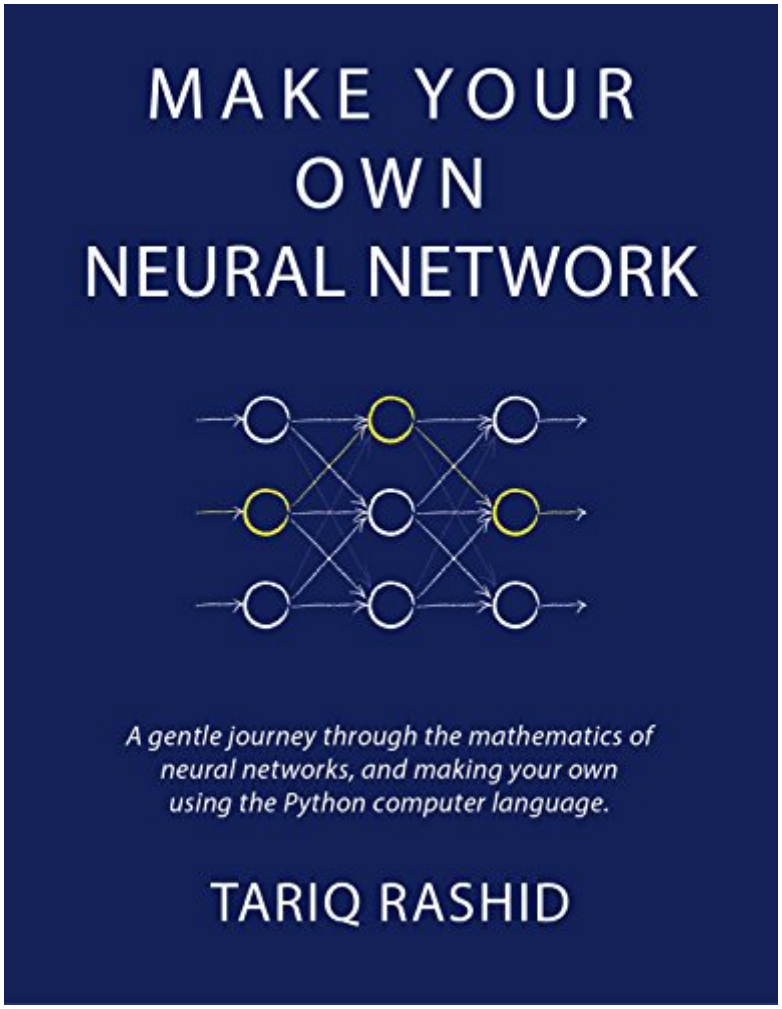
Make Your Own Neural Network



Synopsis

A gentle journey through the mathematics of neural networks, and making your own using the Python computer language. Neural networks are a key element of deep learning and artificial intelligence, which today is capable of some truly impressive feats. Yet too few really understand how neural networks actually work.This guide will take you on a fun and unhurried journey, starting from very simple ideas, and gradually building up an understanding of how neural networks work. You won’t need any mathematics beyond secondary school, and an accessible introduction to calculus is also included.The ambition of this guide is to make neural networks as accessible as possible to as many readers as possible - there are enough texts for advanced readers already!You’ll learn to code in Python and make your own neural network, teaching it to recognise human handwritten numbers, and performing as well as professionally developed networks.Part 1 is about ideas. We introduce the mathematical ideas underlying the neural networks, gently with lots of illustrations and examples. Part 2 is practical. We introduce the popular and easy to learn Python programming language, and gradually builds up a neural network which can learn to recognise human handwritten numbers, easily getting it to perform as well as networks made by professionals. Part 3 extends these ideas further. We push the performance of our neural network to an industry leading 98% using only simple ideas and code, test the network on your own handwriting, take a privileged peek inside the mysterious mind of a neural network, and even get it all working on a Raspberry Pi. All the code in this has been tested to work on a Raspberry Pi Zero.

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Customer Reviews

Tariq Rashid reminds me of Isaac Asimov who could marvelously render a highly technical topic into an interesting narrative that any average human could read, enjoy, and understand the fundamentals of technology or science. While I had Googled many documents purporting to explain neural networks, none penetrated my brain in any meaningful way. However, as soon as I began reading Tariq Rashidâ ™s book, â œMake Your Own Neural Network,â • I realized I had found an author and a book which could load an average, non-mathematical mind with an understanding of this topic of interest. Such authors and teachers are invaluable to the human race !

I’m a retired sociology PhD trying to make sense out of machine learning and AGI with 50 years since my last math class. This book is remarkable for its clarity and coverage of the subject....I haven’t found anything like it.

This is the most effective but gentle introduction to neural networks I’ve seen. No other authors of NN primers dare to delve into matrices as the basic math for understanding them but Mr. Rashid pulls it off beautifully. There are lots of very helpful diagrams to make the points clear.

The book is FANTASTIC !It takes you step by step of what a neural network is, demystifies everything there is about Neural Networks, provides hands on examples, explains the code line by line and provides the complete code in python which is a simple intuitive language to understand.This is all you want to learn these mysterious entities called Neural Networks.I wish I had this book years ago.This book is NOT DRY ACADEMIC SLEEP INDUCING drivel by some insecure Professor with not the slightest inkling of the real world.This book is HANDS ON, PRACTICAL, INTELLIGIBLE.

This is a very nice introduction into Neural Networks. I have been recommending this to my friends and family. Even if you are afraid of the mathematics involved, the appendix in the book covers what you need to know in order to make sense of the math (most of it is simple algebra) with just a bit of derivatives that involve the chain rule. This is one of the few books that not only goes over the

theory but also the step by step implementation (training your network to recognize handwritten numbers in Python) as well as testing the code and making minor tweaks to show how that will affect the overall accuracy of the network. For an added bonus, the author includes a chapter describing how you can train the network to recognize your own handwriting and things you can do to further increase the accuracy.Even though I highly recommend this book, there are a few grammatical errors as well as labels being incorrect in a few of the diagrams. You can still get through the book without the errors taking away from the content. I'm sure in future revisions, most of these errors will be corrected. Aside from that, I am pleased with my purchase of this book. Money well spent and I will continue referring back to this book.

One of the best books on Machine Learning. I really enjoyed the style of the author, truly demystifies complex topics. I have many books on Machine Learning and Neural Networks but I always get lost and hit a wall. I purchased "Python Machine Learning" which starts describing similar topics at the beginning but then the book just moved too fast for me. I didn't know the why and how.But Tariq's book was amazing, the author really takes his time to explain things mixing text with illustrations to make a point. Usually my attention span with these kind of books is few pages here and there a day, but with this book I couldn't stop. I was on a rhythm , and I felt I could retain the knowledge. When I attempted to read the other books, they all start perfectly on the first chapter, then all of sudden you see code and the authors move too quickly assuming the reader is following along or has some background knowledge. With this book I felt I could indulge in a meaningful dialogue with anyone on the topic, and I could explain things better. After reading few chapters from Tariqâ ™s book, I picked up "Python Machine Learning" and what was amazing is that I was able to follow along and all the gibberish stuff started to make sense. So, I would urge anyone to start reading this book first because it covers all the fundamentals including basic Linear Algebra (Matrices).I havenâ ™t finished the book yet but I canâ ™t wait to complete it, and then move to more advanced topics/books.

This book should make other "complicated" computer science books feel ashamed of themselves. I mean, wow. Neural Networks are actually NOT complicated. Here's a man so brilliant that his command of the subject allows him to deliver it to mere mortals like myself. I think it was Einstein that said that if you can't explain it to a 5 year old you don't understand it yourself. That's one for my teachers to think about... I only hope that Mr. Rashid will do the world a big favor and write more books. We need them and we need them badly.

Very nice book on understanding the concepts and putting them straight into practice. Was able to read this in a couple of hours and apply the concepts immediately - definitely interested in machine learning now. Very cool!

Network Marketing Success Blueprint: Go Pro in Network Marketing: Build Your Team, Serve Others and Create the Life of Your Dreams (Network Marketing ... Scam Free Network Marketing) (Volume 1) Make Your Own Neural Network Principles of Neural Science, Fifth Edition (Principles of Neural Science (Kandel)) Deep Learning: Natural Language Processing in Python with Recursive Neural Networks: Recursive Neural (Tensor) Networks in Theano (Deep Learning and Natural Language Processing Book 3) Neural Smithing: Supervised Learning in Feedforward Artificial Neural Networks (MIT Press) Rich Dad Advisor's Series: Own Your Own Corporation: Why the Rich Own Their Own Companies and Everyone Else Works for Them (Rich Dad's Advisors) Network Marketing: Network Marketing Recruiting for Facebook: How to Find People to Talk to and What to Say When You Do (MLM Recruiting, Direct Sales, Network Marketing, Home Business) Network Marketing For Introverts: Guide To Success For The Shy Network Marketer (network marketing, multi level marketing, mlm, direct sales) Network Marketing : How To Recruit Prospect Step By Step From Newbies To Professional in network marketing: network marketing, multiple marketing, MLM, ... Step from Newbies to Professional Book 5) Build Your Own Wi-Fi Network (Build Your Own...(McGraw)) Neural Network Training Using Genetic Algorithms (Series in Machine Perception and Artificial Intelligence) Neural Network Design (2nd Edition) Meditations to Change Your Brain: Rewire Your Neural Pathways to Transform Your Life Rock Your Network Marketing Business: How to Become a Network Marketing Rock Star How to Follow Up With Your Network Marketing Prospects: Turn Not Now Into Right Now! (MLM & Network Marketing Book 4) Event Planning: Plan Events Like a Professional, Impress Your Clients and be Your Own Boss in 12 Simple Steps (event planning, experience, organise, manage, ... be your own boss, work from home Book 4) Nmap Network Scanning: The Official Nmap Project Guide to Network Discovery and Security Scanning Managing Internetworks With Snmp: The Definitive Guide to the Simple Network Management Protocol, Snmpv2, Rmon, and Rmon2 (Network Troubleshooting Library) WIN32 Network Programming: Windows(r) 95 and Windows NT Network Programming Using MFC Localization in Wireless Sensor Network: An enhanced composite approach with mobile beacon shortest path to solve localization problem in wireless sensor network