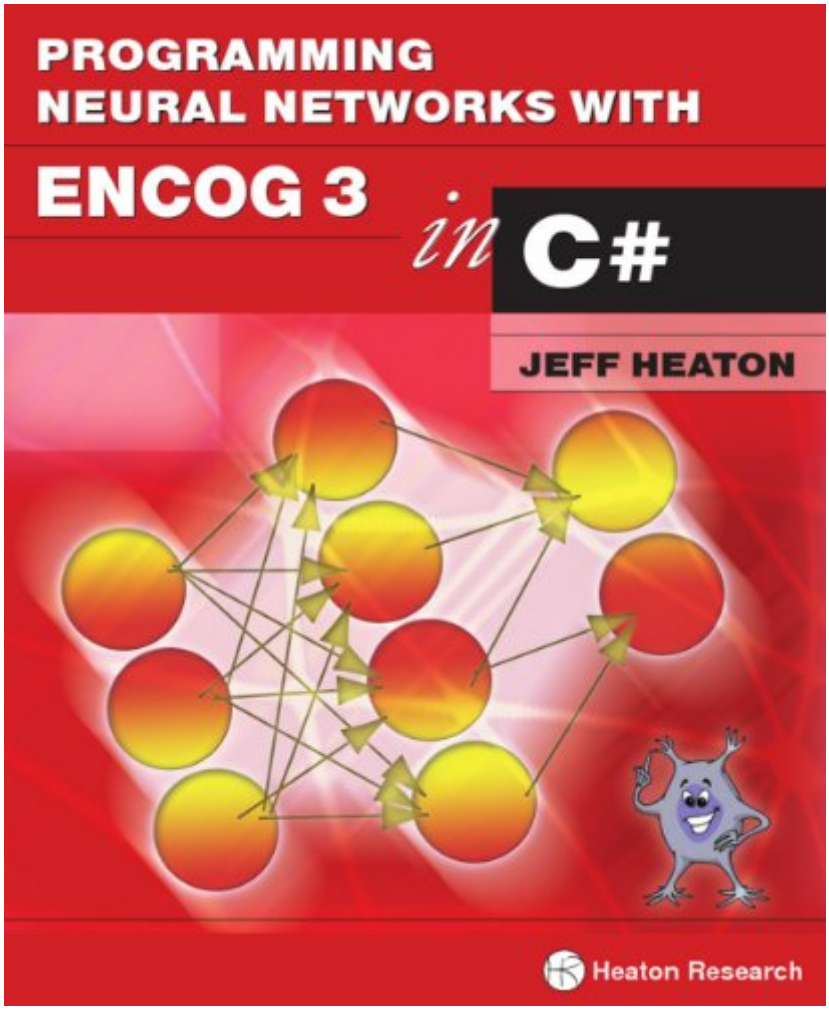
Programming Neural Networks With Encog3 In C#



Synopsis

Encog is an advanced Machine Learning Framework for Java, C# and Silverlight. This book focuses on using the neural network capabilities of Encog with the C# programming language. This book begins with an introduction to the kinds of tasks neural networks are suited towards. The reader is shown how to use classification, regression and clustering to gain new insights into data. Neural network architectures such as feedforward, self organizing maps, NEAT, and recurrent neural networks are introduced. This book also covers advanced neural network training techniques such as back propagation, quick propagation, resilient propagation, Levenberg Marquardt, genetic training and simulated annealing. Real world problems such as financial prediction, classifiction and image processing are introduced.

Book Information

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Customer Reviews

Encog3 is a powerful tool for building neural nets in C# and Java very quickly and easily. If you are looking to get into AI, or if you need to use a neural net in your project without the enormous overhead of rolling your own, you will want to get to know Encog. This book is a thorough

introduction to the tool. How to set it up. How to use it. How it does, what it does. It’s all you need to get started with Encog3.The only thing I did not like was the obvious hand of a project manager in the editing. You know the type. You write a sentence like "This is the house that Jack built" and they read half a sentence and complain "’That Jack built’ isn’t a sentence. It should be ’Jack built that.’" Ultimately you end up with, "This is Jack’s Jack-built house, built by Jack, who built the house that Jack built."In this book, that takes the form of: This section will detail how to structure a neural network for a very simple problem: to design a neural network that can function as an XOR operator. Learning the XOR operator is a frequent "first example" when demonstrating the architecture of a new neural network. Just as most new programming languages are first demonstrated with a program that simply displays "Hello World,"neural networks are frequently demonstrated with the XOR operator. Learning the XOR operator is a sort of the "Hello World" application for neural networks.It’s an unfair structure, because the book is brilliant once you get past the endless repetition, and unnecessary information (they explain the Boolean operators "and" and "or", to an audience sophisticated enough to be using neural nets). The engine itself is revolutionary. The code examples are clear and shockingly concise.

Several previous commenters have praised Jeff on his concise writing style and how he conveys a complex topic in an easily digestible manner. Let me put it another way - about a week ago I knew almost nothing about Artificial Neural Networks. My math skills are pretty decent (I’m a programmer) but I’m not versed in calculus. Now, I’m only half way through the book and it already has managed to give me a running start on all the basic concepts involved in building and training ANNs. I’m able to read pertinent white papers now plastered with formulas which largely escape me - but I am able to grasp the underlying principles and overall idea. I wouldn’t be able to fully explain to you how resilient back propagation works, however the basic concept behind is now clear to me. I am also able to differentiate between various propagation training techniques and when to choose what type of data normalization. And that is sufficient in order to get started with experimenting and training simple ANNs. But the icing on the cake for me was that Jeff is offering a downloadable API and workbench (Encog) on his website for FREE. Plus there are ample examples in the book, providing hands-on examples and training. This is not just a technical book - it’s a guided journey offering non-mathematicians the opportunity to explore the exotic world of neural networks. Which is why I believe it deserved a five-star rating. The book should be called ’Everything You Always Wanted To Know About Neural Nets, And Never Dared To Ask’.

I am a software engineer. Therefore, I am really tough on any technical books that I buy. Heaton does not get a soft pass from me. But the fact is this: I have never read a better book that explained neural networks, and I have been studying them for 20 years.Good job.

It is very well written and is easily assimilated. The content covers everything from basic experiments in the workbench to using the framework in c#. Very useful for AI integration into projects. Recomended.

4 stars because I can’t find better. I get the feeling that Heaton is learning as he goes.I found several obvious opportunities in the Encog source to improve or fix the GA algorithm, makes me doubt the quality of the NN code.

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