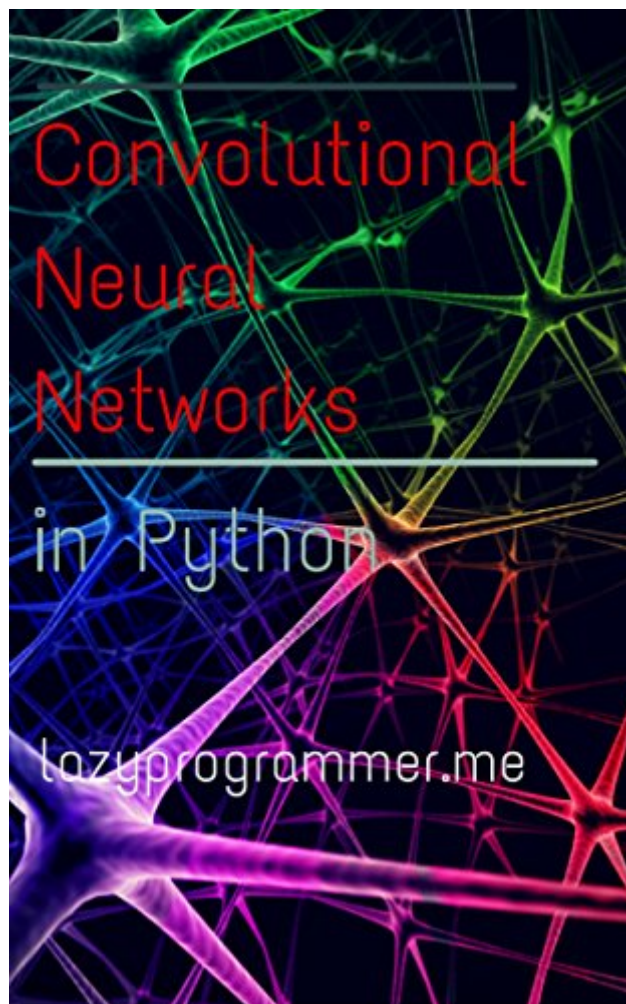


The book was found

Convolutional Neural Networks In Python: Master Data Science And Machine Learning With Modern Deep Learning In Python, Theano, And TensorFlow (Machine Learning In Python)





Synopsis

This is the 3rd part in my Data Science and Machine Learning series on Deep Learning in Python. At this point, you already know a lot about neural networks and deep learning, including not just the basics like backpropagation, but how to improve it using modern techniques like momentum and adaptive learning rates. You've already written deep neural networks in Theano and TensorFlow, and you know how to run code using the GPU. This book is all about how to use deep learning for computer vision using convolutional neural networks. These are the state of the art when it comes to image classification and they beat vanilla deep networks at tasks like MNIST. In this course we are going to up the ante and look at the StreetView House Number (SVHN) dataset - which uses larger color images at various angles - so things are going to get tougher both computationally and in terms of the difficulty of the classification task. But we will show that convolutional neural networks, or CNNs, are capable of handling the challenge! Because convolution is such a central part of this type of neural network, we are going to go in-depth on this topic. It has more applications than you might imagine, such as modeling artificial organs like the pancreas and the heart. I'm going to show you how to build convolutional filters that can be applied to audio, like the echo effect, and I'm going to show you how to build filters for image effects, like the Gaussian blur and edge detection. After describing the architecture of a convolutional neural network, we will jump straight into code, and I will show you how to extend the deep neural networks we built last time with just a few new functions to turn them into CNNs. We will then test their performance and show how convolutional neural networks written in both Theano and TensorFlow can outperform the accuracy of a plain neural network on the StreetView House Number dataset. All the materials used in this book are FREE. You can download and install Python, Numpy, Scipy, Theano, and TensorFlow with pip or easy_install. Lastly, my goal is to show you that convolutional networks aren't magical and they don't require expert-level math to figure out. It's just the same thing we had with regular neural networks: $y = \text{softmax}(\text{relu}(X \cdot W1) \cdot W2)$ Except we replace the first $\cdot$ product with a convolution: $y = \text{softmax}(\text{relu}(\text{conv}(X, W1)) \cdot W2)$ The way they are trained is exactly the same as before, so all your skills with backpropagation, etc. carry over.

Book Information

File Size: 2011 KB

Print Length: 53 pages

Simultaneous Device Usage: Unlimited

Publication Date: May 15, 2016

Sold by: Digital Services LLC

Language: English

ASIN: B01FQDREOK

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Not Enabled

Enhanced Typesetting: Enabled

Best Sellers Rank: #111,660 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #18

in Books > Computers & Technology > Computer Science > AI & Machine Learning > Neural Networks #72 in Kindle Store > Kindle Short Reads > 90 minutes (44-64 pages) > Computers & Technology #112 in Books > Computers & Technology > Computer Science > AI & Machine Learning > Intelligence & Semantics

Customer Reviews

Great

[Download to continue reading...](#)

Convolutional Neural Networks in Python: Master Data Science and Machine Learning with Modern Deep Learning in Python, Theano, and TensorFlow (Machine Learning in Python) Deep Learning in Python: Master Data Science and Machine Learning with Modern Neural Networks written in Python, Theano, and TensorFlow (Machine Learning in Python) Unsupervised Deep Learning in Python: Master Data Science and Machine Learning with Modern Neural Networks written in Python and Theano (Machine Learning in Python) 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) Deep Learning: Recurrent Neural Networks in Python: LSTM, GRU, and more RNN machine learning architectures in Python and Theano (Machine Learning in Python) Deep Learning in Python Prerequisites: Master Data Science and Machine Learning with Linear Regression and Logistic Regression in Python (Machine Learning in Python) Deep Learning Step by Step with Python: A Very Gentle Introduction to Deep Neural Networks for Practical Data Science Deep Learning: Natural Language Processing in Python with Word2Vec: Word2Vec and Word Embeddings in Python and Theano (Deep Learning and Natural Language Processing Book 1) Deep Learning: Natural Language Processing in Python with GLoVe: From Word2Vec to GLoVe in Python and Theano (Deep Learning and Natural Language Processing)

Deep Learning for Business with R: A Very Gentle Introduction to Business Analytics Using Deep Neural Networks Python: Python Programming Course: Learn the Crash Course to Learning the Basics of Python (Python Programming, Python Programming Course, Python Beginners Course) Neural Smithing: Supervised Learning in Feedforward Artificial Neural Networks (MIT Press) Unsupervised Machine Learning in Python: Master Data Science and Machine Learning with Cluster Analysis, Gaussian Mixture Models, and Principal Components Analysis A collection of Advanced Data Science and Machine Learning Interview Questions Solved in Python and Spark (II): Hands-on Big Data and Machine ... Programming Interview Questions) (Volume 7) Data Analytics: What Every Business Must Know About Big Data And Data Science (Data Analytics for Business, Predictive Analysis, Big Data) Artificial Intelligence for Humans, Volume 3: Deep Learning and Neural Networks Deep Learning Neural Networks: Design and Case Studies Principles of Neural Science, Fifth Edition (Principles of Neural Science (Kandel)) Data Analytics: Practical Data Analysis and Statistical Guide to Transform and Evolve Any Business. Leveraging the Power of Data Analytics, Data ... (Hacking Freedom and Data Driven) (Volume 2) Hello World en TensorFlow: Para iniciarse en la programación del Deep Learning (Spanish Edition)

[Dmca](#)