International Journal of Swarm Intelligence and Evolutionary Computation

OPEN ACCESS Freely available online

Editorial

Data of Neural Network Shouldn't Be Trusted

Steve Ackerman *

Department of computer science, Florida southern college, Hollingsworth Drive, Lakeland, Florida

EDITORIAL NOTE ON NEURAL NETWORK

Increasingly, AI systems referred to as deep learning neural networks are wont to inform decisions vital to human health and safety, like in autonomous driving or diagnosis. These networks are good at recognizing patterns in large, complex datasets to assist in decision-making.

A quick way for a neural network to crunch data, and output not just a prediction but also the model's confidence level supported the standard of the available data. The advance might save lives, as deep learning is already being deployed within the world today. A network's level of certainty is often the difference between an autonomous vehicle determining that "it's all clear to proceed through the intersection" and "it's probably clear, so stop just in case. Deep learning has demonstrated remarkable performance on a spread of tasks, in some cases even surpassing human accuracy. And nowadays, deep learning seems to travel wherever computers go. It fuels program results; social media feeds, and face recognition.

Deep neural networks generally ask particularly complex neural networks. These have more layers (as many as 1,000) and — typically — more neurons per layer. With more layers and more neurons, networks can handle increasingly complex tasks; but meaning they take longer to coach. Because GPUs are optimized for working with matrices and neural networks are supported algebra, the supply of powerful GPUs has made building deep neural networks feasible.

For example, suppose that you have a set of photographs and you want to determine whether a cat is present in each image. CNNs process images from the ground up. Neurons that are located earlier within the network are liable for examining small windows of pixels and detecting simple, small features like edges and corners. These outputs are then fed into neurons within the intermediate layers, which search for larger features like whiskers, noses, and ears. This second set of outputs is used to make a final judgment about whether the image contains a cat.

CNNs are so revolutionary because they take the task of localized feature extraction out of the hands of citizenry. Prior to using CNNs, researchers would often need to manually decide which characteristics of the image were most vital for detecting a cat. However, neural networks can build up these feature representations automatically, determining for themselves which parts of the image are the foremost meaningful.

The learning rate defines the dimensions of the corrective steps that the model takes to regulate for errors in each observation. A high learning rate shortens the training time, but with lower ultimate accuracy, while a lower learning rate takes longer, but with the potential for greater accuracy. Optimizations like Quickprop are primarily aimed toward speeding up error minimization, while other improvements mainly attempt to increase reliability. In order to avoid oscillation inside the network like alternating connection weights, and to enhance the speed of convergence, refinements use an adaptive learning rate that increases or decreases as appropriate. The concept of momentum allows the balance between the gradient and therefore the previous change to be weighted such the load adjustment depends to a point on the previous change. A momentum on the brink of 0 emphasizes the gradient, while a worth on the brink of 1 emphasizes the last change.

Correspondence to: Steve Ackerman, Department of computer science, Florida southern college, Hollingsworth Drive, Lakeland, Florida, E-mail: ackereve@flsouthern.edu

Received date: November 26, 2020; **Accepted date:** December 17, 2020; **Published date:** December 24, 2020

Citation: Ackerman S (2020) Data of Neural Network Shouldn't Be Trusted. Int J Swarm Evol Comput 9:e191.