ABSTRACT

A Study on Various Deep Learning Algorithms with R

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In recent days, deep learning is getting more popular in almost every field, such as bioinformatics, medical images, finance, as well as computer science, and so on. Most softwares for the deep learning algorithms are written in Python, mainly because of Tensorflow in backend tensor calculation. Nowadays, the realization of deep learning is also possible in R, which is more popular in the statistics area. This paper provides a guideline for the users for deep learning with R among various R packages for deep learning.

First, we briefly introduce various algorithms of deep neural networks and review state-of-art softwares for deep learning with R - deepnet, NeuralNetTools, automl, autoencoder, keras, RcppDL, mxnet, h2o. We also provide sample codes to help users better understand each function, and compare the performance of various R functions for deep neural networks with Portuguese bank marketing data.