DEEP LEARNING PRACTICAL 2

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J018

BTech Data Science 3rd Year

Code :- https://github.com/visheshtechie/DL/blob/master/Lab2_Keras_Initializations_J018.ipynb

Aim :-

To learn about different initializers available in Keras.

Observations :-

In this python notebook we worked on CIFAR10 dataset. A sequential model was created with 4 layers i.e. 1 Input layer, 1 Output layer and 2 hidden layers.

The kernel initializers used had accuracies as follows :-

BASELINE MODEL

Training Accuracy : 0.47

Validation Accuracy : 0.46

RANDOM ZERO AND ONE INITIALIZERS

Training Accuracy : 0.473

Validation Accuracy : 0.478

WEIGHTS AS ONES

Training Accuracy : 0.1

Validation Accuracy : 0.1

INITIALIZED WITH CONSTANT VALUES

Training Accuracy : 0.098

Validation Accuracy : 0.1

RANDOM NORMAL

Training Accuracy : 0.476

Validation Accuracy : 0.466

RANDOM UNIFORM

Training Accuracy : 0.477

Validation Accuracy : 0.476

TRUNCATED NORMALL

Training Accuracy : 0.476

Validation Accuracy : 0.474

VARIANCE SCALING

Training Accuracy : 0.479

Validation Accuracy : 0.482

ORTHOGONAL

Training Accuracy : 0.1

Validation Accuracy : 0.1

IDENTITY

Training Accuracy : 0.419

Validation Accuracy : 0.427

LECUN UNIFORM

Training Accuracy : 0.478

Validation Accuracy : 0.485

GLORAT NORMAL

Training Accuracy : 0.481

Validation Accuracy : 0.472

GLORAT UNIFORM

Training Accuracy : 0.477

Validation Accuracy : 0.483

HE NORMAL

Training Accuracy : 0.477

Validation Accuracy : 0.467

LECUN NORMAL

Training Accuracy : 0.474

Validation Accuracy : 0.48

HE UNIFORM

Training Accuracy : 0.477

Validation Accuracy : 0.477

Conclusion :-

Successfully learnt about the performances of these kernel initializers.

The best initializers out of the above 14 initializers are *Weights as Ones* and *Initializer with Constant Values* having *validation accuracy 0.1*

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