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Experiment 2

Baseline model for classification on CIFAR10 dataset

Epoch 5/5

50000/50000 [==============================] - 36s 729us/step - loss: 1.4708 - acc: 0.4726 - val\_loss: 1.5280 - val\_acc: 0.4500

# Model with Initializer as random uniform and zero

Epoch 5/5

50000/50000 [==============================] - 39s 781us/step - loss: 1.4610 - acc: 0.4783 - val\_loss: 1.5191 - val\_acc: 0.4594

# Model with weights as ones

Epoch 5/5

50000/50000 [==============================] - 36s 728us/step - loss: 14.5063 - acc: 0.1000 - val\_loss: 14.5063 - val\_acc: 0.1000

# Model initialized with constant values

Epoch 5/5

50000/50000 [==============================] - 4s 87us/step - loss: 2.3027 - acc: 0.0967 - val\_loss: 2.3026 - val\_acc: 0.1000

# RandomNormal

Epoch 5/5

50000/50000 [==============================] - 4s 87us/step - loss: 1.4527 - acc: 0.4805 - val\_loss: 1.4860 - val\_acc: 0.4689

# RandomUniform

Epoch 5/5

50000/50000 [==============================] - 4s 87us/step - loss: 1.4522 - acc: 0.4781 - val\_loss: 1.4465 - val\_acc: 0.4825

# TruncatedNormal

Epoch 5/5

50000/50000 [==============================] - 4s 87us/step - loss: 1.4531 - acc: 0.4804 - val\_loss: 1.4810 - val\_acc: 0.4687

# VarianceScaling

Epoch 5/5

50000/50000 [==============================] - 4s 90us/step - loss: 1.4528 - acc: 0.4827 - val\_loss: 1.5435 - val\_acc: 0.4518

# Orthogonal

Epoch 5/5

50000/50000 [==============================] - 4s 89us/step - loss: 14.5063 - acc: 0.1000 - val\_loss: 14.5063 - val\_acc: 0.1000

# Identity

Epoch 5/5

50000/50000 [==============================] - 4s 90us/step - loss: 2.0548 - acc: 0.1860 - val\_loss: 2.0489 - val\_acc: 0.1869

# lecun\_uniform

Epoch 5/5

50000/50000 [==============================] - 4s 87us/step - loss: 1.4435 - acc: 0.4819 - val\_loss: 1.4514 - val\_acc: 0.4804

# glorot\_normal

Epoch 5/5

50000/50000 [==============================] - 4s 88us/step - loss: 1.4578 - acc: 0.4763 - val\_loss: 1.4473 - val\_acc: 0.4864

# glorot\_uniform

Epoch 5/5

50000/50000 [==============================] - 4s 89us/step - loss: 1.4542 - acc: 0.4805 - val\_loss: 1.4421 - val\_acc: 0.4877

# he\_normal

Epoch 5/5

50000/50000 [==============================] - 4s 87us/step - loss: 1.4606 - acc: 0.4799 - val\_loss: 1.5011 - val\_acc: 0.4680

# lecun\_normal

Epoch 5/5

50000/50000 [==============================] - 4s 89us/step - loss: 1.4530 - acc: 0.4787 - val\_loss: 1.4863 - val\_acc: 0.4701

# he\_uniform

Epoch 5/5

50000/50000 [==============================] - 4s 87us/step - loss: 1.4669 - acc: 0.4774 - val\_loss: 1.5098 - val\_acc: 0.4655

Conclusion:

Under this setting glorot unniform out performes by 5%