DL LAB 2

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| --- | --- | --- | --- | --- | --- |
| Sr No. | Model Type | Train Accuracy | Train Loss | Validation Accuracy | Validation Loss |
| 1 | Baseline Model | 0.4752 | 1.46780 | 0.4721 | 1.4834 |
| 2 | Constant | 0.0969 | 2.3027 | 0.1000 | 2.3026 |
| 3 | Random Uniform | 0.4783 | 1.4555 | 0.4727 | 1.4784 |
| 4 | Ones | 0.1000 | 14.5063 | 0.1000 | 14.5063 |
| 5 | Random Normal | 0.4768 | 1.4365 | 0.4812 | 1.4771 |
| 6 | Truncated Normal | 0.4791 | 1.4506 | 0.4796 | 1.4681 |
| 7 | Variance Scaling | 0.4810 | 1.4509 | 0.4544 | 1.5210 |
| 8 | Orthogonal | 0.1000 | 14.5063 | 0.1000 | 14.5063 |
| 9 | Identity | 0.3280 | 1.8331 | 0.3357 | 1.8187 |
| 10 | Lecun Uniform | 0.4772 | 1.4553 | 0.4777 | 1.4605 |
| 11 | Glorot Normal | 0.4801 | 1.4510 | 0.4666 | 1.4790 |
| 12 | Glorot Uniform | 0.4832 | 1.4424 | 0.4894 | 1.4535 |
| 13 | HE Normal | 0.4803 | 1.4556 | 0.4586 | 1.5078 |
| 14 | Lecun Normal | 0.4782 | 1.4507 | 0.4779 | 1.4649 |
| 15 | HE Uniform | 0.4782 | 1.4559 | 0.4763 | 1.4663 |

Conclusion:

Model with lecun\_normal has the highest accuracy and validation accuracy hence it is the mostoptimal initializer. Under this experimental setting, Glorot Uniform outperforms the others by 5%.

CIFAR 100:

Accuracy-0.2910, Validation Accuracy-0.2470

MNIST:

Accuracy-0.9960, Validation Accuracy-0.9794

Fashion MNIST:

Accuracy-0.9188, Validation Accuracy-0.8874

IRIS:

Accuracy-0.9662, Validation Accuracy-1.0