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The following table shows the accuracy obtained on class 0 and on class 1 for each model. The statistics given are with regard to the raw data set shared containing 2669 samples. Training was done on the data set containing 298 samples.

|  |  |  |
| --- | --- | --- |
| Model | Defective Accuracy % | NonDefective Accuracy % |
| 1 | 100 | 0 |
| 2 | 95.9 | 57.0 |
| 3 | 97.3 | 70.1 |
| 4 | 95.9 | 78.0 |
| 5 | 97.3 | 71.0 |
| 6 | 96.6 | 78.1 |
| 7 | 93.9 | 72.8 |
| 8 | 86.5 | 85.6 |
| 9 | 96.6 | 78.3 |
| 10 | 99.3 | 82.0 |
| 11 | 24.8 | 61.7 |

The basic architecture taken is that of Lenet5. All have been trained for 100 epochs. Rest of the details are outlined in the following table.

|  |  |
| --- | --- |
| Model | Details |
| 1 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,Tanh, Adam, Average Pooling, Cross Entropy Loss, L2 Regularization ( lambda = 0.65), |
| 2 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,Tanh, Adam, Average Pooling, KL Divergence Loss |
| 3 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,Tanh, Adam, Max Pooling, KL Divergence Loss |
| 4 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,Tanh, Adam, Max Pooling, Batch Normalization, KL Divergence Loss |
| 5 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,ReLU, Adam, Max Pooling, Batch Normalization, KL Divergence Loss |
| 6 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,ReLU, Adam, Max Pooling, Batch Normalization, Cross Entropy Loss |
| 7 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,Tanh, Adam, Max Pooling, Batch Normalization, Cross Entropy Loss |
| 8 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,Tanh, Adam, Max Pooling, Batch Normalization, Cross Entropy Loss, L2 Regularisation ( lambda = 0.11) |
| 9 | Input 32x32, 238 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,Tanh, RMSprop with default settings in Pytorch, Max Pooling, Batch Normalization, Cross Entropy Loss |
| 10 | Input 32x32, 298 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,ReLU, Adam, Max Pooling, Batch Normalization, Cross Entropy Loss |
| 11 | Input 32x32, 5040 samples, Batch Size 67, Normalized to 0 mean and 1 stddev, learning rate = 10-3 ,ReLU, Adam, Max Pooling, Batch Normalization, Cross Entropy Loss |