Note: All the images are color and have 3 layers (R,G,B) and not like the grayscale images.

BEE1 Dataset

Architecture

2 Convolutional Layers with Max-Pooling and 2 Fully Connected Layers having an architecture of (100 x 2) with ReLU in all the layers as the activation function and Softmax as the activation function in the last fully connected layer.

Parameters

- Optimizer = “sgd”,
- loss=”categorical_crossentropy”,
- learning_rate = 0.01,
- Number of Epochs = 50

Accuracies on respective data
Training Accuracy: **99.98%**
Testing Accuracy: **99.58%**
Validation Accuracy: **99.03%**

All the images in the **BEE2_1S** and **BEE2_2S** have been resized to 90x90 size as there were some images which are of dimensions 150x150.

BEE2_1S Dataset

Architecture

3 Convolutional Layers and 2 Fully Connected Layers having an architecture of (100 x 2) with ReLU in all the layers as the activation function and Softmax as the activation function in the last fully connected layer

Parameters

- Optimizer = “sgd”,
- loss=”categorical_crossentropy”,
- learning_rate = 0.01,
- Number of Epochs = 30

Training Step: 106140 | total loss: 0.26317 | time: 118.479s
| SGD | epoch: 030 | loss: 0.26317 - acc: 0.9838 | val_loss: 0.36904 - val_acc: 0.9369 -- iter: 35374/35374

Accuracies on respective data
Training Accuracy: **98.38%**
Testing Accuracy: **93.69%**
Validation Accuracy: **77.10%**

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BEE2_2S Dataset

Architecture

3 Convolutional Layers and 2 Fully Connected Layers having an architecture of (100 x 2) with ReLU in all the layers as the activation function and Softmax as the activation function in the last fully connected layer

Parameters

- Optimizer = “sgd”,
- loss=”categorical_crossentropy”,
- learning_rate = 0.001,
- Number of Epochs = 30

Training Step: 86910 | total loss: 0.20649 | time: 93.539s
| SGD | epoch: 030 | loss: 0.20649 - acc: 0.9392 | val_loss: 0.17313 - val_acc: 0.9420 -- iter: 28965/28965

Accuracies on respective data
Training Accuracy: **93.92%**
Testing Accuracy: **94.20%**
Validation Accuracy: **77.24%**

Note: For Buzz 1, 7000 samples have been used for training and the rest has been used for the testing data.

For the Buzz 1 and Buzz 2 Datasets, all the audio matrices have been sliced to the middle part of length 44000

BUZZ 1 Dataset

Architecture

Input Layer: 44000 of shape [440,100,1]
4 Convolutional Layers and 3 Fully Connected Layers having an architecture of (100 x 60 x 3) with ReLU in all the layers as the activation function and Softmax as the activation function in the last fully connected layer

Parameters

- Optimizer = “sgd”,
- loss=”categorical_crossentropy”,
- learning_rate = 0.01,
- Number of Epochs = 50

Training Step: 35050 | total loss: 0.00044 | time: 35.793s
| SGD | epoch: 050 | loss: 0.00044 - acc: 1.0000 | val_loss: 0.16160 - val_acc: 0.9682 -- iter: 7001/7001

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Accuracies on respective data
Training Accuracy: **100%**
Testing Accuracy: **96.82%**
Validation Accuracy: **68.34%**

BUZZ 2 Dataset

Architecture

Input Layer: 44000 of shape [440,100,1]
4 Convolutional Layers and 3 Fully Connected Layers having an architecture of (90 x 50 x 3) with ReLU in all the layers as the activation function and Softmax as the activation function in the last fully connected layer

Parameters

- Optimizer = “sgd”,
- loss=”categorical_crossentropy”,
- learning_rate = 0.01,
- Number of Epochs = 50

Training Step: 42050 | total loss: 0.44922 | time: 37.764s
| SGD | epoch: 050 | loss: 0.44922 - acc: 0.6724 | val_loss: 0.40840 - val_acc: 0.7281 -- iter: 8402/8402

Accuracies on respective data
Training Accuracy: **67.24%**
Testing Accuracy: **72.81%**
Validation Accuracy: **61.33%**