All the image datasets have been individually preprocessed into respective pickle files and used when respective data needs to be loaded.

BEE1 Dataset

Architecture

Input Layer: 1024 of shape [32,32,1]

2 Fully Connected Layers having an architecture of (60 x 2) with ReLU and Softmax as the activation functions respectively.

Parameters

- Optimizer = "sgd",
- loss="categorical_crossentropy",
- learning_rate = 0.01,
- Number of Epochs = 50
- Regularization = 'L2'

When the network is validated on the BEE1 validation data, the validation accuracy of the net was **94.47%**

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

Input Layer: 8100 of shape [90,90,1]

3 Fully Connected Layers having an architecture of (8100 x 60 x 2) with ReLU, ReLU and Softmax as the activation functions respectively.

Parameters

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

When the network is validated on the BEE2_1S validation data, the validation accuracy of the net was **81.25%**

BEE2_2S Dataset

Architecture

Input Layer: 8100 of shape [90,90,1]

3 Fully Connected Layers having an architecture of (100 x 60 x 2) with ReLU, RelU and Softmax as the activation functions respectively.

Parameters

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

When the network is validated on the BEE2_2S validation data, the validation accuracy of the net was **75.30%**

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

For Buzz 1 and Buzz 2 datasets, the audios are cropped in the middle with a length of 2000. Mid of the array is found and 1000 elements of the left and right are accessed and merged into one array.

BUZZ 1 Dataset
Architecture
Input Layer: 2000 of shape [100,20,1]
3 Fully Connected Layers having an architecture of (100 x 60 x 3) with ReLU, ReLU and Softmax as the activation functions respectively.
Parameters
- Optimizer = "sgd",
- loss="categorical_crossentropy",
- learning_rate = 0.01,
- Number of Epochs = 100
- Regularizer = 'L2'

When the network is validated on the BEE2_2S validation data, the validation accuracy of the net was **64.08%**

BUZZ 2 Dataset
Architecture
Input Layer: 2000 of shape [100,20,1]
3 Fully Connected Layers having an architecture of (90 x 50 x 3) with ReLU, ReLU and Softmax as the activation functions respectively.
Parameters
- Optimizer = "sgd",
- loss="categorical_crossentropy",
- learning_rate = 0.01,
- Number of Epochs = 100
- Regularizer = 'L2'

When the network is validated on the BEE2_2S validation data, the validation accuracy of the net was **59.67%**