Best RALCT Architecture - achieved 94.56% on UrbanSound8K

```
Model: "model_aug"
_________________________________________________________________________________________________
 Layer (type)                   Output Shape         Param #     Connected to
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 input (InputLayer)             [(None, 220500)]     0           []

 log_mel_spectrogram (LogMelSpe  (None, 496, 128, 1)  0          ['input[0][0]']
 ctrogram)

 tf.signal.mfccs_from_log_mel_s  (None, 496, 128, 1)  0          ['log_mel_spectrogram[0][0]']
 pectrograms (TFOpLambda)

 batch_normalization (BatchNorm  (None, 496, 128, 1)  512        ['log_mel_spectrogram[0][0]']
 alization)

 batch_normalization_1 (BatchNo  (None, 496, 128, 1)  512        ['tf.signal.mfccs_from_log_mel_sp
 rmalization)                                                    ectrograms[0][0]']

 tf.concat (TFOpLambda)         (None, 496, 128, 2)  0           ['batch_normalization[0][0]',
                                                                  'batch_normalization_1[0][0]']

 conv2d (Conv2D)                (None, 496, 128, 32  1632        ['tf.concat[0][0]']
                                )

 batch_normalization_2 (BatchNo  (None, 496, 128, 32  128        ['conv2d[0][0]']
 rmalization)                   )

 max_pooling2d (MaxPooling2D)   (None, 496, 42, 32)  0           ['batch_normalization_2[0][0]']

 dropout (Dropout)              (None, 496, 42, 32)  0           ['max_pooling2d[0][0]']

 conv2d_1 (Conv2D)              (None, 496, 42, 64)  18496       ['dropout[0][0]']
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batch_normalization_3 (BatchNo  (None, 496, 42, 64)  256       ['conv2d_1[0][0]']
rmalization)

max_pooling2d_1 (MaxPooling2D)  (None, 165, 14, 64)  0         ['batch_normalization_3[0][0]']

dropout_1 (Dropout)             (None, 165, 14, 64)  0         ['max_pooling2d_1[0][0]']

conv2d_2 (Conv2D)               (None, 165, 14, 32)  18464     ['dropout_1[0][0]']

batch_normalization_4 (BatchNo  (None, 165, 14, 32)  128       ['conv2d_2[0][0]']
rmalization)

max_pooling2d_2 (MaxPooling2D)  (None, 55, 4, 32)    0         ['batch_normalization_4[0][0]']

dropout_2 (Dropout)             (None, 55, 4, 32)    0         ['max_pooling2d_2[0][0]']

positional_encoding (Positiona  (None, 55, 4, 32)    7040      ['dropout_2[0][0]']
lEncoding)

layer_normalization (LayerNorm  (None, 55, 4, 32)    64        ['positional_encoding[0][0]']
alization)

multi_head_attention (MultiHea  (None, 55, 4, 32)    16800     ['layer_normalization[0][0]',
dAttention)                                                     'layer_normalization[0][0]']

dropout_3 (Dropout)             (None, 55, 4, 32)    0         ['multi_head_attention[0][0]']

tf.__operators__.add (TFOpLamb  (None, 55, 4, 32)    0         ['dropout_3[0][0]',
da)                                                             'positional_encoding[0][0]']

layer_normalization_1 (LayerNo  (None, 55, 4, 32)    64        ['tf.__operators__.add[0][0]']
rmalization)

dense (Dense)                   (None, 55, 4, 32)    1056      ['layer_normalization_1[0][0]']

dropout_4 (Dropout)             (None, 55, 4, 32)    0         ['dense[0][0]']

dense_1 (Dense)                 (None, 55, 4, 32)    1056      ['dropout_4[0][0]']
```

```
tf.__operators__.add_1 (TFOpLa  (None, 55, 4, 32)   0           ['dense_1[0][0]',
mbda)                                                            'tf.__operators__.add[0][0]']

layer_normalization_2 (LayerNo  (None, 55, 4, 32)   64          ['tf.__operators__.add_1[0][0]']
rmalization)

multi_head_attention_1 (MultiH  (None, 55, 4, 32)   16800       ['layer_normalization_2[0][0]',
eadAttention)                                                    'layer_normalization_2[0][0]']

dropout_5 (Dropout)            (None, 55, 4, 32)    0           ['multi_head_attention_1[0][0]']

tf.__operators__.add_2 (TFOpLa  (None, 55, 4, 32)   0           ['dropout_5[0][0]',
mbda)                                                            'tf.__operators__.add_1[0][0]']

layer_normalization_3 (LayerNo  (None, 55, 4, 32)   64          ['tf.__operators__.add_2[0][0]']
rmalization)

dense_2 (Dense)                (None, 55, 4, 32)    1056        ['layer_normalization_3[0][0]']

dropout_6 (Dropout)            (None, 55, 4, 32)    0           ['dense_2[0][0]']

dense_3 (Dense)                (None, 55, 4, 32)    1056        ['dropout_6[0][0]']

tf.__operators__.add_3 (TFOpLa  (None, 55, 4, 32)   0           ['dense_3[0][0]',
mbda)                                                            'tf.__operators__.add_2[0][0]']

flatten (Flatten)              (None, 7040)         0           ['tf.__operators__.add_3[0][0]']

dense_4 (Dense)                (None, 32)           225312      ['flatten[0][0]']

dropout_7 (Dropout)            (None, 32)           0           ['dense_4[0][0]']

dense_5 (Dense)                (None, 10)           330         ['dropout_7[0][0]']

==================================================================================================
Total params: 310,890
Trainable params: 310,122
Non-trainable params: 768
```