

MACHINE LEARNING MODEL COMPARISON BASED ON SOME METRICS

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Deep Learning Models

Activation = 'softplus', 'softsign', 'selu', 'elu', 'exponential', 'sigmoid', 'relu', 'tanh'

Optimizers = 'sgd', 'rmsprop', 'adam', 'adadelta', 'adagrad', 'adamax', 'nadam', 'ftrl'

Binary Loss = 'binary_crossentropy', 'hinge', 'squared_hinge', 'huber'

RNN > DNN > CNN

Model Architectures

Deep Neural Network :

```
Dense(64, input_shape = (30,), activation='relu')
Dense(128, activation='relu')
Dense(128, activation='relu')
Dense(64, activation='relu')
Dense(1)
```

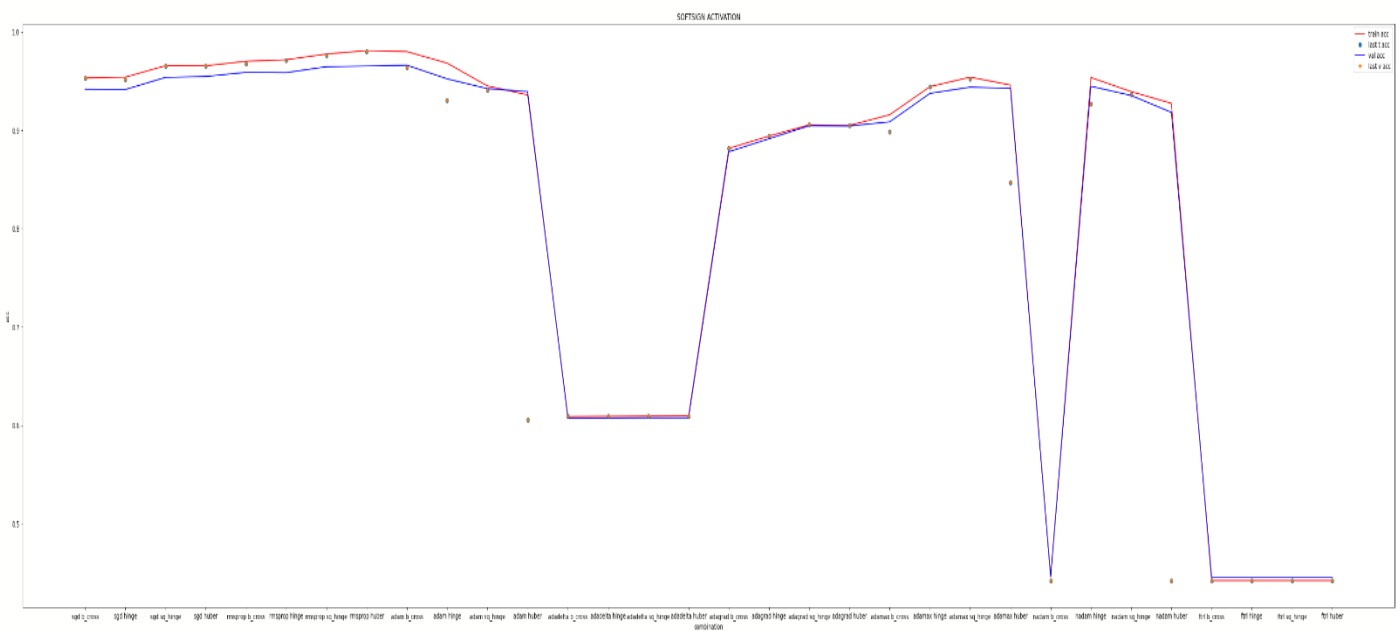
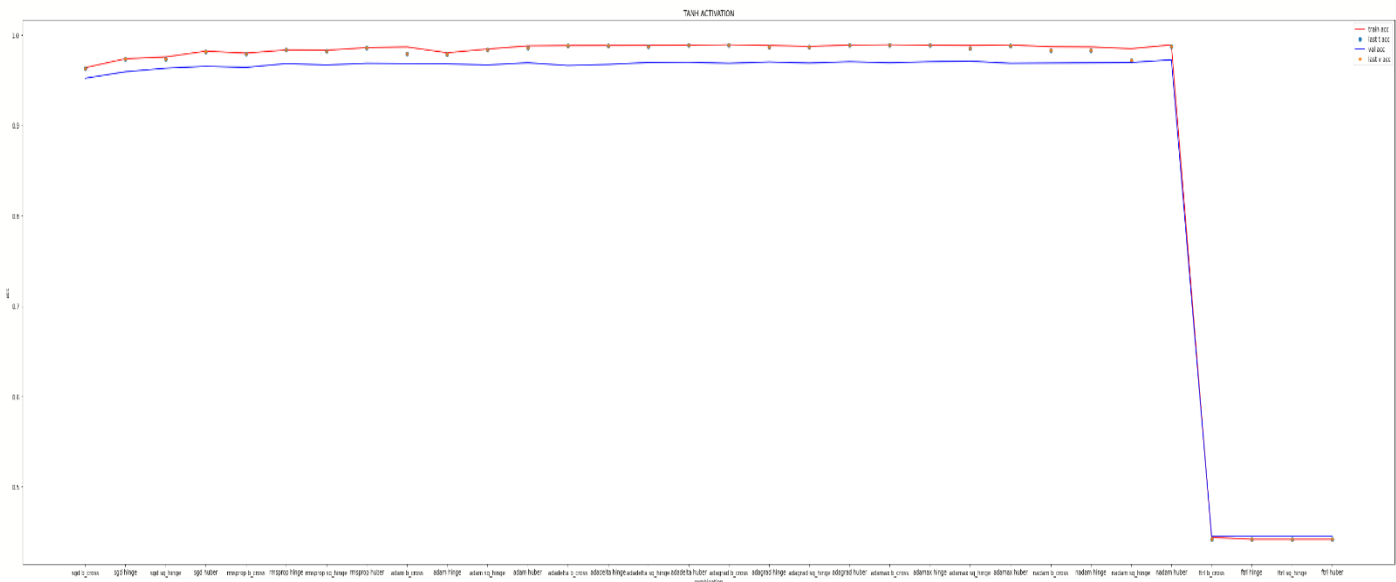
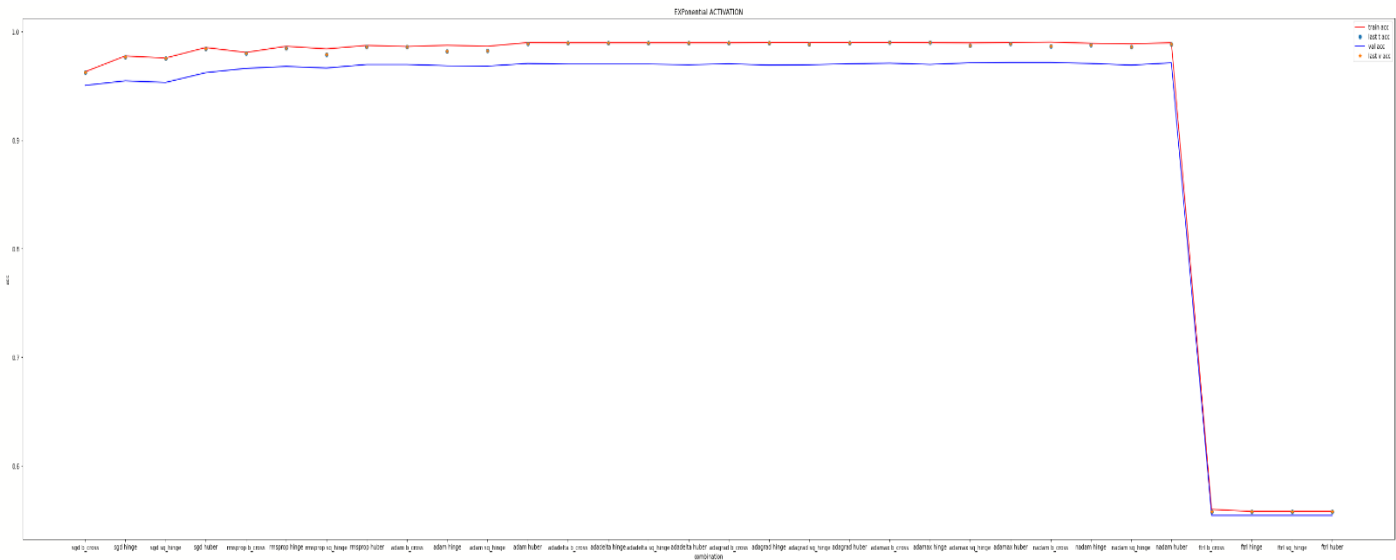
Worst Loss Functions : None

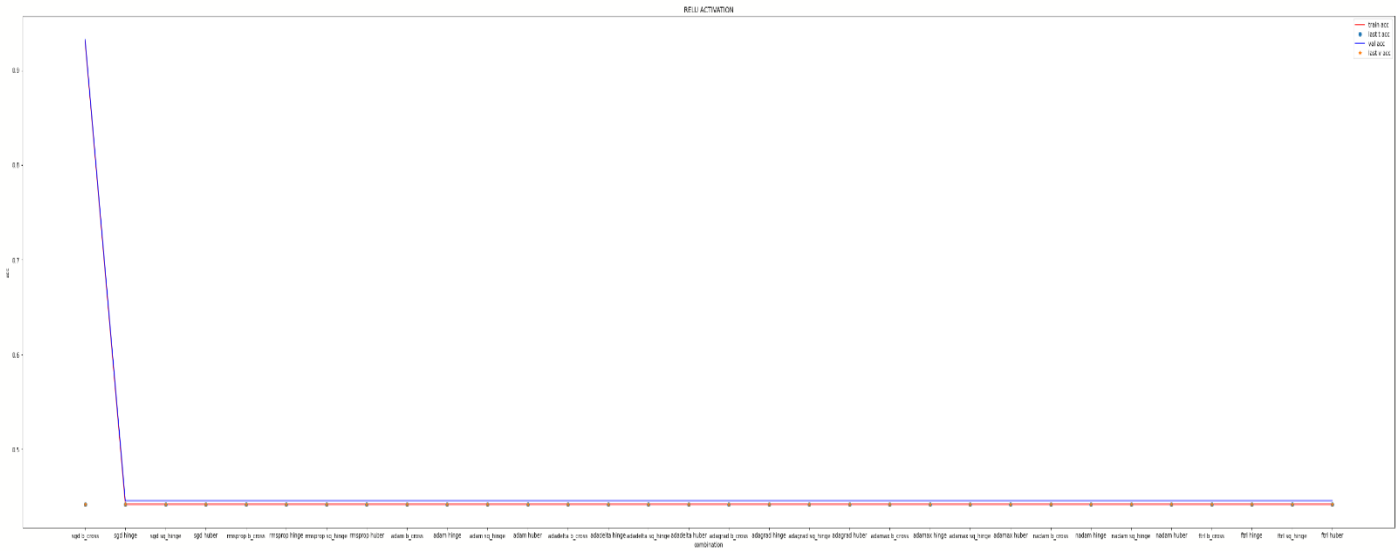
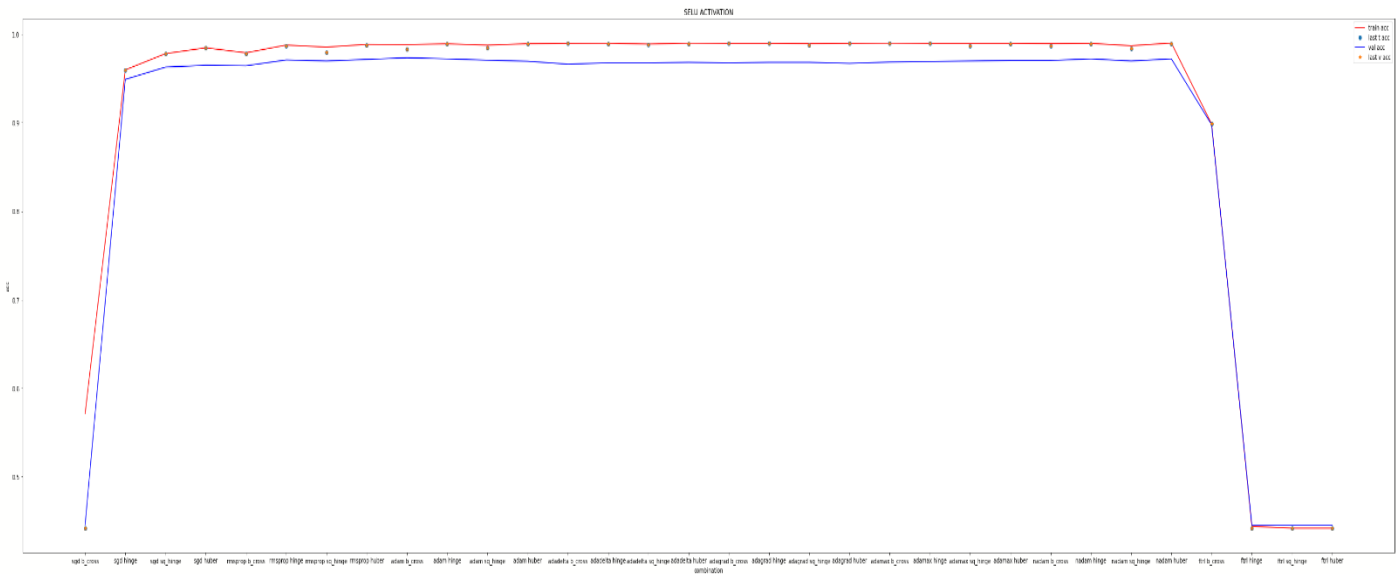
Worst Optimizers : ftrl

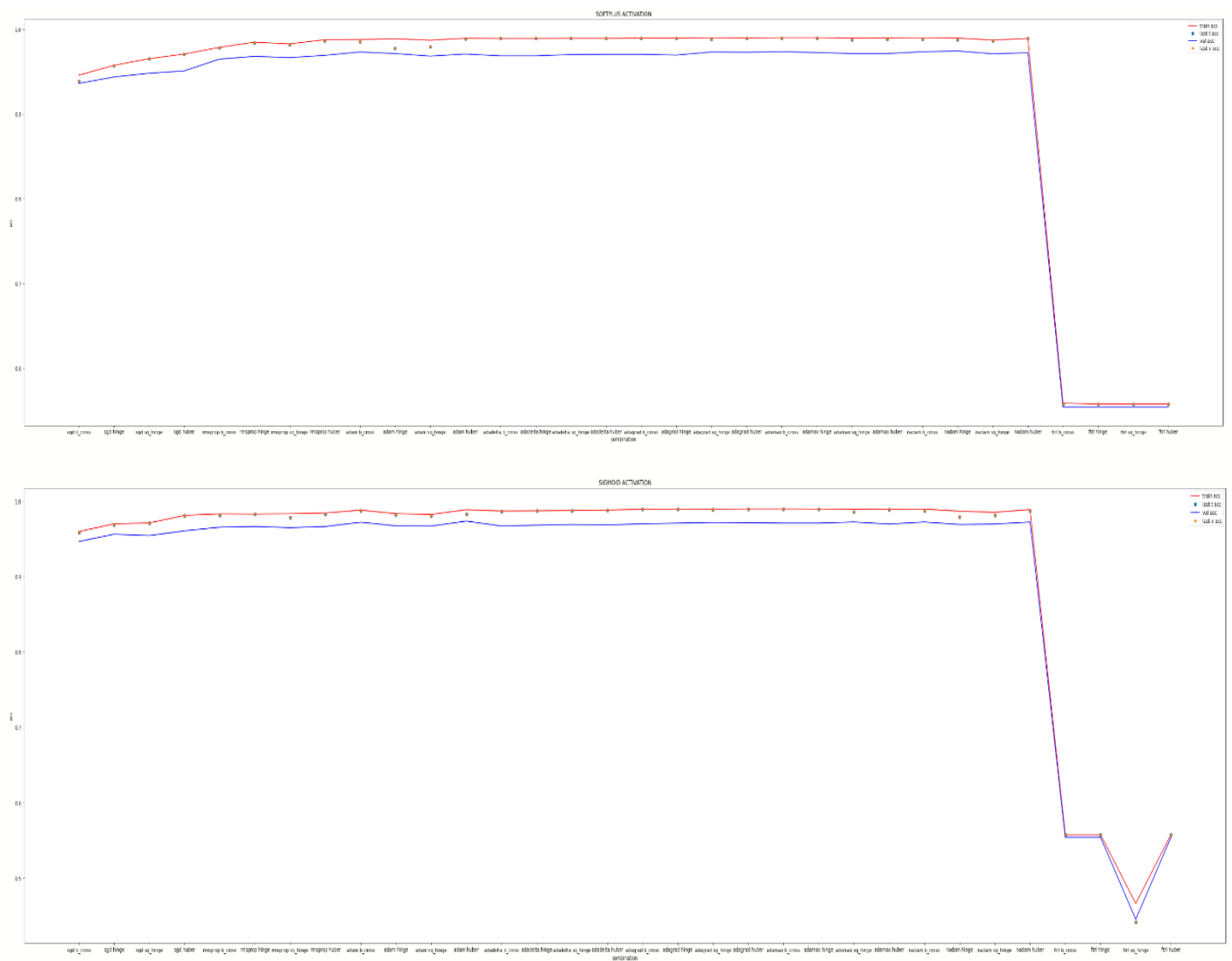
Worst Activation Functions : relu

Bad Combinations : 'elu – sgd – binary_crossentropy', 'selu – sgd – binary_crossentropy', 'softsign – adadelta' 'softsign – nadam – binart_crossentropy'









Recurrent Neural Network :

```
keras.layers.LSTM(64, activation='relu', return_sequences=True, input_shape=(1,30))
```

keras.layers.LSTM(128, activation='relu')

```
keras.layers.Dense(128,activation='relu')
```

keras.layers.Dense(64,activation='relu')

keras.layers.Dropout(0.2)

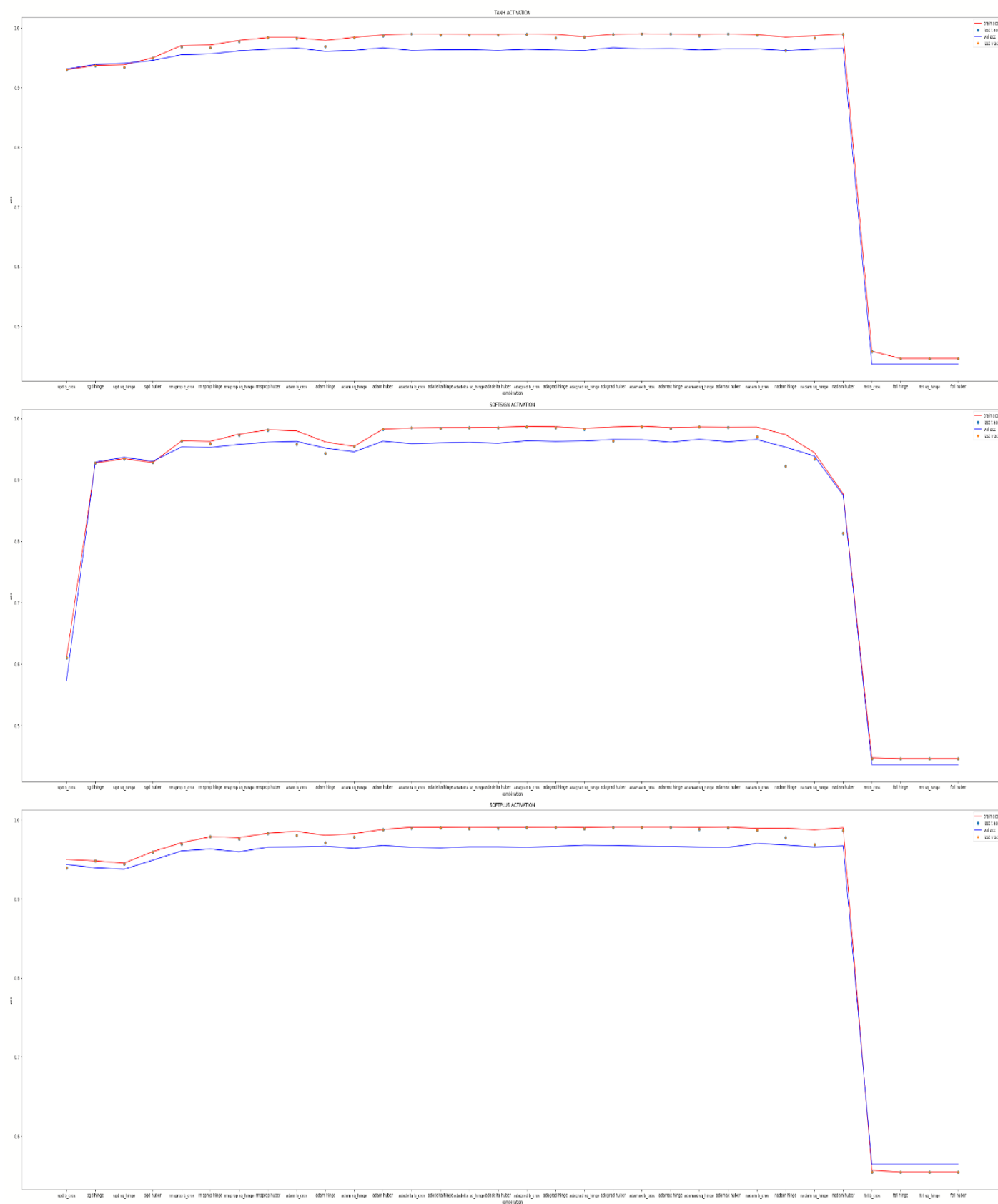
keras.layers.Dense(1)

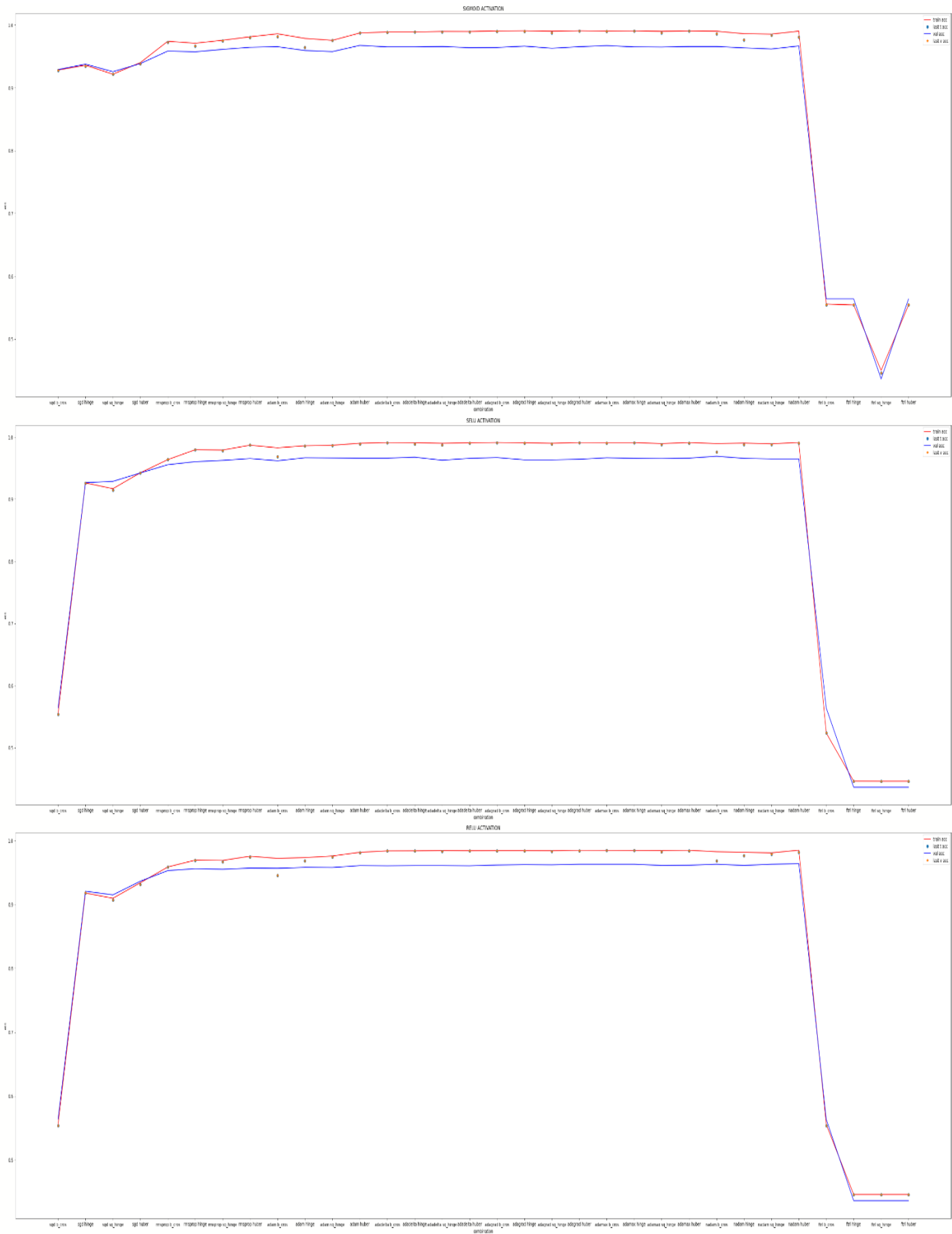
Worst Loss Functions : None

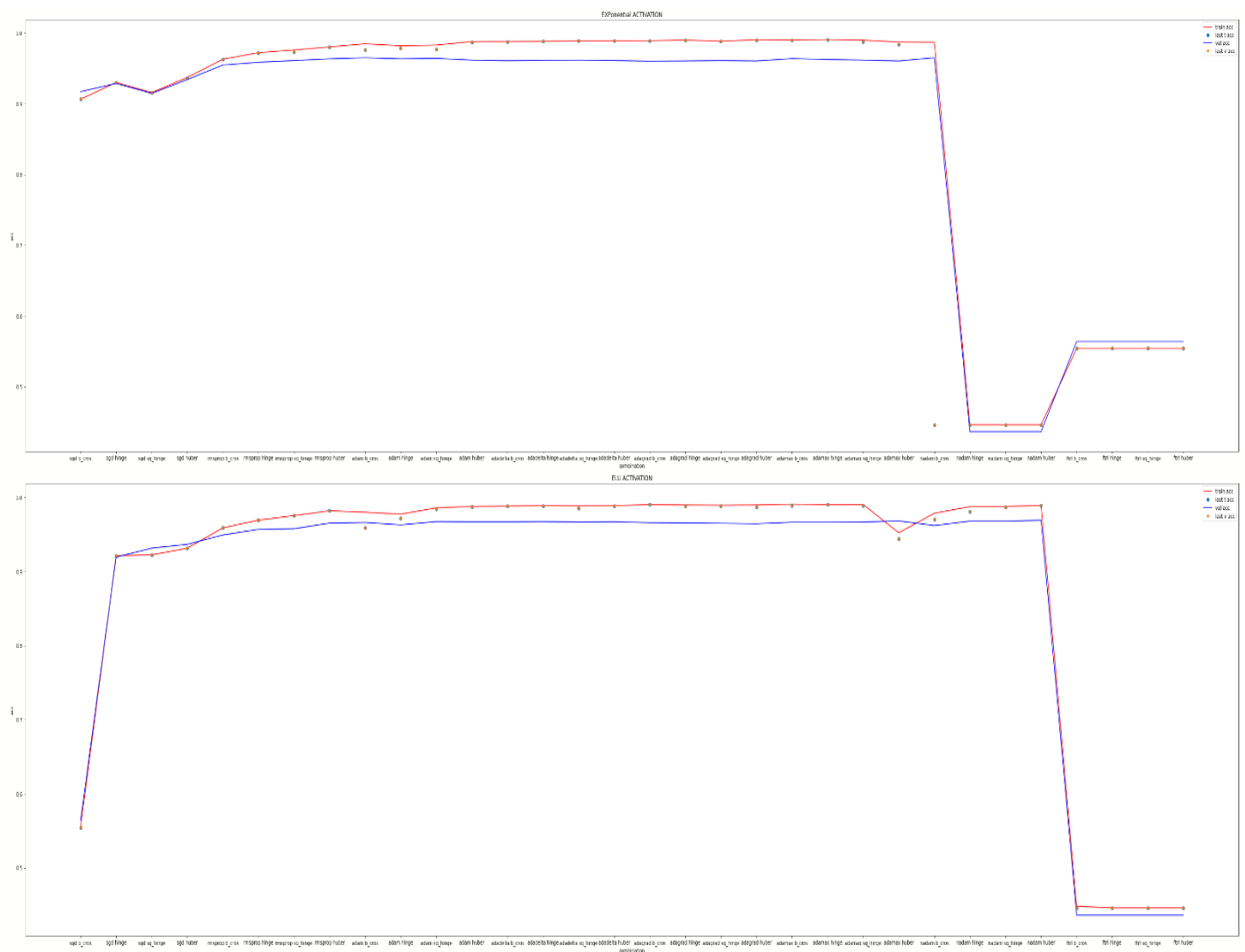
Worst Optimizers : ftrl

Worst Activation Functions : None

Bad Combinations : ‘elu – sgd – binary_crossentropy’, ‘exp – ftrl – nadam’, ‘relu – sgd – binary_crossentropy’







Convolutional Neural Network :

```
keras.layers.Conv2D(32,(1,1), activation='relu',input_shape=(2,5,3))
keras.layers.MaxPool2D(2,2)
keras.layers.Conv2D(64,(1,1),activation='relu')
keras.layers.Conv2D(128,(1,1),activation='relu')
keras.layers.Dropout(0.2)
keras.layers.Flatten()
keras.layers.Dense(128,activation='relu')
keras.layers.Dense(128,activation='relu')
keras.layers.Dropout(0.2)
keras.layers.Dense(1)
```

Worst Loss Functions : None

Worst Optimizers : ftrl

