Report

D1265209 Jensen

fullyConnectedLayer

The fullyConnectedLayer is a classic neural network layer, typically used in the final layers of the network. It connects every input neuron to every output neuron, meaning each input is connected to each output.

Input: A vector or matrix where each element represents a feature.

Output: A vector where each element represents a feature after applying the weights and biases of the fully connected layer.

OutputSize: Specifies the size of the output, i.e., the dimension of the output vector. This parameter determines the number of neurons in this layer. Setting the OutputSize can control the complexity and capacity of the model. For example, in classification tasks, OutputSize is often set to the number of classes.

softmaxLayer

The softmaxLayer is an activation function layer typically used in the final layer of multi-class classification problems. It converts the input vector into a probability distribution where all outputs sum to 1.

Input: A vector where each element represents a score for a class (unnormalized probabilities).

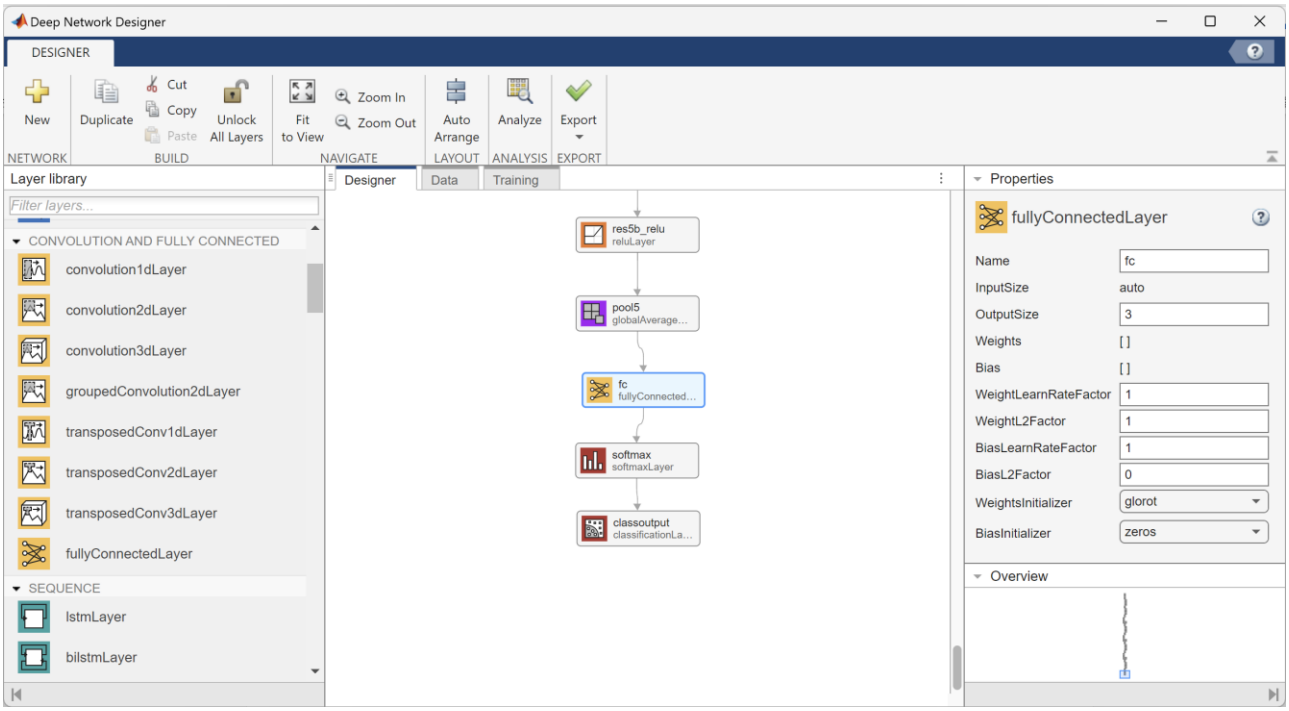
Output: A vector where each element represents the probability of the corresponding class (normalized probability values, ranging from 0 to 1, summing to 1).

classificationLayer

The classificationLayer is the final layer of the network, used to compute the loss and evaluate the classification results. It uses the cross-entropy loss function to measure the error between the predicted values and the actual labels.

Input: The probability distribution vector from the softmaxLayer.

Output: The classification loss, used for backpropagation to adjust the network weights.


Deep Network Designer
DESIGNER
New
Duplicate
Cut
Copy
Paste
Unlock All Layers
Fit to View
Zoom In
Zoom Out
Auto Arrange
Analyze
Export
NETWORK
BUILD
NAVIGATE
LAYOUT
ANALYSIS
EXPORT
Layer library
Filter layers...
CONVOLUTION AND FULLY CONNECTED
convolution1dLayer
convolution2dLayer
convolution3dLayer
groupedConvolution2dLayer
transposedConv1dLayer
transposedConv2dLayer
transposedConv3dLayer
fullyConnectedLayer
SEQUENCE
lstmLayer
bilstmLayer
Designer
Data
Training
res5b_relu
reluLayer
pool5
globalAverage...
fc
fullyConnected...
softmax
softmaxLayer
classoutput
classificationLa...
Properties
fullyConnectedLayer
Name
fc
InputSize
auto
OutputSize
3
Weights
[ ]
Bias
[ ]
WeightLearnRateFactor
1
WeightL2Factor
1
BiasLearnRateFactor
1
BiasL2Factor
0
WeightsInitializer
glorot
BiasInitializer
zeros
Overview