Results Of Experimenting With Playground.TensorFlow.Org

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For the functions; i.e., neural networks with zero layers, generating circular, cross-shaped, and linear decision boundaries, I sought to use maximal possible learning rate, sigmoid activation function, no regularization, maximal noise, and maximal batch normalization to discover the limits of coarseness for each model.

For the neural network generating spiral decision boundaries, I sought to find the best class regions.

Epoch 000,030 · Learning rate 10 · Activation Sigmoid · Regularization None · Regularization rate 0 · Problem type Classification

DATA
Which dataset do you want to use?

Ratio of training to test data: 90%

Noise: 50

Batch size: 30

REGENERATE

FEATURES
Which properties do you want to feed in?

X_1
X_2
X_1^2
X_2^2
X_1X_2
$\sin(X_1)$
$\sin(X_2)$

0 HIDDEN LAYERS

OUTPUT
Test loss 0.123
Training loss 0.145

Colors shows data, neuron and weight values.

☑ Show test data   ☐ Discretize output

Epoch 000,958 · Learning rate 0.03 · Activation Sigmoid · Regularization None · Regularization rate 0 · Problem type Classification

DATA
Which dataset do you want to use?

Ratio of training to test data: 90%

Noise: 0

Batch size: 10

REGENERATE

FEATURES
Which properties do you want to feed in?

X_1
X_2
X_1^2
X_2^2
X_1X_2
$\sin(X_1)$
$\sin(X_2)$

2 HIDDEN LAYERS

5 neurons   2 neurons

The outputs are mixed with varying weights, shown by the thickness of the lines.

This is the output from one neuron. Hover to see it larger.

OUTPUT
Test loss 0.002
Training loss 0.018

Colors shows data, neuron and weight values.

☑ Show test data   ☐ Discretize output