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Welcome to the World of Machine Learning!

This is an interactive, coding-free demo where you will create drawings from different categories, train machine learning models on these drawings, and test what they learned!

First, create a dataset in the annotate tab.

Next, review your dataset in the review tab.

Then, train your models in the train tab.

Finally, test how well the training worked in the testing tab.

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Get to work

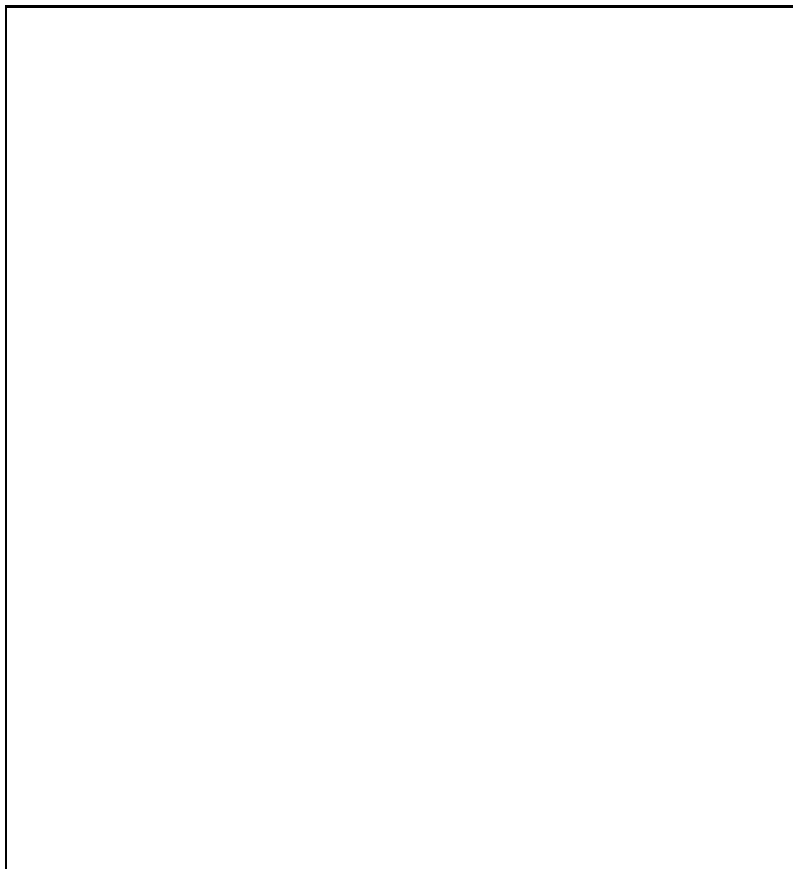
Generate and label data to build a dataset.

The goal is to teach the neural network to distinguish between different categories of drawings. This could mean identifying a drawing of a '1' from that of a '0', the character 'A' from the character 'B', or a smiley face from a frowny face. You are free to teach it anything you can draw, but it will only learn from the drawings. The neural network has no prior knowledge; it can only know what you tell it. So generate your data carefully, but experiment around and have fun.

Start by drawing 10 A's and 10 B's in the box below. Make sure you have typed in the correct category into the 'Classification' text box: 'A' for the A's and 'B' for the B's. Click 'Save Drawing' to save a drawing to the dataset and click 'Clear Drawing' if you do not like what you have drawn.

[Save Drawing](#)[Clear Drawing](#)

Classification:



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Admire your drawings

View and modify to your data set: clear the dataset, save your dataset, or upload another dataset.

[Download Your Dataset](#)[Upload a Dataset](#)[Clear Your Dataset](#)

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Let the magic happen

A model is a function whose output depends on a set of weights and an input. In this case, the input is a picture and the output is a category. This training step finds weights that adjust the output to be the correct category for the pictures in your dataset. Hopefully, this same model will correctly classify pictures that it hasn't seen.

First select your chosen models in the dropdown menu. Click "Train Models" to train your selected models. You will have to do this whenever you add new pictures to your dataset. This may take some time: be patient.

Models to Train

- ☐ Linear Regression ?
- ☐ Shallow Convolutional NN ?
- ☐ Deep Convolutional NN ?

Train Models

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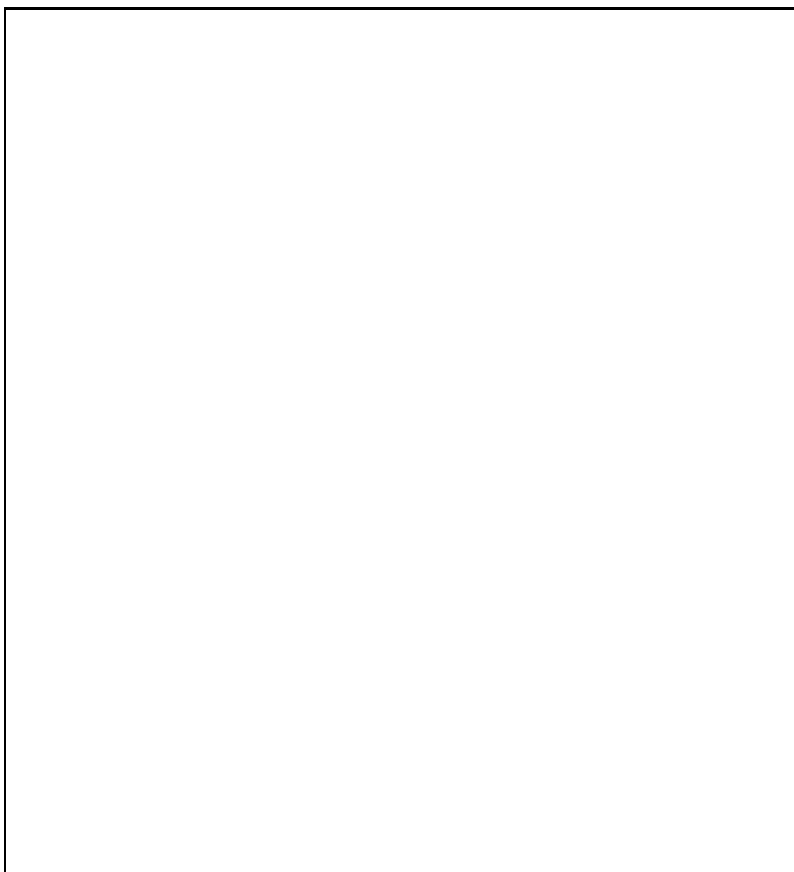
Hope for the best

Test how well the neural net has learned your dataset.

Select a model to test and draw a picture from one of your categories in the box below. As you draw, the model will classify the drawing, outputting both its classification and the probability distribution over the categories. See where the model succeeds and where it fails. If it is not performing up to your standards, add some more pictures, retrain it, and test it again.



Classification:

A large, empty rectangular box with a thin black border, intended for the user to draw a picture from one of their categories.