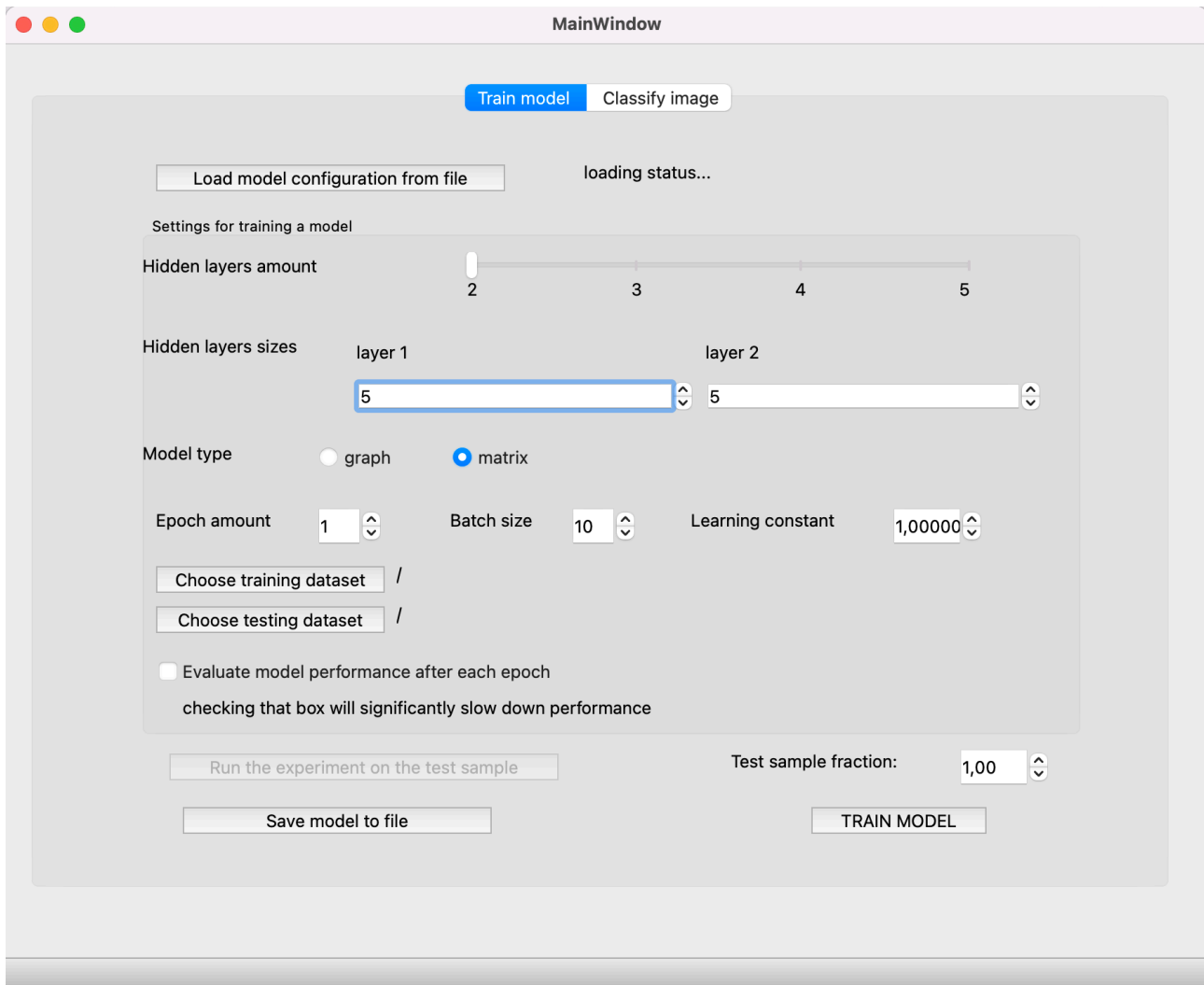```
git clone ….
make
./../build/MLP.app/Contents/MacOS/MLP
```



press **Choose training dataset**
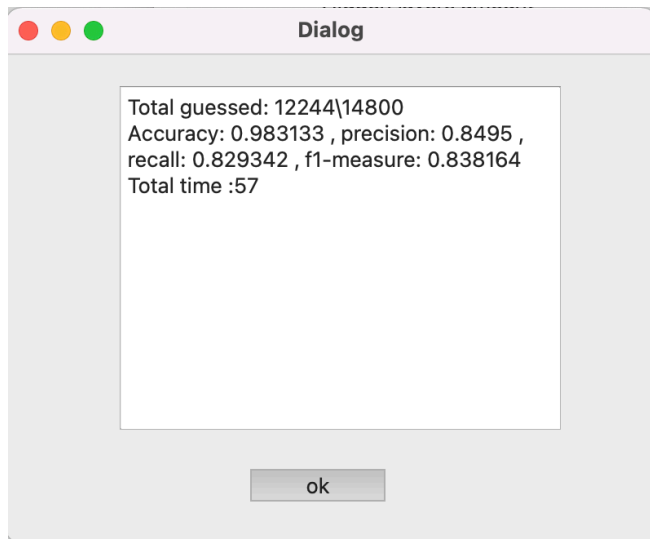resources
emnist-letters-train.csv

press **Choose testing dataset**
resources
emnist-letters-test.csv

Press **Load model configuration from file**
resources
configuration.config

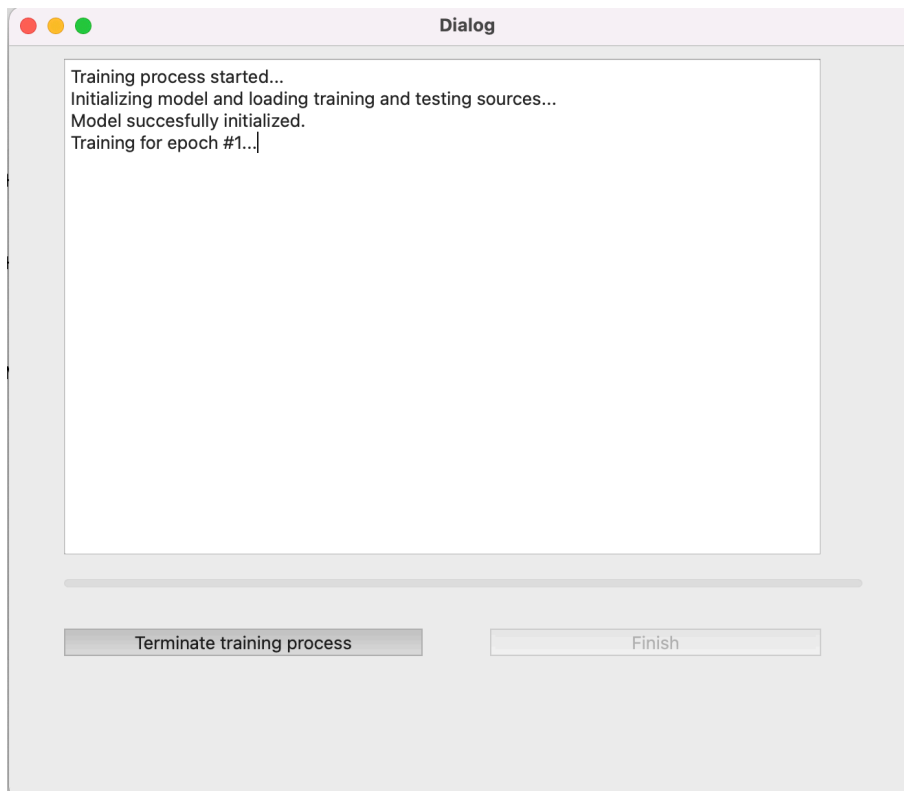Choose **Hidden layers amount** and **Hidden layers sizes** for each layer

**Run the experiment on the test sample**

Wait…..have patience
You will be able to see a window like this

## Dialog

Total guessed: 12244\14800
Accuracy: 0.983133 , precision: 0.8495 ,
recall: 0.829342 , f1-measure: 0.838164
Total time :57

ok

Statistics, so feel free to close and move on.

Try clicking on **TRAIN MODEL**

## Dialog

Training process started...
Initializing model and loading training and testing sources...
Model succesfully initialized.
Training for epoch #1...|

Terminate training process          Finish
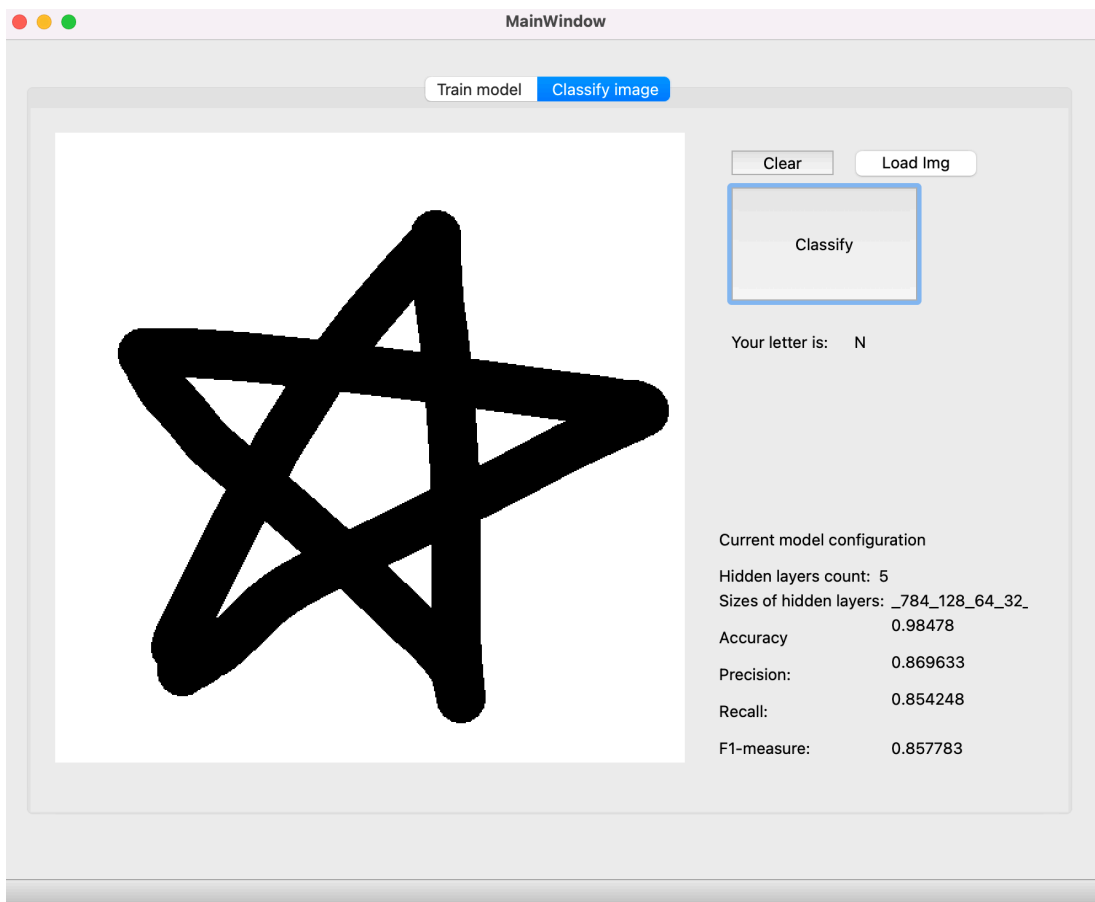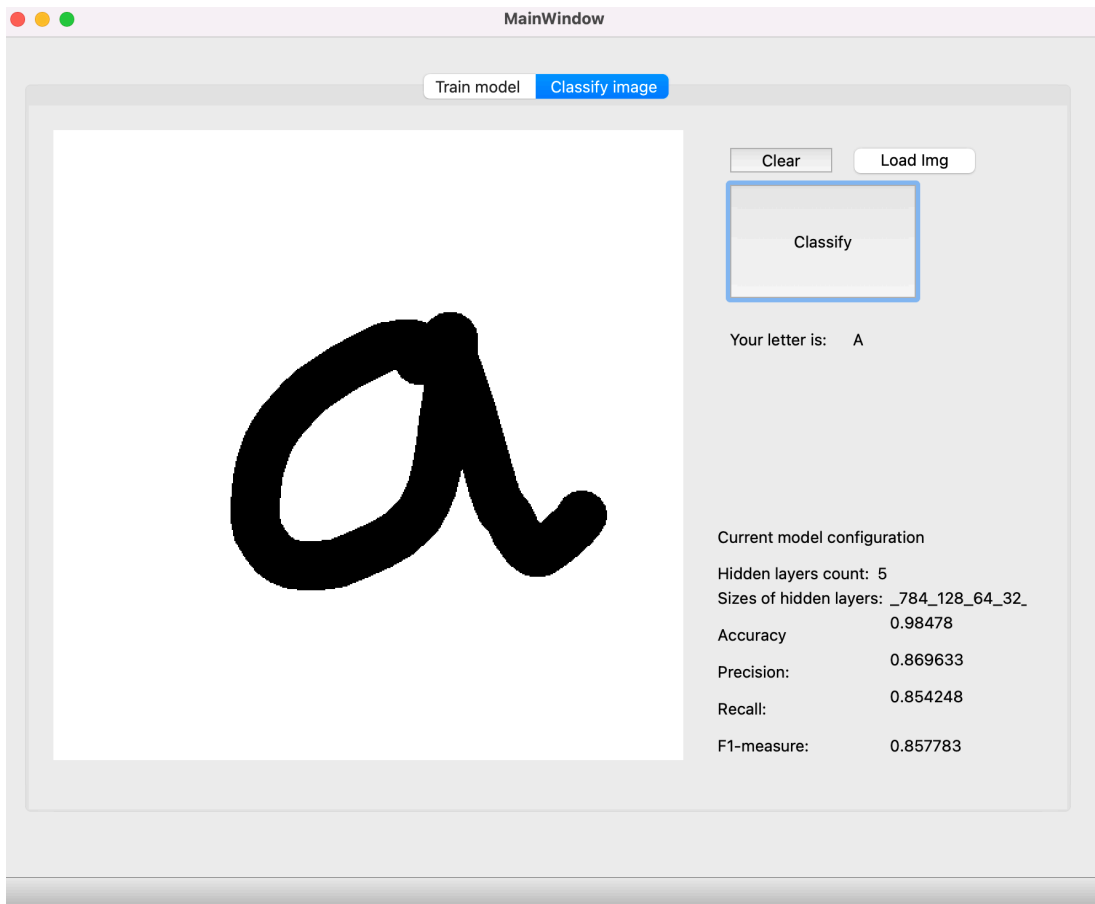
And you can watch your model as it learns.

When you get bored just close the window
or wait until the end (it's not fast)
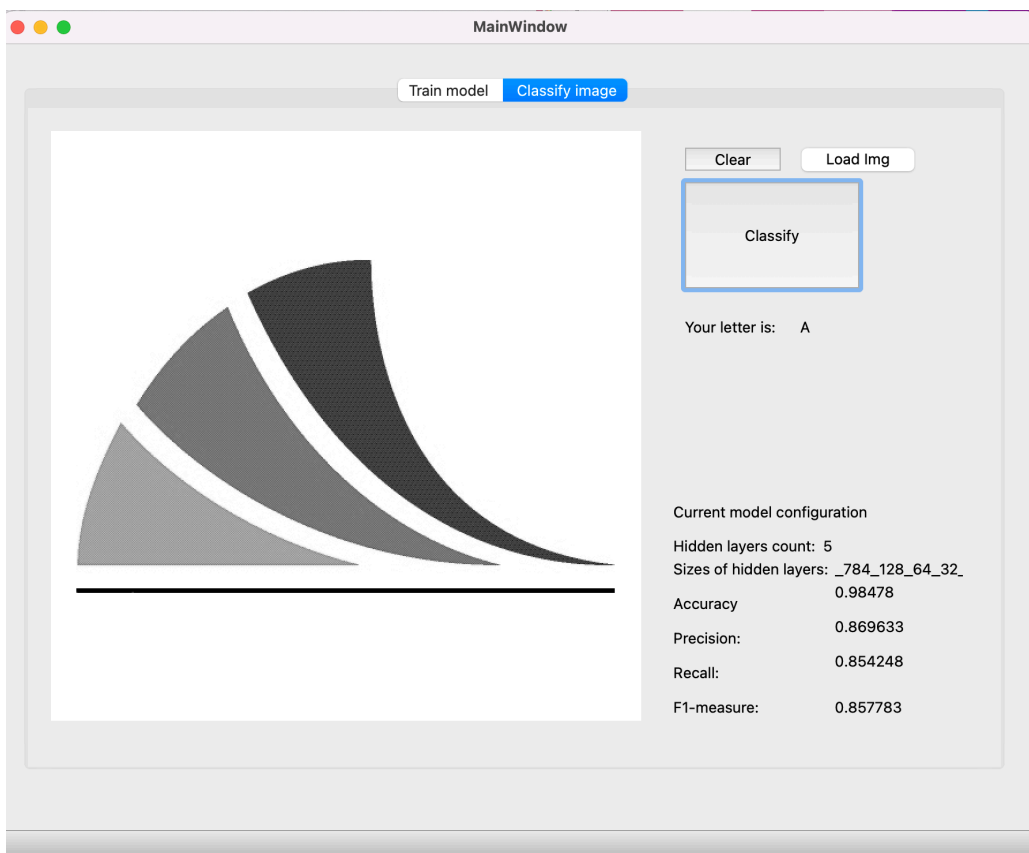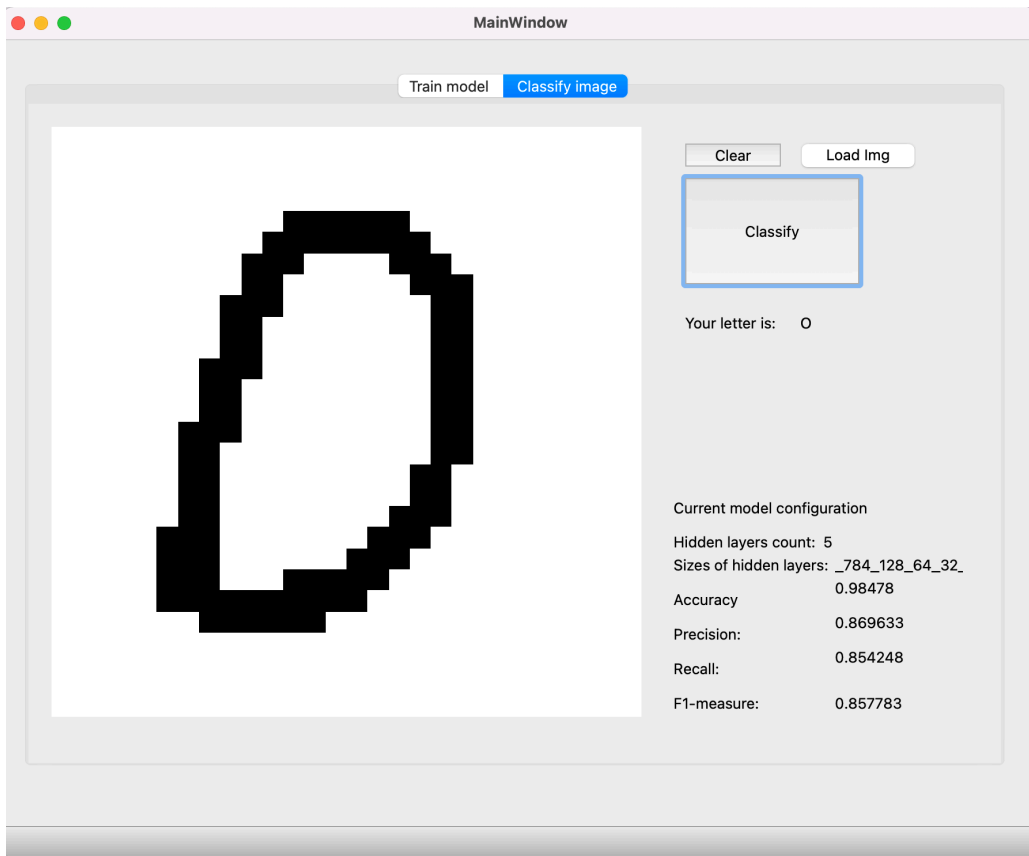and save the result by clicking **Save model to file**

Now let's play

Press **Classify image** at the top of the main window

You can draw different pictures and watch how the neural network recognizes them.

Draw and click **Classify**

MainWindow

Train model    Classify image

Clear    Load Img

Classify

Your letter is:    A

Current model configuration

Hidden layers count:  5
Sizes of hidden layers: _784_128_64_32_
Accuracy                         0.98478
Precision:                       0.869633
Recall:                          0.854248
F1-measure:                      0.857783

MainWindow

Train model    Classify image

Clear    Load Img

Classify

Your letter is:    N

Current model configuration

Hidden layers count:  5
Sizes of hidden layers: _784_128_64_32_
Accuracy                         0.98478
Precision:                       0.869633
Recall:                          0.854248
F1-measure:                      0.857783

Or download the bmp image by clicking **Load Img**





# Be happy. We tried very hard.