LEARNING TENSORFLOW PLAYGROUND

DR. ALVIN ANG

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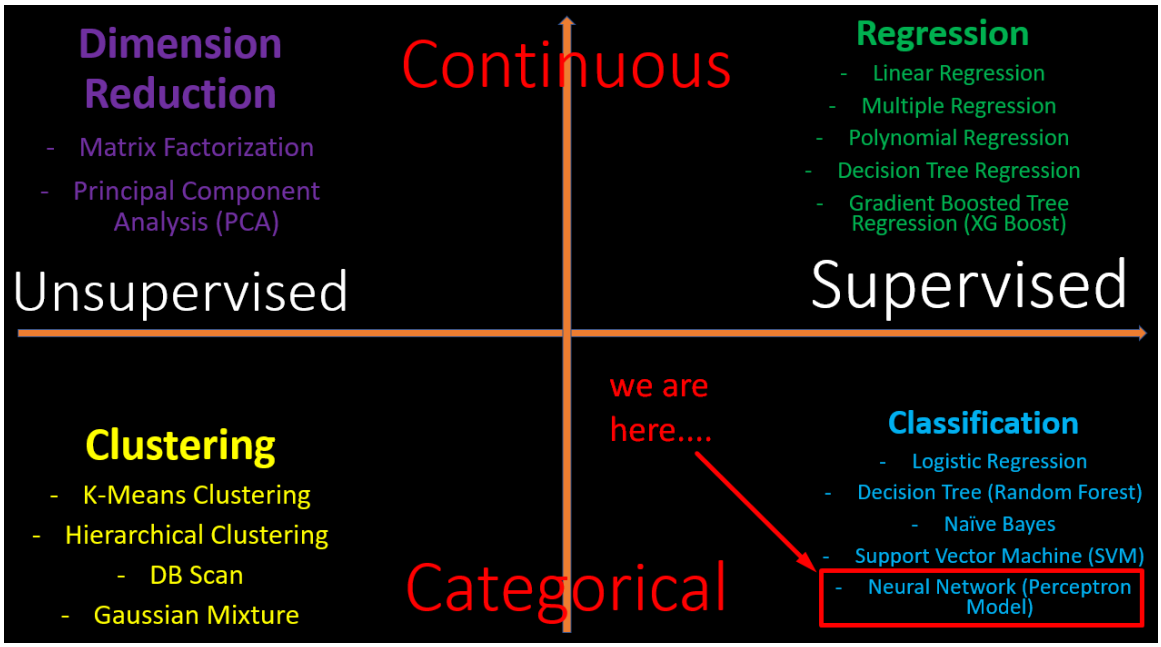
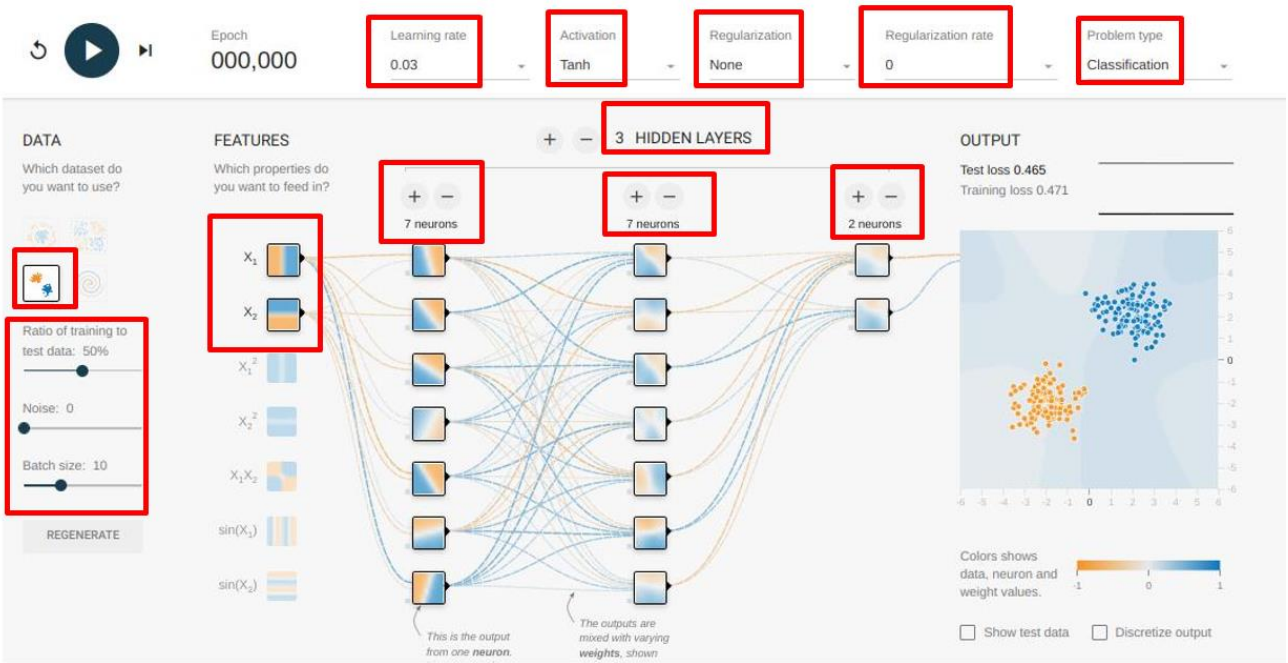


- Above is a table categorizing the different Machine Learning algorithms.
- Objective of Neural Network is to predict a CATEGORY.
- (actually, it can also be used to predicut Regression….but most literature use it for classifying images like cats vs dogs….so we mainly use it for Classification….)
- Most of the ANN "how it works" has already been explained here: https://www.alvinang.sg/s/Artificial-Neural-Network-ANN-How-It-Works-by-Dr-Alvin-Ang.pdf
- we will not be going thru them again.

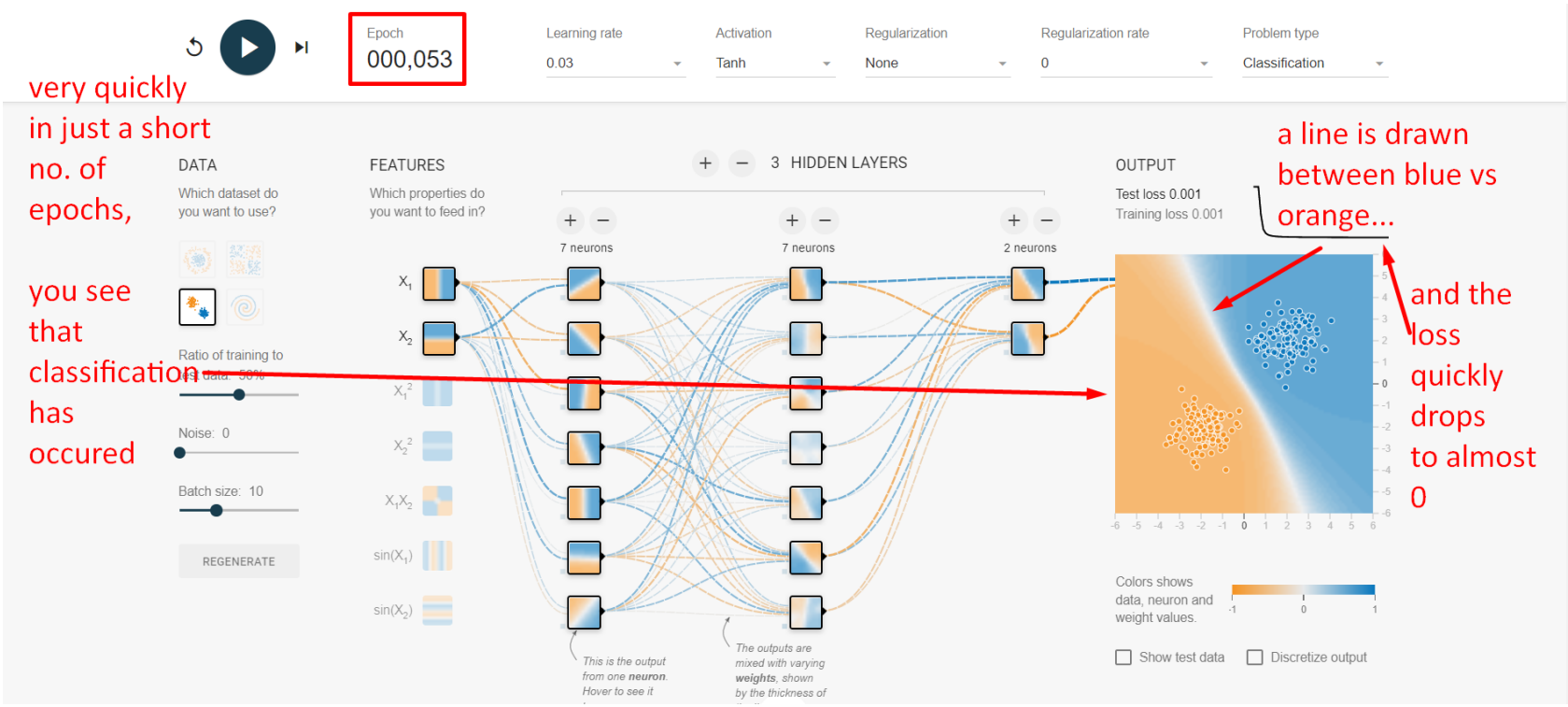
II. LEARNING TENSORFLOW PLAYGROUND

Go here: https://playground.tensorflow.org/

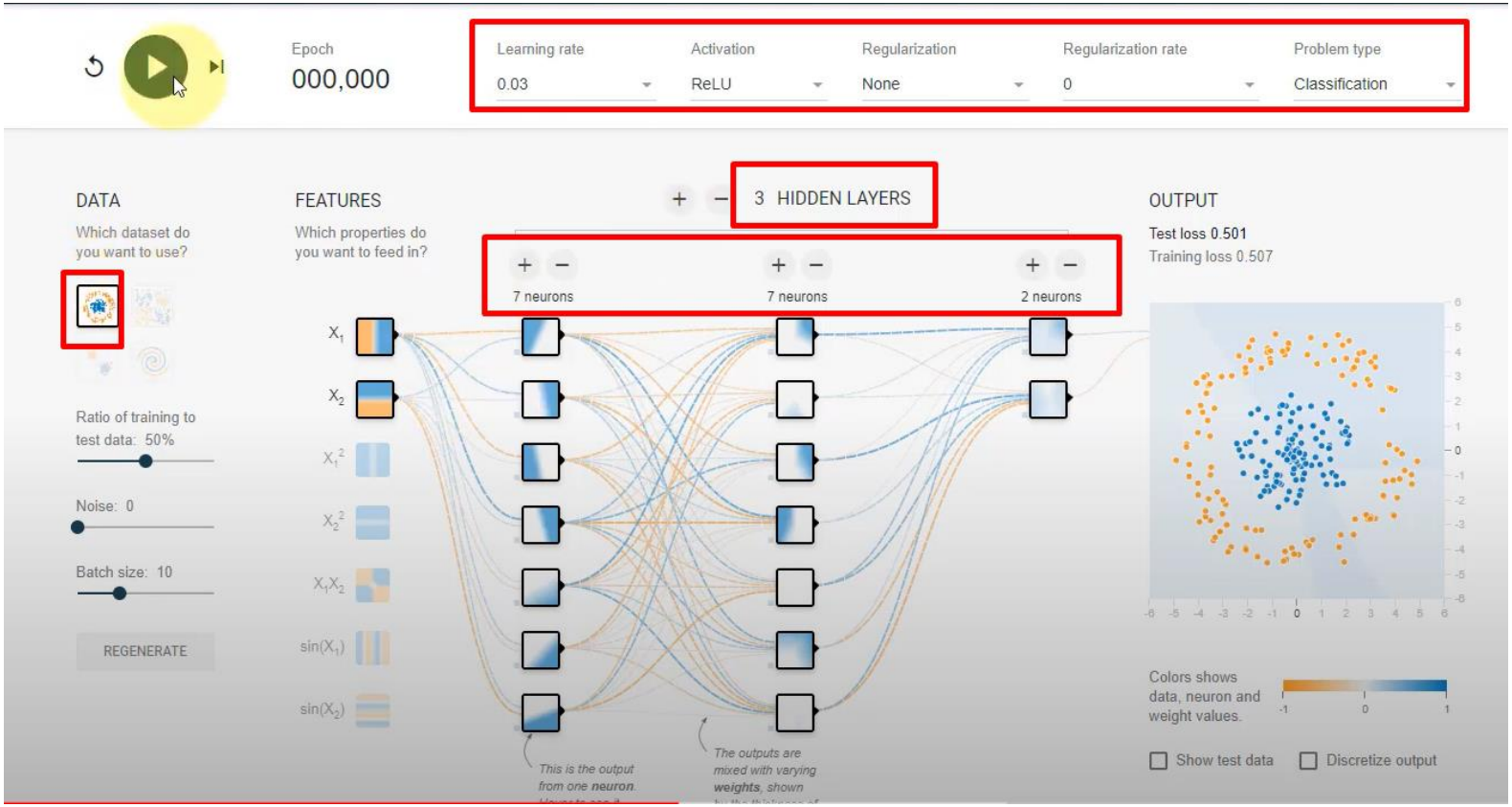
A. WARM UP I



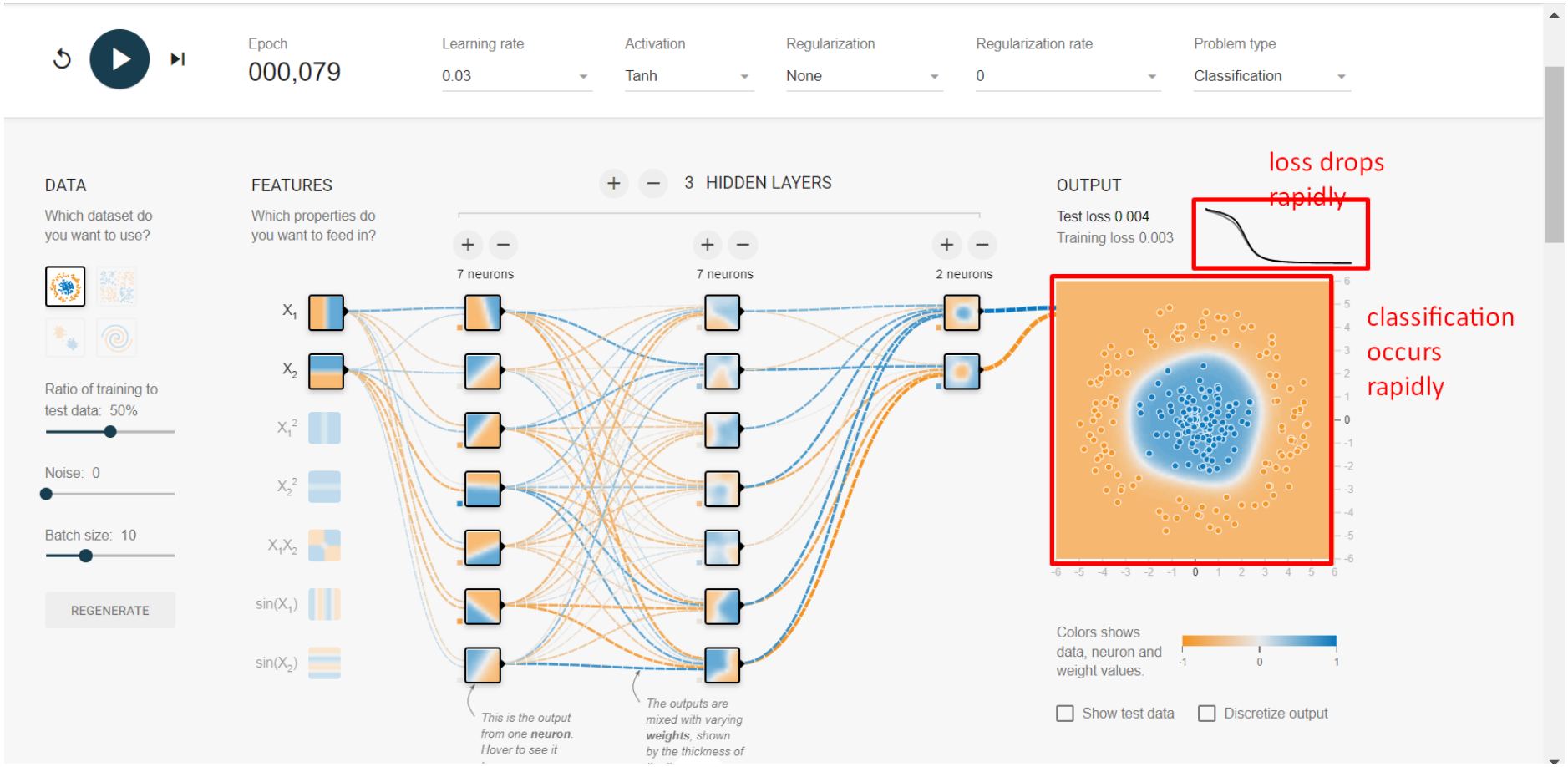
Set the parameters to above and click play



B. WARM UP II

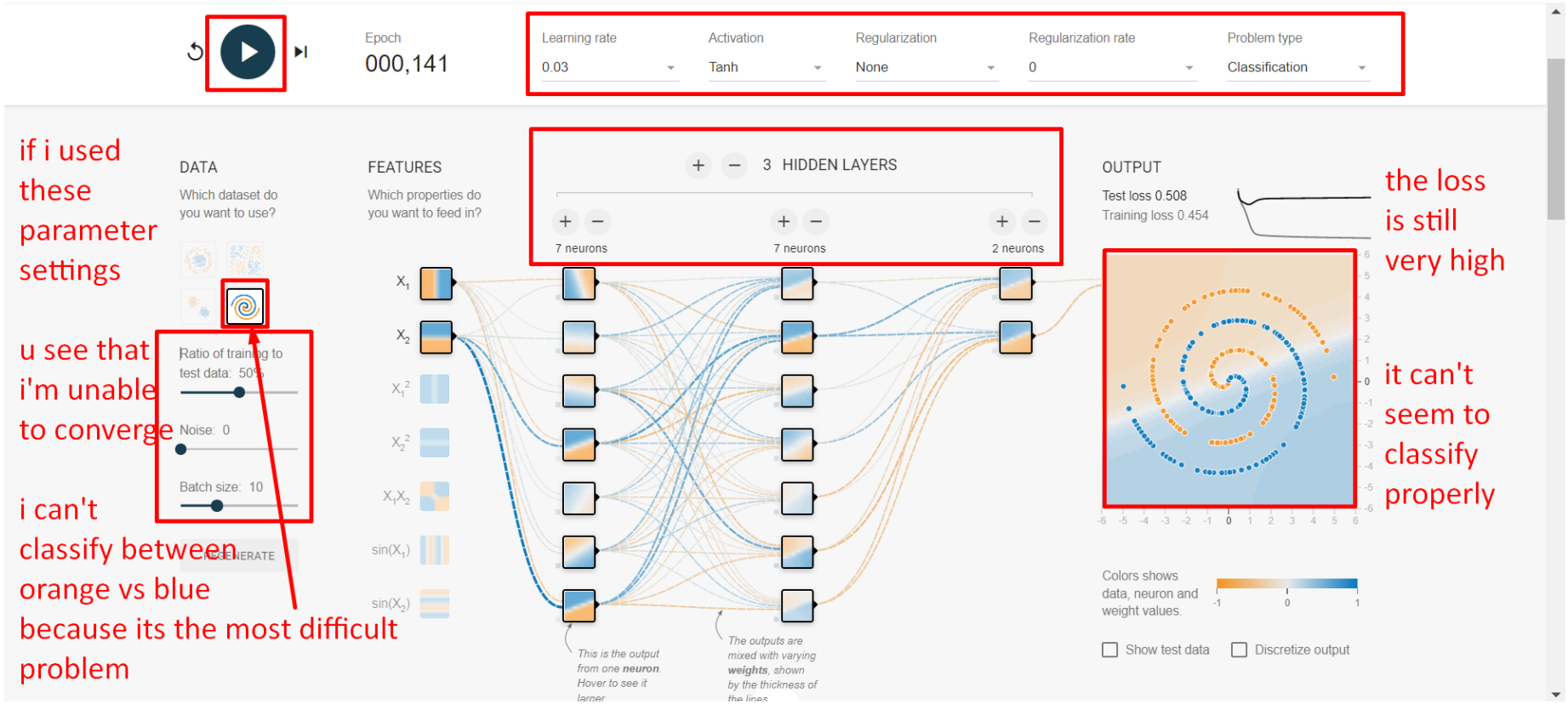


Set the above parameters and click play

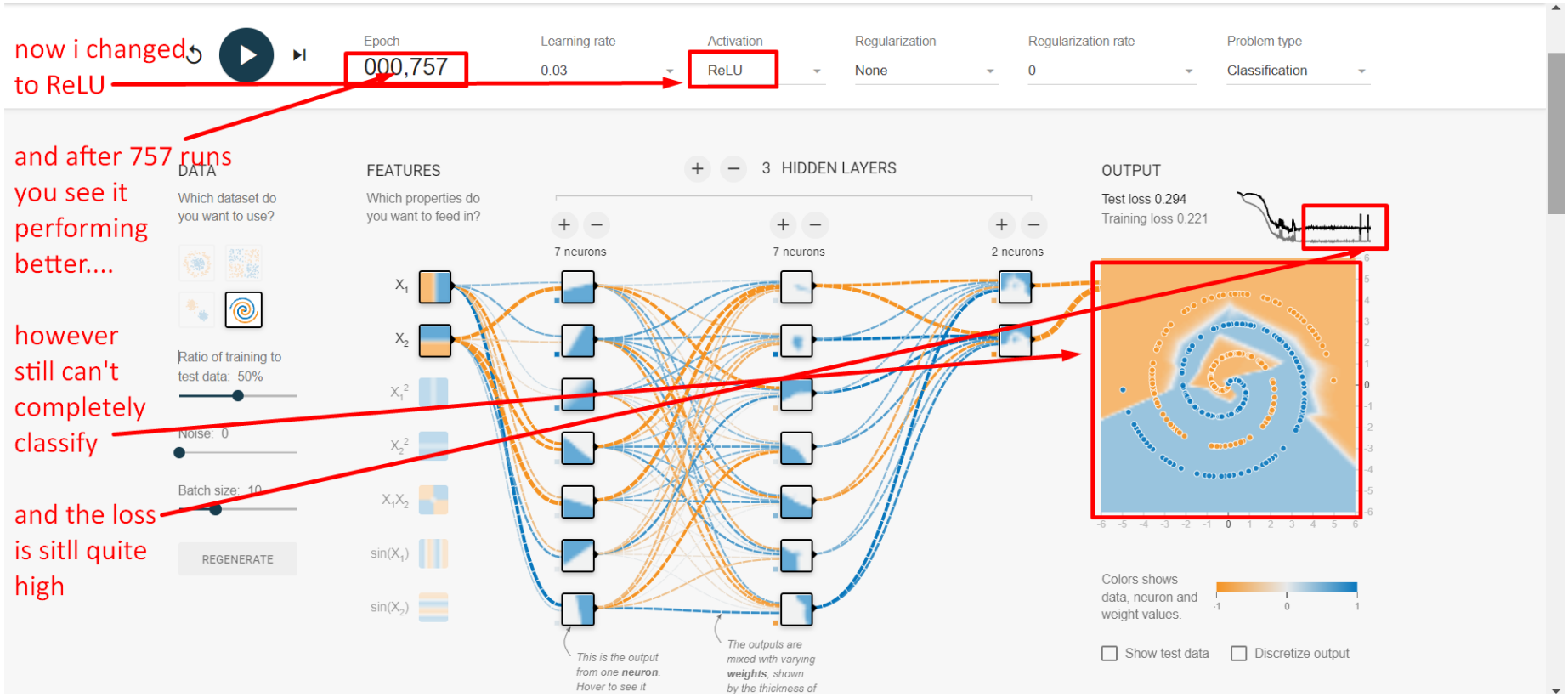


1. Choose the most challenging dataset (spiral) and train the model
2. Change the architecture of the model by adding new hidden layers, neurons and changing activation functions
3. Tune the model hyperparameters such as learning rate and regularization to achieve better model performance.
4. Perform feature engineering to improve model performance

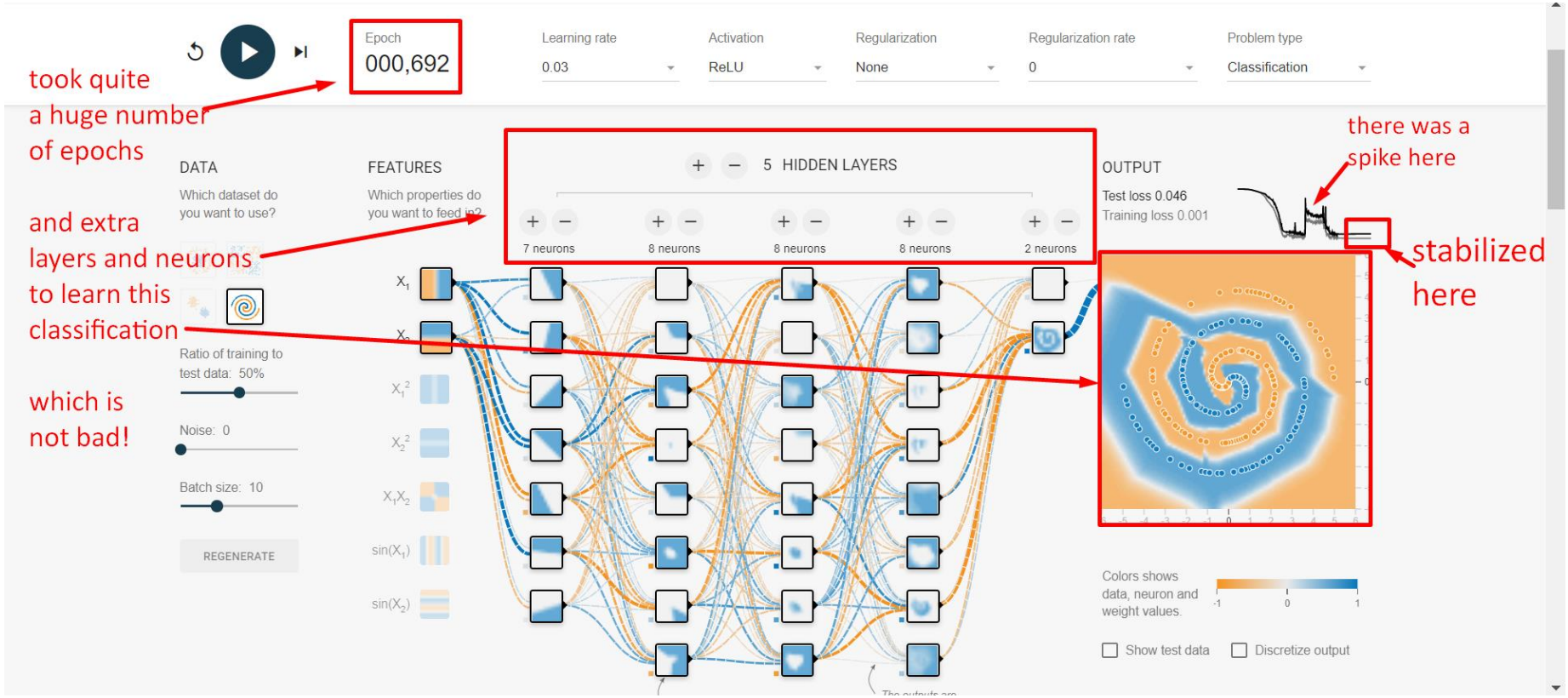
A. INITIAL SETTINGS



B. SETTINGS 1



C. SETTINGS 2



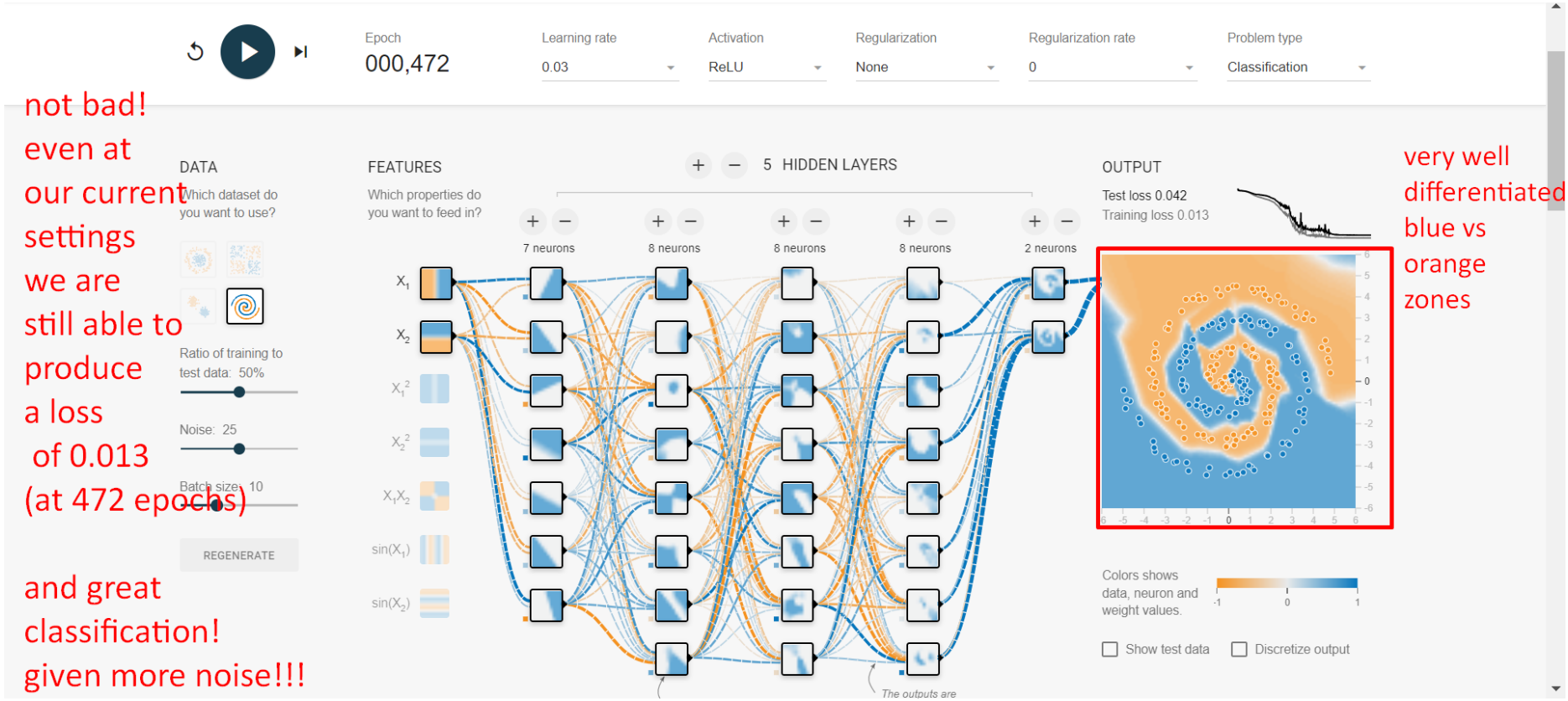
D. SETTINGS 3

now we are going to leave all previous settings as is

but we are going to make the problem much harder by increasing the noise to 25

and u see now that the orange dots are twined with the blue dots

its much harder to do classification!

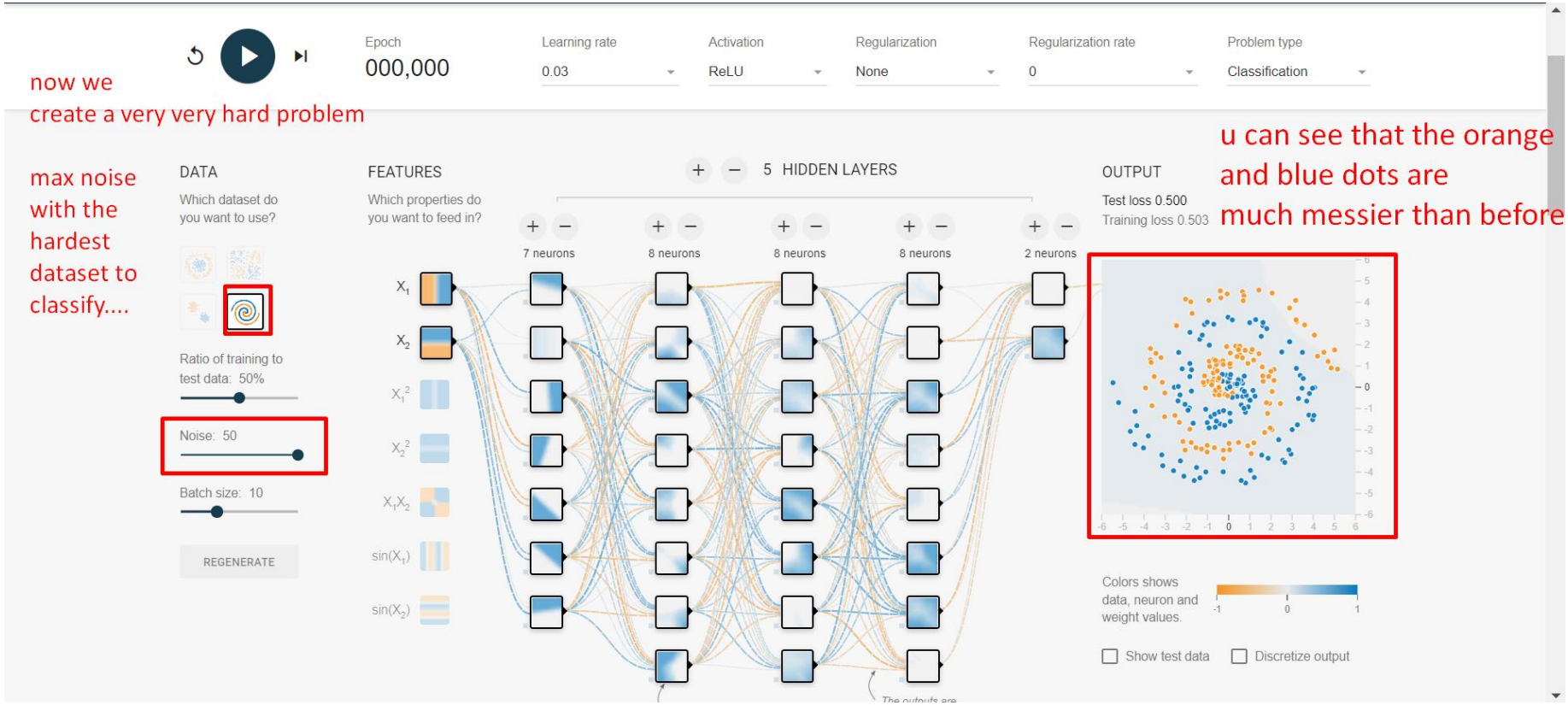


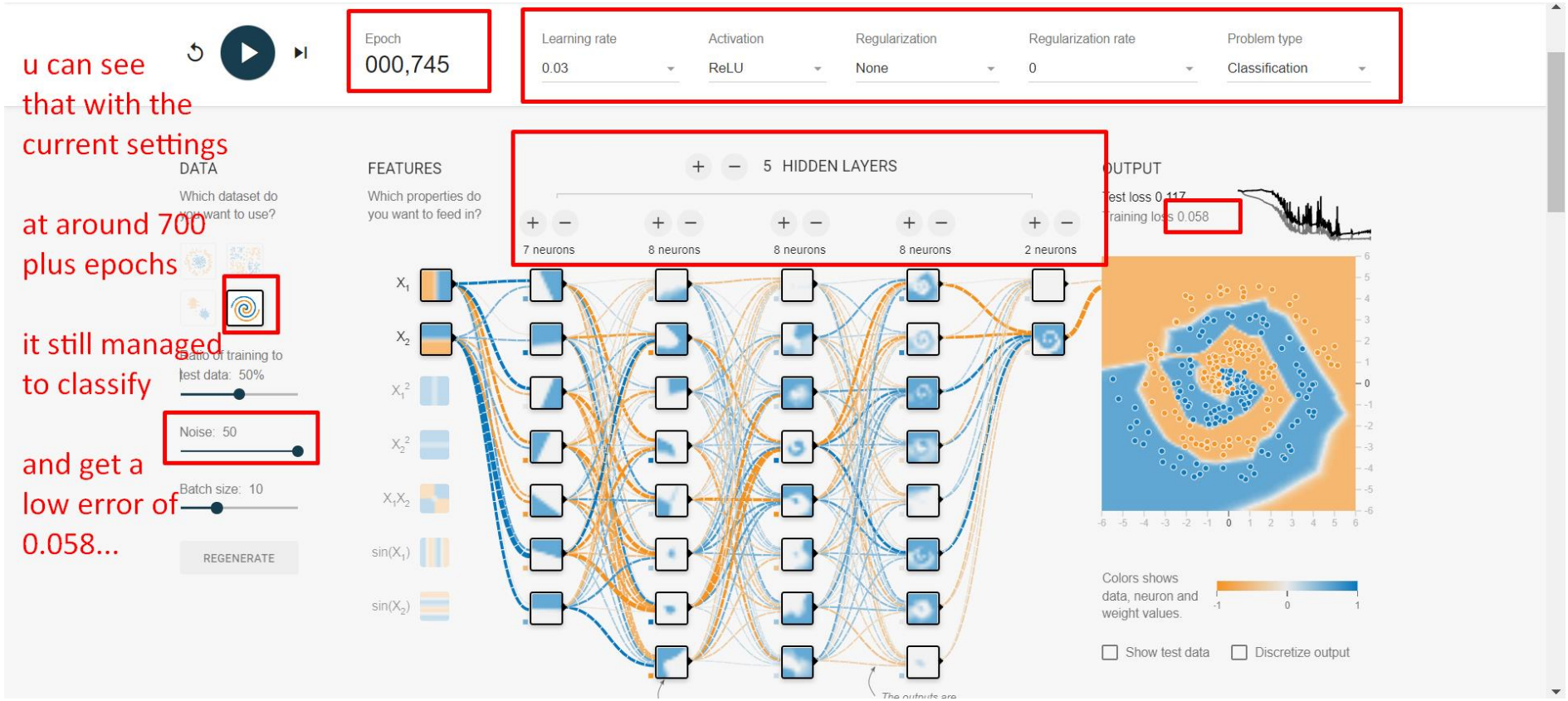
not bad!
even at
our current
settings
we are
still able to
produce
a loss
of 0.013
(at 472 epochs)

and great
classification!
given more noise!!!

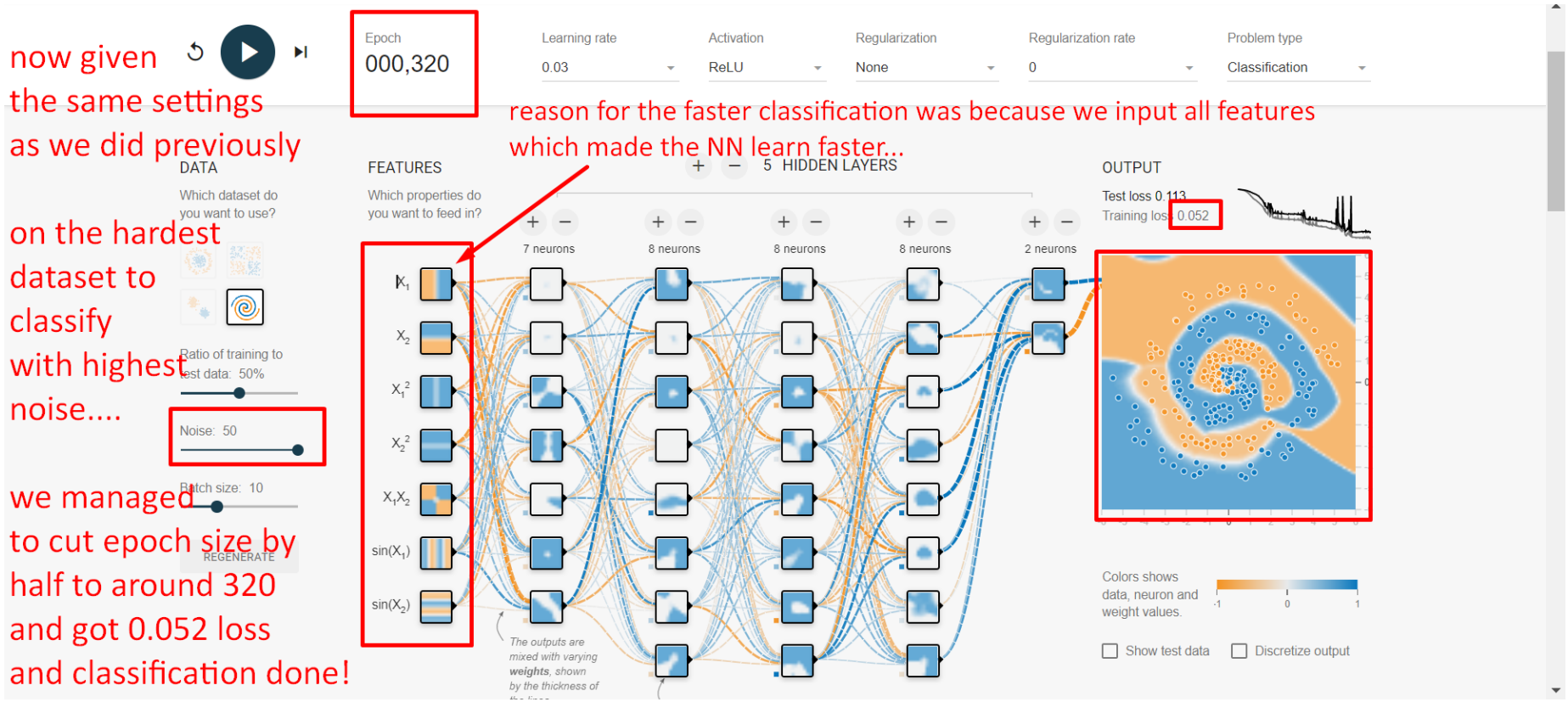
very well
differentiated
blue vs
orange
zones

E. SETTINGS 4





F. SETTINGS 5



ABOUT DR. ALVIN ANG

Dr. Alvin Ang earned his Ph.D., Masters and Bachelor degrees from NTU, Singapore. He is a scientist, entrepreneur, as well as a personal/business advisor. More about him at www.AlvinAng.sg.