

5043 Advanced Machine Learning - HW 0

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Report

1.1 Design

Activation function: I choose to use the tanh activation because the range of the outputs is $[-1,1]$.

Number of hidden layers: I choose to get more hidden layer but not increase their size.

Learning rate: I opt for a $\text{lrate} = 0.0005$.

Epochs: Because of my learning rate is low, I opt for more epochs with a possibility of a callback that stop training if the efficiency of the neural network does not increase.

1.2 Plots

1.2.1 Learning Curves

Here is the curves of learning of the models.

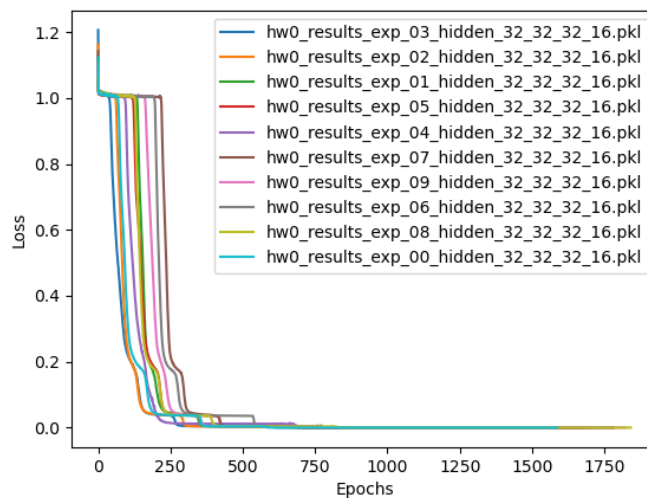


Fig. 1: Learning Curves of 10 models

1.2.2 Error Histogram

Here is the histogram representing the number of absolute error counted in the model prediction. The goal here is to have only absolute error less than 0.1.

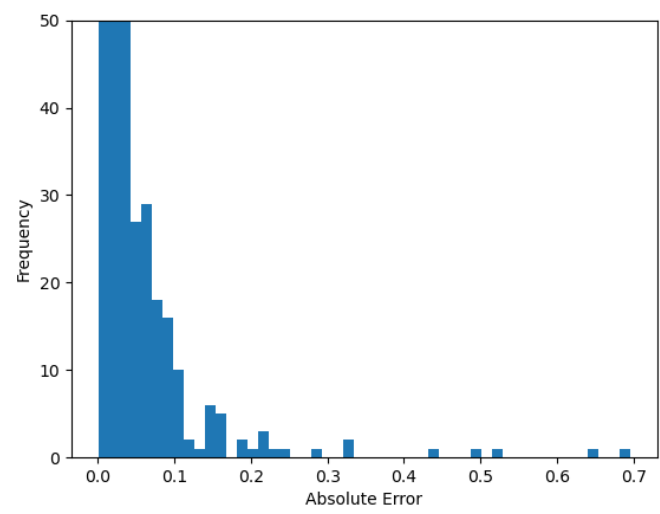


Fig. 2: Error Histogram of 10 models

1.2.3 Absolute Errors

Here are the different bars for each run, corresponding respectively for a model as: the sum of the absolute errors, the maximum of the absolute errors, and the count of absolute errors greater than 0.1.



Fig. 3: Absolute Errors per run