CS7052-Machine Learning

Workshop 8: Neural Networks

You will learn:

- To practice Neural networks for Regression and classification with several datasets

Task 1

Visit this link:

https://playground.tensorflow.org/

Tune the parameters to fit a model to all four datasets including the Spiral dataset, with total loss of less than 0.01.

Task 2

Open Muller & Guido's book from the reading list. Open your Jupyter notebook.

Follow the instructions on pages 106- 119 in chapter 2.

Muller and Guido's book comes with accompanying code, which you can find on https://github.com/amueller/introduction_to_ml_with_python.

You can download the code and then open corresponding file to chapter 2 (02-supervised-learning.ipynb) in your Jupyter Notebook.

Make sure you understand the meaning of each line of code, make some changes to improve your understanding and answer the following questions:

W8.1. Explain the difference between out[99] and out[100] on page 116 and how training accuracy is slightly improved.

W8.2 What is 'adam' algorithm, mentioned on page 116? Do brief research.

W8.3 How the accuracy of out[101] is improved compared to out[100]?

Task 3

Open Ketkar's book, chapter 7, introduction to Keras, page 97

W8.4. Enter and run the code on Listing 7-2, page 99.

Show the output to your tutor when you are done.