

Programming Assignment 5: SGD, Working with Data Pythonically

Due March 15, 2023

In the [repository](#) you will find code for the fifth programming assignment, 'pa5.py.' For this assignment, you should read about iterators and iterables in this [Real Python post](#). Then you should read through code in pa5.py. The code as written is complete, and requires no modification to run. Your task in this assignment is to step through the main function and into each function. You may (and should!) use the debugger to comb through the code. Make sure that you understand *each* line through step 2 (this includes *each* method in the various data classes and *each* method in FCNetFS).

You should also familiarize yourself with the inner workings of torch. Up to this point, we've done things from scratch so that you can understand *what* torch is doing for you (e.g. notice that backward() in FCNetFS is significantly longer than backward() in FCNetTo!), and after this assignment should feel equipped to transition to using Pytorch, relying on documentation and source code.

Finally, find a tabular dataset for binary classification and read it in / define an associated dataloader so that you can run this code to fit a model to the data. Your project data may already be suitable for this task, though many of you are using imagery data for which the fully connected architecture is not really appropriate. Still, you can try, and if you can get things to run without error, that is a good start, even if the model's performance is not particularly good.