10/31/2023

CS 767 Draft Assignment 2

Submit a draft of Assignment 2 (using its Word template), with section 1.1 drafted—to the extent of showing that you have loaded the application and tell your plans for parameter manipulation. Also, supply a beginning draft of section 2.1.

## 1.1 Description of your modifications and reason(s) it could be an improvement (include the relevant code fragments)

* Adding more dense layers
  + If the model is underfitting, adding more layers could increase learning capacity
* Increasing dropout rate
  + The current model on google colab is at 0.2, if we increment the value up to %50 we could see an improvement and further improve overfitting
* Explicitly instantiating an optimizer with a learning rate, adding a clip value.
  + Clipping prevents exponential growing gradients

## 2.1 Description of the application (include description of inputs, functionality, and outputs—in no more than ½ page. Identify a clearly obtainable data source. Avoid the neural net types that will be covered in future modules. Make this as unique an application as you can.)

For the new neural net application ive been meaning to build out a model for NBA head to head models. The data source can be found at [Basketball Reference](https://www.basketball-reference.com/teams/BOS/2025.html#all_team_and_opponent), then scrap each player and their average stats, for each team. The train data will be the 2023 matchup, their teams average data, and the result score as the target variable. To test, we will take 2024 matchups and predict the result. ]

Input example: [Player, G, Minutes\_played, Pts, 3p, 3pa, 2p, 2pa, Turn\_overs, steals, assists, blocks, ORB, DRB, ft, fta] of the entire player roster and matchup roster]

Target variable = [team points]