**2b**

**Add\_placeholders**

I initialized placeholders with their respective shapes for word\_id, tag\_id, deprel\_id, class, and dropout. This was so that they could be later fed the data during training.

**Create\_feed\_dict**

This was to create a feed that would later be used in training to map the placeholders to their respective values. Keys were assigned based on the value of their placeholders and the values were gotten from the respective arguments.

**Add\_embeddings**

First, I made a new matrix that consisted of all embedding’s for all ids using my Xavier initializer. Afterwards I took a subset of those matrices using embedding lookup. This was done so that I could convert the fed in words into a vector form.

A small issue came up where my shapes were not agreeing with one another. I later realized that it was because I had misunderstood and accidentally used the embeddings as the ids and the placeholders as the params.

**Add\_prediction\_op**

Add\_predictions was pretty standard in initialization. But issues did come up when trying to compute h and pred. The first issue came about because of an issue with matrix multiplication. That was solved by switching the order of the matrices so that the shape dimensions were properly matched. The second issue that came about was more technical. TensorFlow kept giving me error messages on multiplication being unsupported. This was fixed by calling matmul instead of multiply.

**Add\_loss\_op**

The loss function was used to calculate how correct the perdictions were.

**Add\_training\_op**

Afterwards I used tf.train.AdamOptimizer to create the Operation for training.

Unfortunately, I keep getting a LAS and Validation of 0. This can be narrowed down to two issues either a) I did not initialize a variable properly or b) my oracle function from parser.py is faulty and letting in more samples than it should. I am unfortunately unable to find the exact reason for this issue and as such am unable to fix it.

However, my cross-entropy is going down so it shows that there are some predictions being had.