A journey from **low level** TensorFlow 2 to high level TensorFlow 2

The goal of these tutorials is to prepare folks who are enthusiasm for deep reinforcement learning implementation using TensorFlow 2.

What we will learn in these series of tutorials:

1. tf.print(“hello world!”)
2. Linear regression by low level TensorFlow 2
3. Logistic regression by low level TensorFlow 2
4. NN for MNIST classification (low level TensorFlow 2)
5. NN for MNIST classification (mid level TensorFlow 2)
6. NN for MNIST classification (high level TensorFlow 2)
7. CNN for MNIST classification (low level TensorFlow 2)
8. CNN for MNIST classification (mid level TensorFlow 2)
9. CNN for MNIST classification (high level TensorFlow 2)

What I mean by low-mid-high level TensorFlow 2:

In low level mode:

We will define weights and parameters, calculate forward propagations, calculate loss function from scratch

In high level mode:

We just define the shape of our desire NN/CNN and Keras will do the rest

And mid level mode is something in between. Maybe better call it high prestige low level!

What I expect from you:

A basic knowledge in python, ML, NN, and CNN

First tutorial:

I don’t like to start by ordinary talks about TensorFlow

“Tensor means n dimensional array and blah blah.”

“As its names shows we will work by tensors and blah blah.”

Talk is for the birds let see the codes

Numpy arrays and tensors could simply convert to each other

Also sometimes it is necessary to cast tensors data type to other one

The final section is about two widely use operation for a NN:

That’s it for the first tutorial. Now you are familiar by TensorFlow 2 and in the next tutorial we will implement a linear regression problem.