Tensor – is a generalization of vectors and matrices of higher dimensions

Tensor Ranks – 0 [200]/ 1 [200, 1] / 2 [200,1 ][300,2] / 3 so on

Constants – a = tf.constants(2.0, tf.float32)

Variable – b = tf.Variable([2.0], tf.float32)

PlaceHolder – c = tf.placeholder(tf.float32)

d = c \* 2

result = sess.run(d, feed\_dict = {a:3.3})

to run tensorboard --> tensorboard --logdir="./graph" --host=127.0.0.1

Nodes - Each node of the graph represents an instance of a mathematical operation

Edges - Normal edges and Special Edges - is a multi-dimensional data set (tensor) on which the operations are performed

Elements -

Constants - z = tf.constant(5.2, name="x", dtype=tf.float32)

Variables - k = tf.Variable(tf.zeros([1]), name="k") or k = tf.Variable(tf.add(a, b), trainable=False)

Sessions - A session encapsulates the control and state of the TensorFlow runtime. A session without parameters will use the default graph created in the current session, otherwise the session class accepts a graph parameter, which is used in that session to be executed.

**why tensorflow?**

● Python API

● Portability: deploy computation to one or more CPUs or GPUs in a desktop, server, or

mobile device with a single API

● Flexibility: from Raspberry Pi, Android, Windows, iOS, Linux to server farms

● Visualization (TensorBoard is da bomb)

● Checkpoints (for managing experiments)

● Auto-differentiation autodiff (no more taking derivatives by hand. Yay)

● Large community (> 10,000 commits and > 3000 TF-related repos in one year)

● Awesome projects already using TensorFlow