import tensorflow.compat.v1 as tf

def cosine\_similarity(x1, x2, axis):

"""

cosine similarity of two tensors.

Arguments:

x1:

A tf.Tensor

x2:

A tf.Tensor

axis: Dimension along which to normalize.

"""

normalize\_x1 = tf.nn.l2\_normalize(x1, axis=axis)

normalize\_x2 = tf.nn.l2\_normalize(x2, axis=axis)

return tf.reduce\_sum(tf.multiply(normalize\_x1, normalize\_x2), axis=axis)