

# Tensor Flow

Tuesday, September 18, 2018 11:48 AM

“TensorFlow is an open source software library for numerical computation using dataflow graphs. Nodes in the graph represents mathematical operations, while graph edges represent multi-dimensional data arrays (aka tensors) communicated between them. The flexible architecture allows you to deploy computation to one or more CPUs or GPUs in a desktop, server, or mobile device with a single API.”

From <<https://www.analyticsvidhya.com/blog/2016/10/an-introduction-to-implementing-neural-networks-using-tensorflow/>>

<https://www.deeplearningbook.org/>

The advantages of using TensorFlow are:

- **It has an intuitive construct**, because as the name suggests it has “*flow of tensors*”. You can easily visualize each and every part of the graph.
- **Easily train on cpu/gpu for distributed computing**
- **Platform flexibility**. You can run the models wherever you want, whether it is on mobile, server or PC.

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- **Build a computational graph**, this can be any mathematical operation TensorFlow supports.
- **Initialize variables**, to compile the variables defined previously
- **Create session**, this is where the magic starts!
- **Run graph in session**, the compiled graph is passed to the session, which starts its execution.
- **Close session**, shutdown the session.

- placeholder: A way to feed data into the graphs
- feed\_dict: A dictionary to pass numeric values to computational graph

Placeholder + Dict + session open run -- close

<https://www.analyticsvidhya.com/blog/2018/04/top-7-github-repositories-march-2018/>