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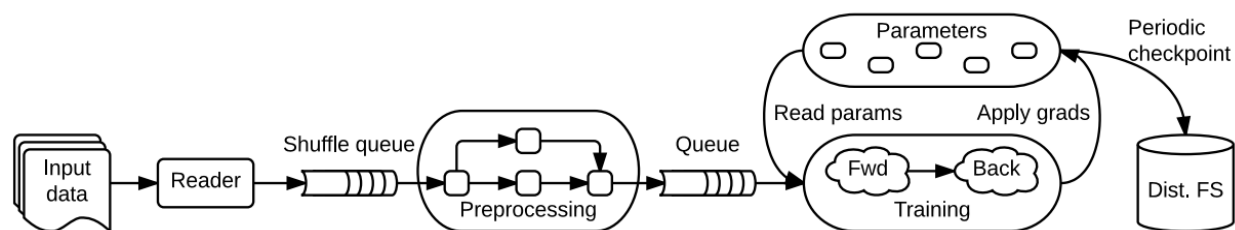
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CS 410: Text Information Systems

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TensorFlow

TensorFlow is an open source library that provides end-to-end machine learning (Tensorflow). In simpler terms the TensorFlow library provides easy access to many machine learning and deep learning algorithms for users using python and javascript. While made to be used in those two languages as a front end, to improve the efficiency the algorithms are executed using C++.



(Abadi et al. 6)

The above diagram shows a TensorFlow dataflow graph for a training pipeline which provides a good visual reference on how TensorFlow works. For the start and end of all TensorFlow models is the input data at the start and the output of the specified algorithm at the end. In between are nodes that process and run the algorithm. For the diagram above the nodes that are within the TensorFlow model are the training and parameter nodes. TensorFlow also has also been optimized to run on systems anywhere from a local machine using a cpu, using a gpu, parallel processing, and even a special processing unit designed by Google called a TensorFlow Processing Unit also

known as a TPU (Yegulalp). TensorFlow even has a lite version that can be used on mobile devices using iOS and android systems which allows for even greater access to deep learning algorithms.

TensorFlow can be used in many different applications. One example is using TensorFlow for text analysis. Since many deep learning algorithms can deal with text analysis, TensorFlow allows python and javascript users easy access to those deep learning algorithms. A real world example of it in use for this purpose is Google Translate currently uses it as a backend (Saunders). A couple of other uses for TensorFlow are sound and image recognition. Just like text analysis there are many deep learning and neural network algorithms that TensorFlow gives access to through its systems. Some final example uses of where TensorFlow can be used that are unusual are in both time series analysis as well as video recognition. With video recognition it is used for things such as motion detection and security (Saunders).

TensorFlow is a user-friendly library that allows a large user base easy access to deep learning and neural network algorithms. While being so user-friendly Tensorflow's background code allowing for so much customization with processing type as well as systems that it can be run on is impressive. TensorFlow is also impressive with how the system is designed between having an easy to use frontend interface with either python or javascript while using C++ in the background for better efficiency. TensorFlow is a great library for anyone who wants to use deep learning or neural network algorithms without the hassle of having to implement the algorithms themselves.

Work Cited

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