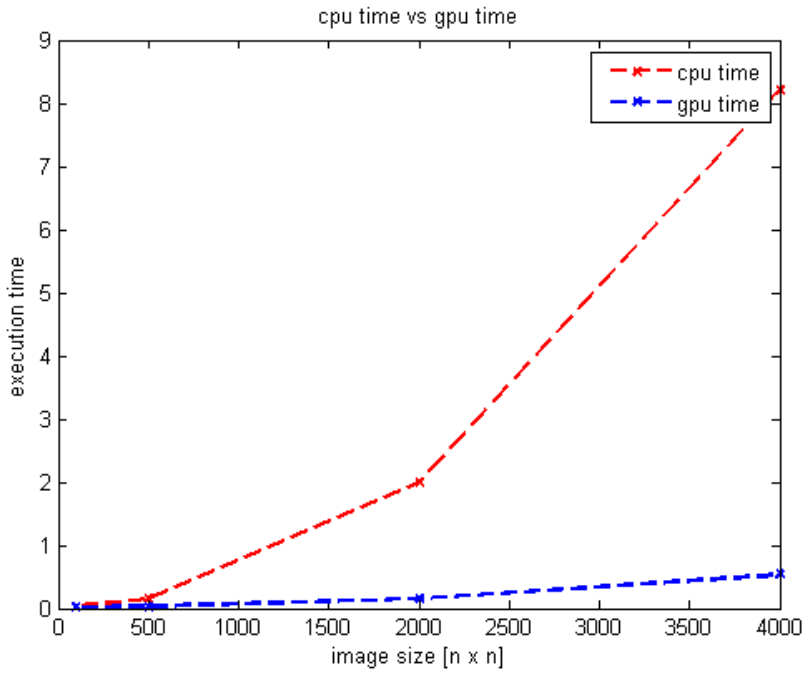
Using TensorFlow

Why do we need Tensor Flow?

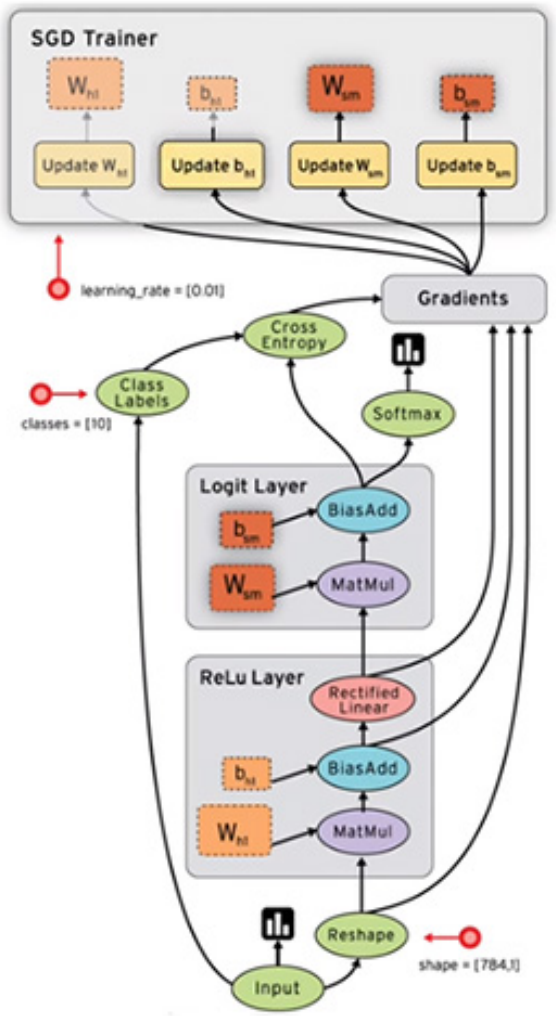
- CPU Vs. GPU
  - The GPU (Graphics Processing Unit) has been optimized to process calculations very fast.
  - Most GPUs have up to 16 cores while common CPUs only have 4 or 8 cores.
  - The CPU has been built to be very versatile (good at everything but great at nothing).
- Tensor flow allows us to easily run code on our computers graphics card.



What is the Tensor Flow Vocabulary?

- **Data Flow Graph:** This is the layout of your program. A road map if you will.

- **Nodes:** nodes preform calculations. These are very similar to functions.
- **Edges:** Multi-Dimensional Array (Tensor). This is your data



Why is TensorFlow useful for deep learning?

- It has several built in features that are useful for deep learning. (Similar to Scikit-Learn)

- Provides tools needed to assemble a neural network

- Has a feature know as “autodiff”, which can quickly calculate the gradient of a function at any give data point.
  - This can help provide a very swift optimization.

- TensorFlow is very compatible with other types of ML.