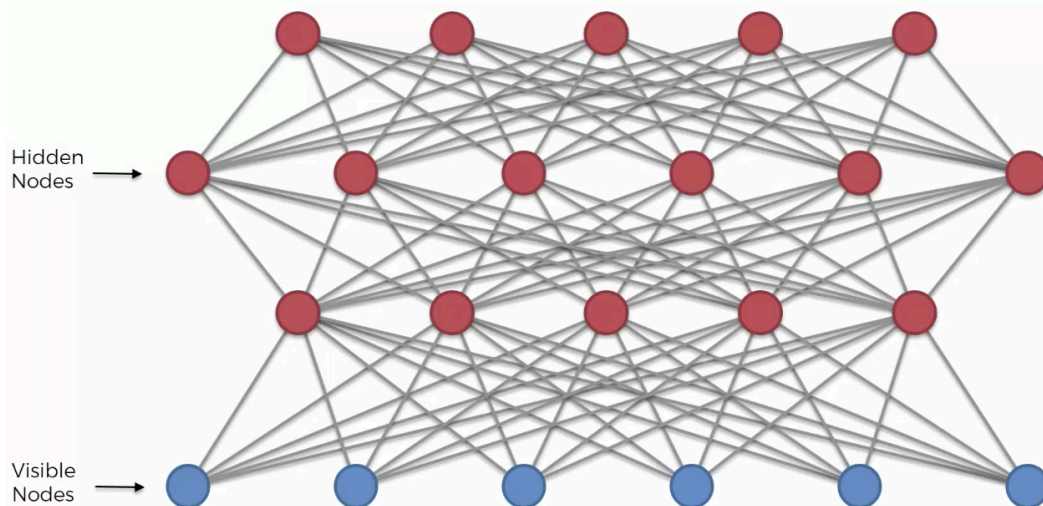


Deep Belief Networks

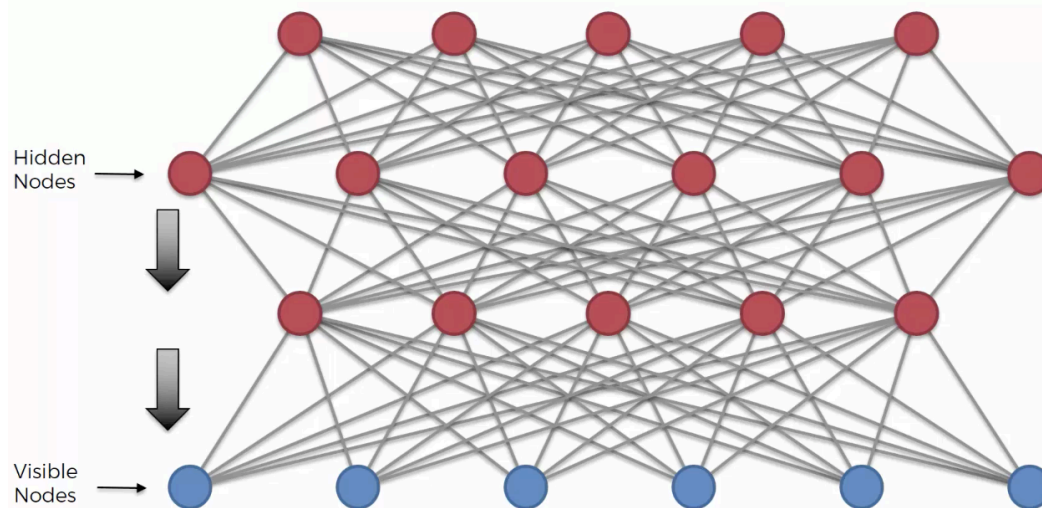
Deep Belief Networks (DBN)



DBN comes to be if several restricted boltzmann machine are stack on top of each other. In our output, hidden layer of first RBM is the input of second RBM, and hidden layer of second RBM is the input of third RBM.

The tutorial doesn't go deep in this, read 2 last articles in here and 1 other article in the previous tutorial (by Hinton).

Deep Belief Networks (DBN)



Machine Learning A-Z

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We should make sure that our directionality is downward. In other words, make sure that for the first 3 layers, we are directed downward whereas there is no direction in the top layer. In terms of training, there are two types of algorithms: 1. greedy layer-wise training: after training the weights (undirected connection) layer by layer, directionality will be set up 2. wake sleep algorithm: train all the way up (wake) and then train all the way down (sleep)

Deep Belief Networks (DBN)

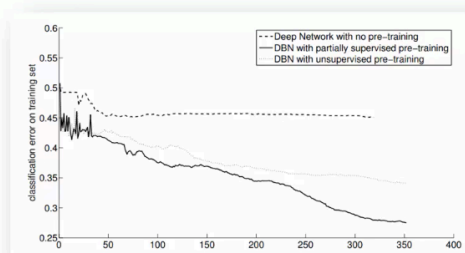
Additional Reading:

Greedy Layer-Wise Training of Deep Networks

By Yoshua Bengio et al. (2006)

Link:

<http://www.iro.umontreal.ca/~lisa/pointeurs/BengioNips2006All.pdf>



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Deep Belief Networks (DBN)

Additional Reading:

The wake-sleep algorithm for unsupervised neural networks

By Geoffrey Hinton et al. (1995)

Link:

<http://www.gatsby.ucl.ac.uk/~dayan/papers/hdfn95.pdf>

