

# My Reading List for Deep Learning!

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Here is my reading list for deep learning. There are many resources out there, I have tried to not make a long list of them! I have just included my favorite ones. If you also have a DL reading list, please share it with me.

1. Great starting points are:
  - (a) “Neural Networks Class” by Hugo Larochelle. [Here is the link.](#)
  - (b) “Deep Learning: Methods and Applications” by Li Deng and Dong Yu. You can download a pdf version from Microsoft Research website. [Here is the link.](#)
  - (c) “Deep Learning” book by Yoshua Bengio, Ian Goodfellow and Aaron Courville from MIT Press. [Here is the link for a free online version.](#)
2. “Deep Learning” by Yann LeCun, Yoshua Bengio and Geoffrey Hinton in Nature. It is a great review paper. [Here is the link.](#)
3. “Reducing the dimensionality of data with neural networks.” by Hinton et al in Science. A good reference to learn about deep autoencoders. Here are the links for [the paper](#), [the supporting material](#) and [the Matlab code](#) from Geoffrey Hinton website.
4. “A fast learning algorithm for deep belief nets.” by Hinton et al in Neural Computation. Here is the [link of the paper](#) and a [video tutorial](#) on DBNs by G. E. Hinton.
5. “Learning representations by back-propagating errors” by Rumelhart et al in Nature. It is the error back-propagation paper that is the core of neural networks training. [Here is the link.](#)
6. Many of the ideas in deep learning, e.g., convolutional neural networks and back-propagation, have been known from 1980s. The main breakthrough in deep learning research is because of fast and efficient computation using GPUs and availability of very large datasets (90% of world’s data has been generated over the last two years! [See here.](#)). Why am I telling this?! To emphasize that if you want to do deep learning research you need a good software platform for fast and efficient computation. Some of the great ones out there are:
  - (a) [TensorFlow](#) from Google

- (b) Torch supported by Facebook
- (c) Theano from University of Montreal
- (d) CNTK also known as Cognitive Toolkit from Microsoft
- (e) Caffe from UC Berkeley
- (f) MXNet by different collaborators from universities and companies.

Now the question is which deep learning framework to use?! There is no silver bullet! It depends on the target task and application. Check out a great comparison among some of them [here](#).

- 7. If you want to see everything in one package, including some of the state of the art works in deep learning + some good tutorials, Deep Learning Summer Schools websites are great!
  - (a) [Here](#) is a summary of Deep Learning Summer School 2016.
  - (b) [Here is DL Summer School 2016](#). The website includes all lectures' slides and videos.
  - (c) [Here is DL Summer School 2015](#). The website includes all lectures' slides and videos.
- 8. If you need more resources, check out [deeplearning.net](#) and [UFLDL page](#).

Hope this helps you!