==========

本 tutorial 内容整理自互联网资源，如有侵权，请告知。

彭春蕾（http://clpeng.github.io），2015.7.4.

==========

【1】先以 Nature 上的 deeplearning 文章为起点，

根据以下内容先了解个大概（看不懂的部分可以记下来先）：

[Nature] Deep Learning 原文 （翻译 上：http://www.csdn.net/article/2015-06-01/2824811 下：http://www.csdn.net/article/2015-06-02/2824825 ）

[Nature 中图片来源] http://colah.github.io/

http://get.jobdeer.com/7509.get/

http://www.toptal.com/machine-learning/an-introduction-to-deep-learning-from-perceptrons-to-deep-networks

http://markus.com/deep-learning-101/

http://freemind.pluskid.org/machine-learning/deep-learning-and-shallow-learning/

http://blog.sina.com.cn/s/blog_6ee179cf0101ah48.html

http://forum.memect.com/thread/ml-2015-03-15/#3820213893961560

http://forum.memect.com/thread/ml-2015-03-17/#3821263258733905

http://www.toptal.com/machine-learning/an-introduction-to-deep-learning-from-perceptrons-to-deep-networks

http://forum.memect.com/thread/ml-2015-03-20/#3822439274468949

http://forum.memect.com/thread/ml-2015-03-20/#3822360635276554

http://www.computervisionblog.com/2015/03/deep-learning-vs-machine-learning-vs.html

http://forum.memect.com/thread/ml-2015-03-28/#3825487711544114

http://forum.memect.com/thread/ml-2015-03-30/#3826068186068941

[调研论文] http://forum.memect.com/thread/ml-2015-03-31/#3826340178606344

[视频] http://forum.memect.com/thread/ml-2015-04-01/#3826854173812339

http://forum.memect.com/thread/ml-2015-04-09/#3829746238746290

http://forum.memect.com/thread/ml-2015-03-13/#3819982419348200

http://forum.memect.com/thread/ml-2015-02-20/#3812260121957438

http://forum.memect.com/thread/ml-2015-02-20/#3811875445703778

http://forum.memect.com/thread/ml-2015-03-04/#3521095694985999

http://forum.memect.com/thread/ml-2015-03-07/#3817600250847911

http://forum.memect.com/thread/ml-2015-03-06/#3817264942055192

http://forum.memect.com/thread/ml-2015-03-05/#3812914039579793

[Naiyan Wang-PPT] http://winsty.net/miscellaneous.html

http://blog.sina.com.cn/s/blog_71329a960102v1eo.html

http://dataunion.org/bbs/forum.php?mod=viewthread&tid=1174&page=1&extra=&_dsign=47f1c982

http://www.csdn.net/article/2014-08-08/2821116

[视频] http://forum.memect.com/thread/ml-2015-01-18/#3797707484964152

http://simonwinder.com/2015/01/what-is-deep-learning/

http://forum.memect.com/thread/ml-2015-01-26/#3802952885834215
http://radar.oreilly.com/2014/07/what-is-deep-learning-and-why-should-you-care.html
https://www.metacademy.org/roadmaps/rgrosse/deep_learning
http://xzh.me/posts/deeplearninglandscape/
http://www.computervisionblog.com/2015/01/from-feature-descriptors-to-deep.html
http://devblogs.nvidia.com/parallelforall/deep-learning-computer-vision-caffe-cudnn/
http://forum.memect.com/thread/ml-2015-02-09/#3800401897637350
http://cacm.acm.org/news/182881-pursuing-deep-learning/fulltext
http://www.open-open.com/lib/view/open1420699854906.html
http://www.valseonline.org/thread-326-1-1.html
http://www.valseonline.org/thread-274-1-1.html
http://www.csdn.net/article/2015-05-15/2824688
http://www.computervisionblog.com/2015/04/deep-learning-vs-probabilistic.html
http://www.amplifypartners.com/interviews/on-the-evolution-of-machine-learning-from-linear-models-to-neural-networks/
http://blog.csdn.net/abcjennifer/article/details/7804962
https://en.wikipedia.org/wiki/Deep_learning

学习 PRML.pdf 中的 3，4，5 章，学习神经网络先；

Tutorial：
1. [UFLDL Tutorial] http://ufldl.stanford.edu/tutorial/（结合看代码——[Matlab 基本算法实现]）
[中文翻译版] http://www.52ml.net/12019.html [Github 代码] https://github.com/jatinshah/ufldl_tutorial

看 Yann LeCun 的 LeNet-5 （Demo: http://yann.lecun.com/exdb/lenet/ ，Paper: Y. LeCun, L. Bottou, Y. Bengio, and P. Haffner. Gradient-based learning applied to document recognition. Proceedings of the IEEE, november 1998.）

然后看各种论文。
1.1 论文相关
[好多论文 2014 年为主] http://memkite.com/deep-learning-bibliography/
[88pages-888references] http://arxiv.org/abs/1404.7828
[Learning a Deep Convolutional Network for Image Super-Resolution]
http://forum.memect.com/thread/ml-2015-03-11/#3819296847024040
[改善 CNN 对输入图像大小固定的限制]
http://forum.memect.com/thread/ml-2015-03-12/#3819434415758043

2. [Caffe Tutorial] http://caffe.berkeleyvision.org/tutorial/（结合看代码——[Caffe, C++版 CNN, 支持 fine-tuning]）

3. [deeplearning.net 上的 Theano tutorial] http://deeplearning.net/tutorial/（结合看代码——[Theano, Python 版]）

[结合 Theano/OpenDeep 的深度学习介绍] http://forum.memect.com/thread/%E7%AC%AC253%E6%9C%9F%E6%9C%BA%E5%99%A8%E5%AD%A6%E4%B9%A0%E6%97%A5%E6%8A%A52015-05-29/#weibo-3847935470648309

4. [另一个 summary，用于补充] http://rt.dgyblog.com/ref/ref-learning-deep-learning.html
[另一个 summary，用于补充] http://digitalmind.io/post/deep-learning
https://docs.google.com/document/d/1IXF3h0RU5zz4ukmTrVKVotPQypChscNGf5k6E25HGvA/edit#heading=h.kgfoieox0wmj
https://www.evernote.com/shard/s433/sh/52b77d5f-a2cf-46f5-9b4c-68620f1682be/73527274007c5fa123cd6cc0d8bb10df
http://jmozah.github.io/links/

5. [深度强化学习] http://wanghaitao8118.blog.163.com/blog/static/13986977220153811210319/
http://forum.memect.com/thread/ml-2015-02-27/#3814756278512643
http://forum.memect.com/thread/ml-2015-03-09/#3818356836443516
http://forum.memect.com/thread/ml-2014-11-26/#3779239117329622

6. [Deep Q-network] http://forum.memect.com/thread/ml-2015-02-27/#3814759491210481

配置与调参：
[参数初始化] http://deepdish.io/2015/02/24/network-initialization/
http://forum.memect.com/thread/ml-2015-04-20/#3833799060263602

[GPU 选择] https://timdettmers.wordpress.com/2014/08/14/which-gpu-for-deep-learning/
[硬件指南] http://forum.memect.com/thread/ml-2015-03-10/#3818820919934952

代码：
[Datasets] http://deeplearning.net/datasets/
[Matlab，基本算法实现] https://github.com/rasmusbergpalm/DeepLearnToolbox
[Caffe, C++版 CNN，支持 fine-tuning] https://github.com/BVLC/caffe
[Caffe 配置-官网] http://caffe.berkeleyvision.org/installation.html
[Caffe 配置] http://weibo.com/p/2304189db078090102vdvx
[Caffe 配置-Windows] http://weibo.com/p/230418eb3aea990102uybn
[Caffe 笔记] http://frank19900731.github.io/blog/2014/12/04/diy-deep-learning-for-vision-a-tutorial-with-caffe-bao-gao-bi-ji/
[Caffe ECCV14Tutorial] http://forum.memect.com/thread/ml-2015-02-04/#3796632980118464
[Caffe 作者微信访谈] http://www.valseonline.org/thread-256-1-1.html
[一个博客] http://radar.oreilly.com/2014/07/how-to-build-and-run-your-first-deep-learning-network.html
[一个博客] http://blog.csdn.net/abcjennifer/article/details/46424949
[DIY DL] https://docs.google.com/presentation/d/1UeKXVgRvvxg9OUdh_UiC5G71UMscNPlvArsWER41PsU/preview?sle=true&slide=id.p

[MatConvNet, Matlab 版 CNN, vlfeat 出品] http://www.vlfeat.org/matconvnet/
[Theano, Python 版] http://deeplearning.net/software/theano/#
[对应教程] http://deeplearning.net/tutorial/contents.html#
[一个工具包] http://www.cs.cmu.edu/~ymiao/pdnntk.html
[Github 项目 18 个] http://hao.memect.com/?p=405
[Github 项目 100 个] http://meta-guide.com/software-meta-guide/100-best-github-deep-learning/
[Hinton 组 ImageNet 等开源] http://deeplearning.cs.toronto.edu/codes

学习网站：
http://neuralnetworksanddeeplearning.com/
[CUHK 整理] http://mmlab.ie.cuhk.edu.hk/project_deep_learning.html
[CUHK 课程] https://piazza.com/cuhk.edu.hk/spring2015/eleg5040/home
[Hinton 个人主页] http://www.cs.toronto.edu/~hinton/
[Stanford 公开课] http://vision.stanford.edu/teaching/cs231n/syllabus.html
http://www.matthewzeiler.com/
http://www.humphreysheil.com/blog/deep-ml-learning
[Bengio 的书，in preparation] http://www-labs.iro.umontreal.ca/~bengioy/dlbook/
[一个中文博客] http://blog.csdn.net/zouxy09/article/category/1387932
[一个中文博客] http://so.csdn.net/so/search/s.do?q=DeepLearning&u=u012162613&t=blog
[tornadomeet 博
客] http://www.cnblogs.com/tornadomeet/tag/Deep%20Learning/default.html?page=3
[牛津大学课程] http://forum.memect.com/thread/ml-2015-03-25/#3824161371276761
http://forum.memect.com/thread/ml-2015-02-09/#3808221590077749
http://deeplearning.net