

CATALOG OF COURSES FROM STANFORD RELATIVE TO OPTIMIZATION/DL/ML

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From time to time due to popularity word “Neural Nets” people want increase their skills on the subject. It’s probably fine, even the truth is:

“...Optimization is in fact more bigger subject then ML or AI...”

Stephen Boyd, 01:15 <https://www.youtube.com/watch?v=uF3htLwUHn0&t=822s>

But let’s assume that you just want to upgrade (or obtain skills) in this area called deep learning, because it’s fashionable and there are a lot of job opportunities (and probably will be in nearest 10 years). Below are links to courses relative to the following topics:

	Course relative to deep learning at Stanford University
	Courses relative to machine learning/data mining and Statistics at Stanford University
	Course relative to math optimization at Stanford University

One question can be raised immediately. Do I need to know and before ?

It’s not so easy question. Answer is “no” you can skip it, but it’s only true if you don’t move push boundary of methods and tasks and just want to learn something to apply.

	Course Number	Course name	Link	Video	Slides
1	CS231N	Convolution Neural Nets	http://cs231n.stanford.edu/	+	+
2	CS230	Deep Learning	http://cs230.stanford.edu/	-	+
4	CS224N	NLP with DL	http://web.stanford.edu/class/cs224n/	+	+
5	CS20SI	Tensorflow for DL Research	http://web.stanford.edu/class/cs20si/	-	+
6	STATS385	Theories of Deep Learnig	https://stats385.github.io/	+	+
7	STATS315B	Modern Applied Stat	http://statweb.stanford.edu/~jhf/stats315b.html	-	-
8	MIT Deep Learning	MIT.Deep Learnig.	https://deeplearning.mit.edu/?fbclid=IwAR09DsWF0ytwVNC1mmxc0UJ905hzH1GOFb4Dcb4S66aRRaKlx0vu7hmzqsE	+	+
9	CS224U	Natural Language Understanding	https://web.stanford.edu/class/cs224u/index.html	-	+
10	CS331B	Representation Learning in Computer Vision	http://web.stanford.edu/class/cs331b/schedule.html	-	+
11	CS236	Deep Generative Models	https://deepgenerativemodels.github.io/syllabus.html	-	+
12	CS230	Deep Multi-Task and Meta Learning	https://cs330.stanford.edu/	+	+

	Course Number	Course name	Link	Video	Slides
13	MIT.Math for ML	MIT.Math for ML	https://ocw.mit.edu/courses/mathematics/18-657-mathematics-of-machine-learning-fall-2015/lecture-notes/	-	+
14	CS229	Machine Learning	http://cs229.stanford.edu/syllabus.html	+/- Only 2008	+
15	CS221	Artificial Intelligence: Principles and Techniques	http://web.stanford.edu/class/cs221/	-	+
16	CS229T	Statistical Learning Theory, J.Duchi	https://web.stanford.edu/class/cs229t/	-	+
17	STATS315A	Modern Applied Statistics: Elements of Statistical Learning, R.Tibshirani	https://statweb.stanford.edu/~tibs/stat315a.html	-	-
18	STATS315B	Modern Applied Statistics: Elements of Statistical Learning, J.Friedman	http://statweb.stanford.edu/~jhf/stats315b.html	-	-
19	CS224W	Machine Learning with Graphs	http://web.stanford.edu/class/cs224w/	- (some in youtube)	+
20	CS 228	Probabilistic Graphical Models	https://ermongroup.github.io/cs228-notes/	-	+
21	CS 246	Mining Massive Data Sets	http://web.stanford.edu/class/cs246/	?	+
22	CS 234	Reinforcement Learning	http://web.stanford.edu/class/cs234/schedule.html	-	+
	Course Number	Course name	Link	Video is public	Slides are public
23	CS205A	Math methods for robotics, vision, graphics	http://graphics.stanford.edu/courses/cs205a/	-	+
24	EE263	Introduction to linear dynamic systems, Boyd	http://ee263.stanford.edu/	+	+
25	EE364A	Convex Optimization I, Boyd	https://stanford.edu/class/ee364a/	+	+
26	EE364B	Convex Optimization II, Boyd	https://stanford.edu/class/ee364b/	+	+
27	MATH301	Advanced topics in convex optimization, E.Candes	http://statweb.stanford.edu/~candes/math301/index.html	-	+
28	MS&E314/ CME336	Conic Linear Optimization	https://web.stanford.edu/class/msande314/handout.shtml	-	+
29	MS&E211	Introduction to Optimization	https://web.stanford.edu/class/msande211/contact-and-office-hours.html	-	-

30	CME304	Numerical Optimization	http://web.stanford.edu/class/cme304/	-	-
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