HOW TO DO DEEP LEARNING WITHOUT A PHD.

MATH FOR DEEP LEARNING:

1) Deep Learning, Ian Goodfellow (www.deeplearningbook.org) - Chapter 1 of this book covers Linear Algebra, Probability and Calculus. Short, Simple and Comprehensive.
2) Elements of Statistical Learning, Friedman - (web.stanford.edu/~hastie/Papers/ESLII.pdf) Comprehensive Guide to learning the math behind Machine Learning.
3) Math and Computation, Avi Wigderson (www.math.ias.edu/files/mathandcomp.pdf)

BASICS OF COMPUTER SCIENCE

1) Introduction to Algorithms by Cormen - Universal Guide to Learning the basics of computer science. What came first? Algorithms or Cormen? Nobody knows….

MATLAB

1) Just Joking, MATLAB sucks. We only use Python.
2) Python Course from Codecademy (https://www.codecademy.com/learn/learn-python)
3) Python Documentation (https://docs.python.org/3/)
4) On a side note, when learning any new package or framework, the best place to get started is the documentation. The second best place is an introductory blog (Medium is a good place).

STATISTICAL LEARNING/MACHINE LEARNING INTRO

1) Andrew Ng's Machine Learning Course (https://www.coursera.org/learn/machine-learning)
2) Machine Learning by ColumbiaX on EdX
3) Siraj Raval's Live Videos on YouTube - He explains complex problems in a simple way. His live videos are great. His video descriptions also have good learning resources.

*Our take: Watch a week of videos in Andrew Ng's course and then watch Siraj Raval's videos and read blogs to get a deeper understanding of the concepts. Then implement them as a project.

NEURAL NETWORKS/DEEP LEARNING

1) Andrew Ng's Deep Learning Specialisation Course (www.coursera.org/specializations/deep-learning) - Yes, his courses are *that* good.
2) Neural Networks and Deep Learning by Michael Nielsen (www.neuralnetworksanddeeplearning.com) - Lucid explanation of Neural Networks
3) Hinton's Neural Network Course (www.coursera.org/learn/neural-networks) - Godfather of Deep Learning. Need I say more?
4) Stanford Computer Vision Course - http://cs231n.stanford.edu/

5) Stanford NLP Course - http://web.stanford.edu/class/cs224n/
6) Reinforcement Learning by David Silver

GETTING STARTED WITH PROJECTS IN DEEP LEARNING

1) Fast.ai's courses are based around projects (http://www.fast.ai)
2) Siraj Raval's Youtube Channel has a lot of projects that you can practice
3) Sentdex's Youtube Channel also has a lot of projects
4) Machine Learning Mastery (www.machinelearningmastery.com)

SOME ESSENTIAL PACKAGES/FRAMEWORKS

1) Numpy - http://www.numpy.org/
2) Pandas - https://pandas.pydata.org/
3) Matplotlib - https://matplotlib.org/
4) Keras - https://keras.io/
5) NLTK - http://www.nltk.org/
6) OpenCV - https://opencv.org/
7) TensorFlow - https://www.tensorflow.org/
8) Sci-kit Learn - http://scikit-learn.org/

BLOGS

1) Math - http://www.inference.vc
2) NLP and lit surveys: http://ruder.io
3) Almost everything AI&DL: http://www.wildml.com
4) Best journal hands down: https://distill.pub
5) Intuition behind DL architectures: http://colah.github.io
6) Learn ML concepts easily and quickly - http://fastml.com/

RESEARCH PAPERS

1) http://deeplearning.net/reading-list/
2) Google Brain - https://research.google.com/teams/brain/
3) Deep Mind - https://deepmind.com/research/publications/
4) Arxiv Sanity - http://www.arxiv-sanity.com/
5) Paper summaries: http://blog.acoyler.org

SYSTEMS/DEPLOYMENT/CLOUD

1) Architecture of Open Source Applications - http://aosabook.org/en/index.html
2) FloydHub - https://www.floydhub.com/
3) Google Cloud Platform - https://cloud.google.com/
4) Amazon Web Services - https://aws.amazon.com/

MACHINE LEARNING NEWS & COMPETITIONS

1) KDNuggets - https://www.kdnuggets.com/
2) Hacker News - https://news.ycombinator.com/
3) Indian Deep Learning Initiative (IDLI) & AIDL FB Page
4) Reddit - r/MachineLearning, r/learnmachinelearning, r/datascience
5) Twitter is where researchers share and discuss papers, concepts and ideas
6) ML Challenges, Competitions & Datasets - https://www.kaggle.com/