# AI/ML: Useful links

1. Math basics  
     
   [Maths for ML](https://www.youtube.com/watch?v=T3TpdPmTLso&t=3125s) – (Linear Algebra)  
   <https://www.youtube.com/watch?v=T3TpdPmTLso&t=3125s>  
   <https://www.youtube.com/watch?v=Y72JGMxedms>  
   <https://www.youtube.com/watch?v=bwIdXWmgSlg>  
   <https://www.youtube.com/watch?v=0GzMcUy7ZI0>  
   <https://www.youtube.com/watch?v=G4N8vJpf7hM>  
     
   Set up Ananconda/Jupyter on your machine – Python 3.5 preferred

[Youtube Video to help you](https://www.youtube.com/watch?v=OOFONKvaz0A&t=523s)

[Guide to help you set up](https://medium.com/better-programming/beginners-quick-guide-for-handling-issues-launching-jupyter-notebook-for-python-using-anaconda-8be3d57a209b)

1. Basics of AI/ML  
     
   <https://medium.com/machine-learning-for-humans/why-machine-learning-matters-6164faf1df12>  
     
   LinkedIn Learning: Course by: Doug Rose: **Artificial Intelligence Foundations: Machine Learning**

<https://medium.com/data-science-group-iitr/algos-algos-everywhere-f4e684473f14>

1. ServiceNow ML platform  
     
   <https://www.servicenow.com/products/predictive-intelligence.html>  
     
   <https://docs.servicenow.com/bundle/newyork-performance-analytics-and-reporting/page/administer/predictive-intelligence/concept/predictive-intelligence.html>  
     
   [Word Embedding](https://www.youtube.com/watch?v=5PL0TmQhItY)  
     
   <https://towardsdatascience.com/introduction-to-word-embedding-and-word2vec-652d0c2060fa#targetText=Word%20embedding%20is%20one%20of,representations%20of%20a%20particular%20word>  
     
   <https://monkeylearn.com/blog/what-is-tf-idf/>  
     
   <https://www.analyticsvidhya.com/blog/2016/11/an-introduction-to-clustering-and-different-methods-of-clustering/>

Bertelsmann Tech scholarship - neural networks:

Lesson 3:

Introduction to neural networks tutorials

Perceptrons –

<https://towardsdatascience.com/mcculloch-pitts-model-5fdf65ac5dd1?source=user_profile---------9----------------------->

<https://towardsdatascience.com/perceptron-the-artificial-neuron-4d8c70d5cc8d?source=user_profile---------8----------------------->

<https://towardsdatascience.com/perceptron-learning-algorithm-d5db0deab975?source=user_profile---------7----------------------->

[But what is a Neural Network? | Deep learning, chapter 1](https://www.youtube.com/watch?v=aircAruvnKk)(3 videos of this series)

[Deep Learning Tutorial (the theory)](https://www.youtube.com/playlist?list=PLp_FpnyDwvuCU1GN376wUXG8vROXAtiFn)

<https://www.youtube.com/watch?v=SGZ6BttHMPw&list=PLGskxgfYX5-7gith1jPJyTREsajbDN8vR&index=2&t=0s>

Perceptron as gates - <https://medium.com/@stanleydukor/neural-representation-of-and-or-not-xor-and-xnor-logic-gates-perceptron-algorithm-b0275375fea1>

Loss functions-  
<https://www.analyticsvidhya.com/blog/2019/08/detailed-guide-7-loss-functions-machine-learning-python-code/>

Backpropagation animation - <https://developers-dot-devsite-v2-prod.appspot.com/machine-learning/crash-course/backprop-scroll>

Log loss - <https://towardsdatascience.com/understanding-binary-cross-entropy-log-loss-a-visual-explanation-a3ac6025181a>

Weight initialization: <https://towardsdatascience.com/weight-initialization-techniques-in-neural-networks-26c649eb3b78>

Gradient descent - <https://machinelearningmastery.com/gradient-descent-for-machine-learning/>

Variants of gradient descent - <https://machinelearningmastery.com/gradient-descent-for-machine-learning/>

Activation functions - <https://towardsdatascience.com/activation-functions-neural-networks-1cbd9f8d91d6>

<https://towardsdatascience.com/activation-functions-and-its-types-which-is-better-a9a5310cc8f>

Bias and variance - <https://missinglink.ai/guides/neural-network-concepts/neural-network-bias-bias-neuron-overfitting-underfitting/>

Regularization - <https://www.analyticsvidhya.com/blog/2018/04/fundamentals-deep-learning-regularization-techniques/>

Vanishing gradient - <https://towardsdatascience.com/the-vanishing-gradient-problem-69bf08b15484>

Residual network/skip connections - <https://towardsdatascience.com/residual-blocks-building-blocks-of-resnet-fd90ca15d6ec>

Momentum - <https://www.quora.com/What-does-momentum-mean-in-neural-networks>