**Animated Resources to Understand Machine learning and Deep Learning**

1. **Machine Learning and Algorithms**

1. Visual intro to machine learning –

<http://www.r2d3.us/visual-intro-to-machine-learning-part-1/>

1. Model tunning and Bias-Variance Trade-off

<http://www.r2d3.us/visual-intro-to-machine-learning-part-2/>

1. Ordinary Least Square regression

<https://setosa.io/ev/ordinary-least-squares-regression/>

1. Regression Analysis

<https://seeing-theory.brown.edu/regression-analysis/index.html>

1. Random Forest Demo

<https://cs.stanford.edu/~karpathy/svmjs/demo/demoforest.html>

1. Naïve Bayes

<https://seeing-theory.brown.edu/bayesian-inference/index.html>

1. KNN demo

<http://vision.stanford.edu/teaching/cs231n-demos/knn/>

1. K-Means Clustering

<https://www.naftaliharris.com/blog/visualizing-k-means-clustering/>

1. DBSCAN Clustering

<https://www.naftaliharris.com/blog/visualizing-dbscan-clustering/>

1. Dimensionality Reduction

<https://dimensionality-reduction-293e465c2a3443e8941b016d.vercel.app/>

1. PCA

<https://setosa.io/ev/principal-component-analysis/>

1. **Deep Learning**
2. Basic Neural Network

<http://jalammar.github.io/feedforward-neural-networks-visual-interactive/>

<http://jalammar.github.io/visual-interactive-guide-basics-neural-networks/>

1. Backpropagation

<https://home.agh.edu.pl/~vlsi/AI/backp_t_en/backprop.html>

1. Initializing Neural Network

<https://www.deeplearning.ai/ai-notes/initialization/>

1. Tensorflow Playgroud

<http://playground.tensorflow.org/#activation=tanh&batchSize=10&dataset=circle&regDataset=reg-plane&learningRate=0.03&regularizationRate=0&noise=0&networkShape=4,2&seed=0.70211&showTestData=false&discretize=false&percTrainData=50&x=true&y=true&xTimesY=false&xSquared=false&ySquared=false&cosX=false&sinX=false&cosY=false&sinY=false&collectStats=false&problem=classification&initZero=false&hideText=false>

1. Parameter Optimization

<https://www.deeplearning.ai/ai-notes/optimization/>

1. **Convolutional Neural Network**
2. CNN visualization Video

<https://www.youtube.com/watch?v=f0t-OCG79-U&list=WL&index=4>

1. Image Kernels Explained

<https://setosa.io/ev/image-kernels/>

1. MNIST-keras demo

<https://transcranial.github.io/keras-js/#/mnist-cnn>

1. CNN Explainer

<https://poloclub.github.io/cnn-explainer/>

1. **Sequence Models**
2. RNN, LSTM, GRU

<https://towardsdatascience.com/animated-rnn-lstm-and-gru-ef124d06cf45>

1. Word to vec

<http://jalammar.github.io/illustrated-word2vec/>

1. Transformer

<http://jalammar.github.io/illustrated-transformer/>

1. BERT

<http://jalammar.github.io/illustrated-bert/>

1. **Other Resources**
2. Collection of interactive ML examples

<https://aihub.cloud.google.com/s?category=notebook>

1. Teachable Machine

<https://teachablemachine.withgoogle.com/>