# Deep Learning Self-Learning Resources

This is a list of free material that I have personally used to study deep learning (and related topics) or have been recommended to me.

## Deep Learning

### Courses

- Deep Learning Specialization by deeplearning.ai (Andrew Ng)
- MIT 6.S191 Introduction to Deep Learning
- Stanford CS231n: Convolutional Neural Networks for Visual Recognition (Fei-Fei Li, Andrej Karpathy)
- Google's Machine Learning Crash Course
- Deep Unsupervised Learning (Pieter Abbeel)
- Deep Reinforcement Learning (Sergey Levine)

### Textbooks

- Deep Learning (Ian Goodfellow, Yoshua Bengio, and Aaron Courville)
- Neural Networks and Deep Learning (Michael Nielsen)
- Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow, 2nd Edition (Aurelion Geron)

## Mathematics

### Courses

- Khan Academy

    - Linear Algebra
    - Probability and Statistics
    - Calculus
- MIT OCW Linear Algebra (Gilbert Strang)
- 3blue1brown Youtube Channel
    - Deep Learning
    - Calculus
    - Linear Algebra
- MIT OCW Single Variable Calculus

# Artificial Intelligence

## Courses

- Udacity: Intro to Artificial Intelligence (Peter Norvig and Sebastian Thrun)
- Berkeley CS188: Introduction to Artificial Intelligence (Pieter Abbeel and Dan Klein)
- UCL Course on Reinforcement Learning (David Silver)

## Textbooks

- Artificial Intelligence: A Modern Approach (Stuart Russel and Peter Norvig)
- Pattern Recognition and Machine Learning (Christopher Bishop)
- Reinforcement Learning: An Introduction (Andrew Barto and Richard S. Sutton)

# Coding

## Tutorials

- PyTorch Tutorials
- TensorFlow Tutorials

## Online Coding Environment (with GPU resource)

- Google Colabs
- Gradient by Paperspace

## Practical

- Kaggle
    - Community of people interested in science, data and artificial intelligence who share data, models, and collaborate
    - Host competitions where participants compete to design techniques to achieve the best score on a given problem and dataset
- GitHub
    - Site for hosting open source code
    - Great place to look for example code to refer to