**June 10 - 16**

1. Weeks 1-3 of [Machine Learning](https://www.coursera.org/learn/machine-learning?utm_source=gg&utm_medium=sem&utm_content=94-BrandedSearch-IN&campaignid=1776545273&adgroupid=69298819109&device=c&keyword=andrew%20ng%20machine%20learning%20lecture&matchtype=b&network=g&devicemodel=&adpostion=1t2&creativeid=346568280203&hide_mobile_promo&gclid=CjwKCAjwmZbpBRAGEiwADrmVXqU9oImg3Ki5FwyGDuduFnHHR0enaBX84ceDJi8dCB4gXF4OegCRdxoC7_0QAvD_BwE) by Andrew Ng
2. Basics of NumPy from [Numpy Documentation](https://www.numpy.org/)

**June 17 - 26**

1. [Neal Networks and Deep Learning](https://www.coursera.org/learn/neural-networks-deep-learning?specialization=deep-learning) by Andrew Ng
2. Coding Single Node Binary Classifier from scratch
3. Coding Bi Layer (3 nodes in Hidden Layer) Binary Classifier
4. Developing a Multi Layer Neural Network to classify the MNIST Dataset, from scratch using Numpy.

**June 27 - July 05**

1. Weeks 1-2 of [Convolutional Neural Networks](https://www.coursera.org/learn/convolutional-neural-networks?specialization=deep-learning) by Andrew Ng
2. Weeks 1-2 and Batch Normalization from [Improving Deep Neural Networks](https://www.coursera.org/learn/deep-neural-network?specialization=deep-learning) by Andrew Ng
3. Deep Learning tools in PyTorch from [Deep Learning with PyTorch](https://pytorch.org/tutorials/beginner/deep_learning_60min_blitz.html)
4. Features and utilization of nn.Module from [What is Torch.nn Really?](https://pytorch.org/tutorials/beginner/nn_tutorial.html#mnist-data-setup)
5. Implementation of CNN using nn.Module
6. Extending user interface from pictures to mouse input by [Using Mouse as a Paint Brush](https://opencv-python-tutroals.readthedocs.io/en/latest/py_tutorials/py_gui/py_mouse_handling/py_mouse_handling.html)
7. Integrating real-time video capture and Object Tracking using [Open CV](https://opencv.org/)

**Errors and Solutions :**

1. Check if the weights are initialized to small, normalized values to solve the problem of slowly converging gradients and low accuracy.
2. Shuffle the training set to avoid redundancy.
3. In case of the MNIST Dataset, change the batch size to optimize training time.
4. If Pandas is unable to exclude headers from csv then manually open the file in a spreadsheet manager and the data (without headers and margins) to another blank csv and then use that.

**Additional Resources :**

1. [Machine Learning Cheat Sheet](https://ml-cheatsheet.readthedocs.io/en/latest/)
2. [CNN using PyTorch](https://adventuresinmachinelearning.com/convolutional-neural-networks-tutorial-in-pytorch/)
3. [Object Tracking using OpenCV](https://www.pyimagesearch.com/2018/07/30/opencv-object-tracking/)