**Computer Vision**

1. **Basic Programming Language:**
   1. Python
   2. C++
2. **Basic Of Computer Vision:**
   1. Introduction to computer vision
   2. Introduction to images
   3. Basic image operations
   4. Mathematical operations on images
   5. Image Annotation
   6. Binary Image Processing
   7. Image Enhancement and Filtering
      1. Color Spaces
      2. Color Transforms
      3. Image Filtering
      4. Image Smoothing
      5. Image Gradients
   8. Geometric Transforms and Image Features
      1. Geometric Transforms
      2. Image Features
      3. Feature Matching
   9. Image Segmentation
   10. Image Recognition
   11. Image Classification
   12. Object Detection
   13. Video Analysis
   14. **Basic mathematics**
3. **Library Of Computer Vision:**
   1. Scikit-learn (not exactly for CV)
   2. OpenCV
   3. PyTorch/TensorFlow
   4. NumPy
   5. Matplotlib
   6. Pandas
   7. PIL
   8. SciPy
4. **Practice Small Project:**
   1. **Image Processing Tools using TkInter (Gary, Brightness, Color Space Change, Crop, Image Resolution Change)**
   2. Colors detection
   3. Object tracking
   4. Traffic light detection
5. **Learn Deep Learning:**
   1. Supervise learning
   2. **Unsupervised learning**
   3. Regression
   4. Classification
   5. **Overfitting**
   6. Underfitting
   7. Accuracy Metrics
   8. Visualization
   9. NN (Neural Network)
      1. Neuron
      2. **Weights**
      3. **Bias**
      4. **Activation Function**
      5. **Loss function**
      6. **Input / Output / Hidden Layer**
      7. **MLP (Multi-Layer perceptron)**
      8. **Forward Propagation**
      9. **Cost Function**
      10. **Gradient Descent**
      11. **Learning Rate**
      12. **Backpropagation**
      13. **Batches**
      14. **Epochs**
      15. **Dropout**
      16. **Batch Normalization**
      17. **Data Augmentation**
   10. ANN (Artificial Neural Network)
   11. CNN (Convolutional Neural Network)
       1. **Filters**
       2. **Pooling**
       3. **Padding**
       4. **Stride**
       5. **kernel**
   12. RNN (Recurrent neural network)
   13. Statistics, Linear Algebra, Differential Calculus, Probability theory
6. **Practice Large Project:**
   1. Hand gesture recognition
   2. Human emotion recognition
   3. License plate recognition
   4. Face mask detection