AI Courses by OpenCV
COMPUTER VISION II

Module 1 : Facial Landmark Detection

1. Introduction to Dlib
2. Facial Landmarks Detection using dlib
3. Application - Face Alignment
4. Improving Speed of Facial Landmark Detector
5. Improving accuracy of Facial Landmark Detector
6. Train a custom Facial Landmark Detector
7. Research Paper review.

Module 2 : Applications of Facial Landmarks

1. Alpha Blending & Seamless Cloning
2. Affine and Perspective Transformations
3. Delaunay Triangulation
4. Face Averaging
5. Face Morphing
6. Face Swap
7. Head Pose Estimation
8. Blink Detection and Drowsy Driver Detection

Module 3 : SnapChat Filters

1. Build Snapchat styled filters using Facial Landmarks and Morphing Techniques
2. Beard Filter
3. Aging Filter
4. Moving Least Squares Deformation on images
5. Happify and Fatify filters on Faces

6. Distortion based Filter - Bug Eyes
7. Build a sunglass filter

Module 4 : **Face Recognition**

1. Face Recognition Overview
2. Eigen Faces
3. Fisher Faces
4. Local Binary Patterns Histograms
5. PCA and LDA
6. Deep Metric Learning
7. Deep Learning based Face Recognition

Module 5 : **Introduction to Deep Learning**

1. Basics of Neural Networks
2. Multi Layer Perceptron
3. Train simple models using Keras (Python) and LibTorch (C++)

Module 6 : **Image Classification**

1. Learn about Convolutional Neural Networks
2. Building blocks of a CNN
3. Train simple models using Keras (Python) and LibTorch (C++)
4. Fine tune state-of-the-art models for your application in Keras (Python) and LibTorch (C++)

Module 7 : **Object Detection**

1. Overview of Object Detection methods and their differences
2. Create your own dataset using CVAT Tool

3. Train a custom Object Detector using YOLO

Module 8 : **Text Detection and Recognition**

1. Learn how to perform Text Detection using Deep Learning
2. Introduction to OCR
3. Text Recognition using Tesseract

Module 9 : **Deploying your applications**

1. Learn about various cloud providers
2. Get hands-on with Amazon Web Services
3. Create Web applications using your machine learning model
4. Create an instance on AWS and deploy your machine learning model