5 python libraries for Computer Vision:

1. SimpleCV

   You don't need to learn all the formalities or concepts related to computer vision to develop a professional application. SimpleCV abstracts many of these complicated (but fascinating) ideas to provide a computer vision framework that is easy to learn. SimpleCV is compatible with a wide range of input sources, including the often-undervalued Microsoft Kinect.

   Most suitable for:

   - Application development

   Advantages:

   - Simplifies image acquisition and processing tasks
   - Easy to learn
   - Compatible with Kinect
   - Simple documentation

   Limitations:

   - Smaller community than OpenCV

2. TensorFlow

   TensorFlow, one of the most flexible machine learning frameworks on the market, has been around since 2015. It provides modeling capabilities that can run over CPU/GPU/TPU as well as specializations that can be deployed in browsers (TensorFlow.js) or on mobile devices (TensorLite). TensorHub contains reusable public models that cover many use cases (not just computer vision).

   Most suitable for:

   - Deploying models on heterogeneous devices

   Advantages:

   - Support for several image processing algorithms
   - Support for video processing
   - Comes close to the "model once, deploy everywhere" model
   - Awesome documentation
   - Large community

   Limitations:

   - The two programming models (Graph and Eager) can be confusing to non-experts
   - Some API duplications

3. PyTorch

   Another very popular option is PyTorch, which implements several object detection, image estimation, image segmentation, and image classification algorithms. The dynamic computation model makes it flexible, and given that it is based on C++ and CUDA libraries, it's also fast as well as compatible with CPU/GPU hardware acceleration out of the box.

Most suitable for:

- Deep learning models

Advantages:

- Flexible computation model
- Large number of image processing utilities
- Native GPU acceleration
- Large community

Limitations:

- Steep learning curve
- Limited model execution portability

4. DeepFace

   DeepFace is a niche library with a specific scope, namely face recognition and attribute analysis. It is capable of processing streaming data sources, and can be used as a library or an API. Its utilities can also be complemented with other packages to create a complete suite. DeepFace wraps face detectors from OpenCV, SSD, Dlib, MTCNN, RetinaFace, and MediaPipe.

   Most suitable for:

   - Face recognition and analysis

   Advantages:

   - Several state-of-the-art face recognition models
   - Strong facial attribute analysis
   - Real-Time video analysis
   - HTTP API

   Limitations:

   - No GPU acceleration options
   - Small community
   - Limited scope

5. YOLO

   You Only Look Once (YOLO) is a specialized object detection system, image segmentation library, and Command Line Interface (CLI) utility. It provides five sizes of pre-trained models (nano, small, medium, large, and extra large) that increase its accuracy. It's also able to process video in real time.

   Most suitable for:

   - Object detection

   Advantages:

   - Model size segmentation
   - State-of-the-art object detection models
   - Easy to use
   - Real-Time support for video

   Limitations:

- Limited scope
- Small development community
- Scarce documentation