

Libraries for Vision Project.

Our major tasks in the project include some form of object detection mainly multiple objects in one single image. The best way to implement this would be to use the python programming language because of its support for machine learning and deep learning frameworks.

Since most of our work would be with object recognition and detection the best libraries would be Tensorflow (Tensorflow Object Detection API) and OpenCV-Python

Comparing the major Machine Learning frameworks i.e Tensorflow and Pytorch from the research I have done though Pytorch seems to be more pythonic and easier to learn. Tensorflow has a much larger user base and hence has better tutorials and support. It also scales better than Pytorch. Hence for our purposes I think Tensorflow is the way to go.

Another great library is OpenCV which has implementations of most of the top vision and image processing algorithms. OpenCV is also extensively used for object tracking and detection in videos. OpenCV makes deploying state of the art Vision algorithms very easy and comes with good support for tensorflow as well.

Other Libraries that could be useful include ImageAI and FastAI. These are higher level packages that make use of packages like OpenCV and tensorflow under the hood. These are usually extensively pre trained and hence are easily deployable with high accuracy for common detection tasks.

I think the right approach would be to initially experiment with the models present in higher level packaged that is ImageAI and FastAI and if these do not satisfy our requirements we then move on to Tensorflow and OpenCV.