Prior Knowledge

YOLO V3:

YOLOv3 Object detection:

YOLOv3 (You Only Look Once, Version 3) is **a real-time object detection algorithm that identifies specific objects in videos, live feeds, or images**. The YOLO machine learning algorithm uses features learned by a deep convolution neural network to detect an object.**YOLOv3 is the most recent variation of the You Only Look Once (YOLO) approaches**. This family of models is popular for real-time object detection which in 2015 was introduced in the paper "You Only Look Once: Unified, Real-Time Object Detection" by Joseph Redmon et al.

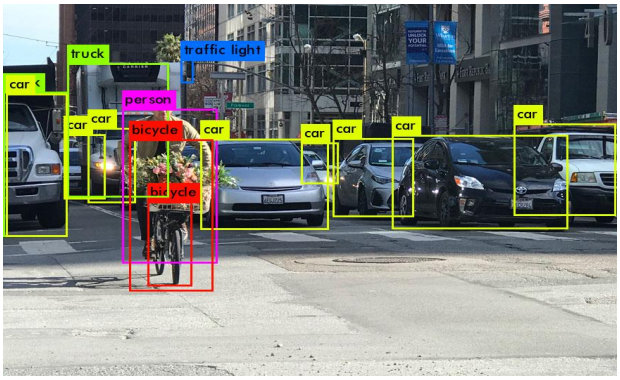


Fig:Real Time Object Detection

YOLO model in a windows environment:

- Create ***yolov3*** and ***training*** folders on your Desktop
- Open a command prompt and navigate to the "**yolov3**" folder
- Create and copy the **darknet.exe** file
- Create & copy the files we need for training (i.e. "**obj**" dataset, "**yolov3-custom.cfg**", "**obj.data**", "**obj.names**" and "**process.py**") to your ***yolov3*** dir
- Copy the "**yolov3-custom.cfg**", "**obj.data**", "**obj.names**", and "**process.py**" files and the **"obj"** folder from the ***yolov3*** directory to the ***darknet*** directory
- Run the **process.py** python script to create the **train.txt** & **test.txt** files
- Download the pre-trained **YOLOv3** weights
- Train the detector
- Check performance
- Test your custom Object Detector

Flask:

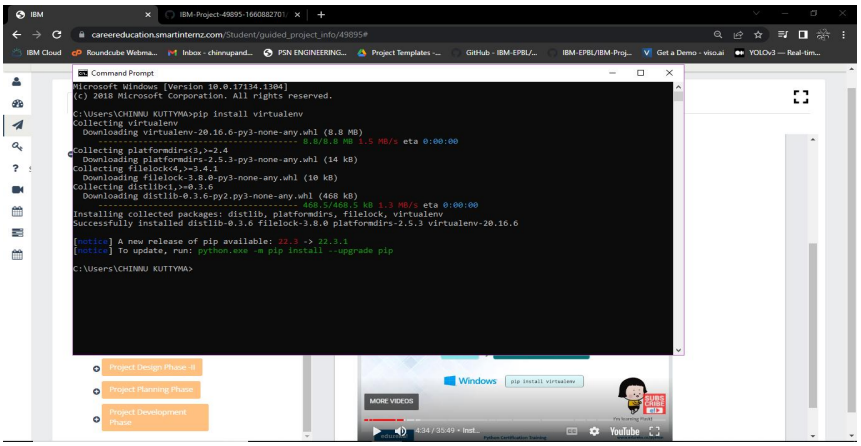
➢ Introduction to Flask:

Flask is a web application framework written in python It is developed by Armin Ronacher, who leads an international group of Python enthusiasts named Pocco. Flask is based on the Werkzeug WSGI toolkit and Jinja2 template engine. Both are Pocco projects.

➢ Installing & Working with Flask:

Install Flask

Virtual python Environmental Builder



➢ Overview of Flask:

Flask is a web application framework written in Python. It is developed by Armin Ronacher, who leads an international group of Python enthusiasts named Pocco. Flask is based on the Werkzeug WSGI toolkit and Jinja2 template engine. Both are Pocco projects.

WSGI

Web Server Gateway Interface (WSGI) has been adopted as a standard for Python web application development. WSGI is a specification for a universal interface between the web server and the web applications.

Werkzeug

It is a WSGI toolkit, which implements requests, response objects, and other utility functions. This enables building a web framework on top of it. The Flask framework uses Werkzeug as one of its bases.

Jinja2

Jinja2 is a popular templating engine for Python. A web templating system combines a template with a certain data source to render dynamic web pages.

Flask is often referred to as a micro framework. It aims to keep the core of an application simple yet extensible. Flask does not have built-in abstraction layer for database handling, nor does it have form a validation support. Instead, Flask supports the extensions to add such functionality to the application. Some of the popular Flask extensions are discussed later in the tutorial.

➢ Practical approach:

Write simple code

flask_blog/hello.py

Copy

```
from flask import Flask

app = Flask(__name__)


@app.route('/')
def hello():
    return 'Hello, World!'
```

Flask -HTML

flask_blog/app.py

Copy

```
from flask import Flask, render_template

app = Flask(__name__)

@app.route('/')
def index():
    return render_template('index.html')
```